



FINDING OF NO SIGNIFICANT IMPACT CAMP MUIR REHABILITATION PLAN ENVIRONMENTAL ASSESSMENT

December 2012

This Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to adopt a minor modification of the agency-preferred alternative, as presented in the Camp Muir Rehabilitation Plan Environmental Assessment (EA), and the NPS's determination that neither significant impacts on the quality of the human environment, nor impairment of park values, will occur from implementing this course of action. This decision completes what the 2005 Commercial Services Plan (CSP) deferred, and no aspects of the CSP are changed in any way.

This document records (1) a FONSI as required by the National Environmental Policy Act of 1969 (NEPA) and (2) a determination of no impairment as required by the NPS Organic Act of 1916 (see Attachment A).

This FONSI and the environmental assessment (EA) constitute the record of the environmental impact analysis and decision-making process for the rehabilitation of the Camp Muir Historic District, including removal and replacement of non-historic structures at Camp Muir. The NPS will implement Alternative 3, which is also a minor modification of the preferred alternative that includes site-specific repairs needed to address the identified deficiencies and the associated improvements to rehabilitate the Camp Muir structures. The approved alternative includes measures for protection of park resources, safety improvements, and sustainable structures that provide for visitor safety; and provides long-term conditions necessary to sustain scenic, natural, and cultural resources. Planned work will improve the efficiency of park operations by reducing maintenance requirements, as well as providing for improved visitor enjoyment and safety while protecting park resources.

Purpose and Need

The purpose of the Camp Muir Rehabilitation Plan is to: 1) restore and preserve the historic character of the Camp Muir Historic District; 2) protect natural resources including unstable soils, rare lichens, and downstream resources; 3) enhance visitor experience for both day users and overnight guests; 4) improve visitor and employee safety by improving waste management and reducing hazards in sleeping and cooking facilities.

Background

Camp Muir is located on a narrow east-west ridge, or "cleaver," at 10,080 feet on the Gibraltar route, long known as the most direct route to the summit of Mount Rainier. Camp Muir is the primary base camp for west-side ascents to the summit of Mount Rainier via the Disappointment

Cleaver, Gibraltar Ledges, and Ingraham Flats direct routes, and is a destination for day hikers, who access the ridge via the trail from Paradise. Up to 500 climbers and hikers visit Camp Muir per day during the peak use months of July and August, and up to 110 people camp at Muir per night during the peak time of year. The number of climbers has ranged from approximately 9,000 to 11,000 annually since 2001. The popularity of Camp Muir as a climbing base camp and destination day hike strains existing toilet and overnight facilities, and has contributed to erosion of the pumice soils on the ridge. Extreme environmental conditions also contribute to the deterioration of structures and challenge park managers in their efforts to maintain the site and its public facilities. Camp Muir is a non-wilderness enclave surrounded by designated Wilderness.

Selected Alternative

The Environmental Assessment (EA) evaluated four alternatives: Alternative 1 (No Action), which would have resulted in no change in the facilities available at Camp Muir; Alternative 2, representing minimum development in which structures that are not historic would be removed; Alternative 3 – the preferred alternative, in which non-historic structures are replaced with new structures compatible with the Historic District near their current locations, and Alternative 4, which also would have replaced non-historic structures with new compatible structures, with a modified spatial arrangement.

The selected alternative (modified Alternative 3) replaces non-historic shelters with new structures that are compatible with the Historic District. The Client and Butler shelters will be removed and replaced. The new shelters will be designed to consider enclosures for existing utilities to minimize visual impact to the Historic District. The shelters will also be designed to provide more efficient storage. New facilities (constructed as applicable) would comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties and would be designed to be compatible with the Camp Muir Historic District and Mount Rainier National Historic Landmark District. New facilities would be compliant with ADA as appropriate.

The selected alternative does not change assigned space; NPS and guided operations are expected to continue as they are, with guides and clients occupying the West side of Camp Muir. NPS rangers will continue to use the historic Guide Shelter, and the historic Public Shelter will continue to be available to independent campers and climbers. The 2005 Commercial Services Plan (CSP) describes the extent of commercial guide services provided at Mount Rainier National Park; this decision does not in any way affect decisions made in the CSP.

Construction phasing would depend on availability of funding, and would consider impacts to operations at Camp Muir. A phasing scenario might occur as follows: during 2013, construct new toilets east of the Public Shelter; in 2014 replace the toilets located west of the Client Shelter with new toilets and remove all old toilets; during 2015 remove the Client Shelter and construct the new Client Shelter; during 2016 add the rock veneer on the Client Shelter and construct the rock pathways; and during 2017 construct a new Cooking/Storage Shelter and remove the old Butler Shelter. Helicopters will be required to transport materials and supplies to Camp Muir; it is estimated that eight 6-hour flight days would be needed and distributed across construction phases. Under this scenario most flights may occur during year two and three of construction, but that would depend on funding availability and length of construction season.

The selected alternative includes all elements of the preferred alternative as described in the EA, which are listed below, with this exception: crushed rock will not be placed on circulation areas at Camp Muir. Removing this activity from the selected alternative reduces the number of helicopter flights to the ridge by a factor of approximately one-third to one-half during the third year of plan

implementation and addresses concerns raised during scoping and public review and comment regarding importation of gravel. The selected alternative includes the following elements:

Replace existing toilets: Four new toilets will be constructed to replace existing toilets. Toilets at the center of the ridge will be relocated to the east side of the ridge. The total number of toilets will be reduced from five to four (two at each location, east and west). All new toilets will be replaced with toilets that are designed to improve separation of solid and liquid waste, and more effectively vent odors away from occupied areas. Toilets designed to separate waste and allow complete removal of solid waste will reduce fecal contamination onsite, and significantly reduce or eliminate the need for employees to directly handle waste.

New Client Shelter: Under Alternative 3, the current Client Shelter will be replaced with a new shelter that will contain 36 beds, as does the current shelter. The building will be designed to have a footprint similar to the existing structure however it will be slightly larger to incorporate storage space and a stone veneer.

New Storage and Cooking Shelter: The existing Butler Shelter will be dismantled and removed from the site and replaced by a historically compatible shelter that will provide cooking and storage space. The new shelter will be placed farther eastward on the ridge toward the historic Guide Shelter to reduce exposure to rock fall. Modular tents used for cooking and melting water by the guides will be phased out once the new shelter is constructed and ready for use.

Historic Public Shelter: The historic Public Shelter will have a new cooking area partitioned within the building to provide separation between sleeping and cooking functions. The partition will reduce sleeping space in the Public Shelter from a maximum of 18 spaces down to 16.

Storage: New structures, such as the new storage and cooking shelter, will be designed to provide more efficient and convenient storage opportunities. New toilets will be designed to include storage of toilet supplies currently occupying space in the Men's Comfort Station (NPS storage), which will make more equipment space available to NPS rangers. Existing metal storage containers currently scattered throughout the site will be eliminated.

Utilities and Instrumentation: Utilities (energy sources for lighting, cooking, ventilation fans, communications) and instrumentation (weather station and seismic instruments) will be similar to present conditions; however the NPS will continue to look for ways to take advantage of technology that decreases the size of equipment and reduces energy consumption. New structures will house and provide physical support for utilities and instrumentation. Design will consider several factors in placement of utilities and instruments, including minimizing visual impact, efficient use of space, and ease of maintenance. Utilities will maintain a similar or smaller footprint as future technology and efficiency is expected to improve (e.g., improved efficiency of solar panels per unit area may improve; replacement of propane tanks with other energy sources may be possible).

Retain Existing Rock Walls and Extend Rock Walls Below Helipad and Public Shelter: New dry laid stone walls will be constructed to infill between existing retaining walls to direct the flow of pedestrian traffic and stabilize pathways along the ridge. On the southeast side of the camp, rock walls will be extended below the Public Shelter and helipad. An estimated 150 feet of new rock wall will be constructed, varying in height from three to six feet. Local rock for walls may be selectively harvested on site from rock fall within the Camp Muir footprint (excluding sensitive lichen areas and Wilderness). This element was changed in the selected alternative so that crushed rock will not be imported.

Provide Orientation Signage and Exhibits: To facilitate understanding and use of Camp Muir, orientation signage and exhibits will be provided for day use visitors, independent climbers and guided clients.

Design Compatible New Facilities: New structures will be designed to be compatible with the Camp Muir Historic District/Mount Rainier National Historic Landmark District and to fit into existing terraces to minimize the amount of new grading and excavation.

Other Alternatives Considered

The Environmental Assessment (EA) evaluated three additional alternatives: Alternative 1 (No Action), which would result in no change in the facilities available at Camp Muir; Alternative 2, a minimum development alternative in which structures that are not historic would be removed; and Alternative 4, which also replaces non-historic structures with new structures, but arranged differently than existing structures.

Under the No Action alternative, existing historic facilities would be repaired or rehabilitated as appropriate to facilitate their preservation and to minimize impacts to other park resources consistent with other alternatives, but non-historic structures would continue to be maintained and repaired. Alternative 1 impacts would continue to result in a number of adverse effects on park operations, primarily as a result of unimproved safety issues; resource degradation or poor visitor experiences caused by lack of information; the continued inadequacy of administrative and other facilities; incremental or piecemeal improvements that are likely to occur without implementation of a comprehensive rehabilitation plan; and long-term increased costs related to continuous maintenance of dilapidated structures. The presence of incompatible structures would continue to have an adverse effect on the character of the historic district.

Alternative 2 would have removed all non-historic structures at Camp Muir and would not have replaced them, which would have reduced the structural footprint on the ridge. Three large tent pads would have been constructed where the Client Shelter currently exists. The Men's Comfort Station would have been converted from NPS storage to public cooking space, and one new historically compatible building would have been constructed to provide NPS storage space.

Alternatives 2 and 4 would improve natural and cultural resources in the long term through the rehabilitation of the Camp Muir Historic District and Mount Rainier NHLD relative to the No Action Alternative, and through the improvement of toilet facilities intended to reduce environmental impacts. Alternative 2, which was considered the minimum development alternative, would require less energy to construct and use the least amount of material that would need to be imported via helicopter. Alternative 2 was not selected because placement of modular tents would intrude upon the historic character of the site having an adverse effect on the character of the historic district, and may adversely impact NPS and guide service operations due to the need for annual set up and take down of gear and supplies that would not be able to be stored at Muir over winter. Severe weather and high winds that are common on the ridge would add to the maintenance and replacement costs of soft-sided shelters. Alternative 2 would also have an adverse impact on guide service operations due to substantial changes in business practices that would have to occur due to lack of hard-sided structures for client sleeping quarters and storage, and would reduce the availability of hard-sided structures for SAR operations.

Three new buildings would have been constructed under Alternative 4: two shelters and one storage structure. A new building would replace the Client Shelter within the same footprint, but

would be smaller, approximately mirroring the size of the historic Public Shelter. A second new shelter would have been constructed on the east side of the ridge to provide additional bed space. A new structure would have been constructed on the west side of the ridge to provide NPS storage space. These changes in configuration would have increased cooking and sleeping space on the east side of the ridge near the current Public Shelter. Alternative 4 would have in-filled historically open space with a large structure and interrupted the view to and from the historic Guide Shelter, resulting in an adverse effect on the character of the historic district.

Alternatives Considered but Dismissed

The NPS also considered, but rejected from analysis in the EA three design concepts that were considered during early scoping in the planning process. These preliminary options were dismissed because they did not meet the purpose and need to restore and preserve the historic character of the Camp Muir Historic District. The options either exceeded the scale of development that currently exists, retained non-historic incompatible structures, or included modifications such as add-ons to historic structures.

The three alternatives dismissed include:

1. “Guide Services West, NPS Central, Public East” consisted of new guide sleeping quarters, a new client shelter, a new NPS multi-function (visitor contact/sleeping/cooking) facility, and a public shelter cooking addition. The Butler Shelter would remain to provide additional NPS storage space.
2. Under “Guide Services and NPS West, Public East” the historic Guide Shelter would include a small addition for cooking; the Public Shelter would receive a new addition for public cooking; the Butler Shelter would be removed and a new facility for shared NPS and concessioner storage would be constructed in its place, and a new facility would be constructed for guide service cooking and sleeping.
3. The concept described as “Public and NPS West, Guide Services East” would connect a new building to the historic Guide Shelter for NPS sleeping; the historic Public Shelter would then be converted via one of several options for use by the guide services, and a new public shelter would be constructed.

Environmentally Preferable Alternative

The Council on Environmental Quality (CEQ) regulations implementing NEPA and the National Park Service NEPA guidelines require that "the alternative or alternatives which were considered to be environmentally preferable" be identified (CEQ Regulations, section 1505.2).

Environmentally preferable is defined as "the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026–46 FR 18038)." The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative.”

Alternative 1 (No Action) is not the environmentally preferable alternative because it would least protect, preserve, or enhance cultural and natural resources, and it would not provide for safety

improvements or visitor experience elements proposed under the action alternatives. Alternative 4, while similar in scope (footprint, cost, materials) to Alternative 3, introduces an additional structure that changes the visual character of Camp Muir including the skyline as a visitor approaches the ridge. Because of this, Alternative 4, while a significant improvement over the No Action Alternative, was not considered environmentally preferable.

Alternative 2 is believed to cause the least amount of damage to the biological and physical environment, including Wilderness. Alternative 3 best protects and preserves the historical and cultural resources, while protecting natural resources second to Alternative 2. Because of this, Alternatives 2 and 3 are equally considered Environmentally Preferable. Alternative 3 is the Preferred Alternative because it meets objectives identified in the purpose and need (Chapter 1) of this analysis supporting public and employee safety, operational improvements and visitor experience.

Resource Protection Measures

To minimize potential adverse impacts associated with the selected alternative, best management practices (BMPs) and resource protection measures will be implemented during the construction and post-construction phases of the project. General measures and resource protection measures for the project are listed in Table 1 below. The NPS responsible party is identified for each measure, as well as who in the park is responsible for post-project monitoring of the effectiveness of the mitigation strategy.

Table 1. Resource protection measures for the Camp Muir rehabilitation project. The following provides the final measures that will be implemented for the selected action to minimize and reduce resource impacts.

General Measures	Responsible Party
<p>1. Construction limits would be clearly marked with stakes prior to the beginning of ground disturbing activities. No disturbance would occur beyond these limits other than protection measures for erosion/sediment control.</p> <p>2. All tools, equipment, barricades, signs, surplus materials, and rubbish would be removed from the project work limits upon project completion. All demolition debris would be removed from the project site. Construction debris would be hauled from the park to an appropriate disposal location.</p> <p>3. Materials, including removed unusable materials would be disposed of outside the park, according to local, county, state, and federal regulations.</p> <p>4. Debris would not be burned or buried in the park.</p> <p>5. Use of BMPs in the project area for drainage area protection would include the following actions, depending on site-specific requirements:</p> <ul style="list-style-type: none"> • Disturbed areas would be kept as small as practical to minimize exposed soil and the potential for erosion. • Excavated materials would be covered with water-repellent, breathable material during storage to prevent erosion/sedimentation. • Silt fences, sediment logs, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures would be installed to limit movement of excavated soil and construction materials from leaving the worksite. Erosion-control measures would be monitored to ensure 	<p>Project Manager, Park Safety Officer, Historical Architect, Lead Climbing Ranger, Plant Ecologist, Environmental Protection Specialist</p>

<p>they are properly installed and are functioning effectively.</p> <ul style="list-style-type: none"> • All imported materials including gravel, rock veneer, and erosion-control materials that are capable of harboring plant seed would be certified weed-free according to North American Weed Management Association (NAWMA) standards to ensure that it is free of noxious weeds. Consult with park Plant Ecologist to ensure imported materials are weed-free. Consultation may include an inspection of the rock source, and control of storage locations so weed seed is not picked up in transport. • All vehicles that haul materials for the project must be inspected by the Plant Ecologist for mud, weeds, and other unwanted substances prior to entering the park. All vehicles would be pressure-washed before their first entry into the park. Hauling vehicles that have previously transported weed-contaminated material would be pressure-washed before transporting clean material. • Proposed locations (Kautz Creek or Fourth Crossing) for soil and rock stockpiles, and turnaround areas would be inspected and approved by the park Resource Advisor or Plant Ecologist. New locations or treatment may be prescribed. 	
Cultural Resources	
<p>1. Limit development/human activities to the snowfields and areas east of the Butler Shelter. Eliminate all foot traffic on the slope above Butler Shelter.</p> <p>2. To avoid rare lichens, their location has been mapped at Camp Muir; the boundary is indicated on all alternative maps. All proposed disturbance would be located within the existing footprint and exclude the lichen areas. User trails that extend onto the ridge above the Butler Shelter will be discouraged through signage and education of employees, guides and visitors.</p> <p>3. Removal of the Butler Shelter provides an opportunity to scarify the existing footprint, and block user trails that lead into the sensitive lichen area.</p> <p>4. Final design of structures would be compatible with the historic district and consultation with the State Historic Preservation Officer would continue throughout the design process.</p>	<p>Project Manager, Historical Landscape Architect, Archaeologist, Historical Architect</p>
Wildlife	
<p>1. Park staff would inform construction personnel of the occurrence and status of special status species within the project area, the potential impacts construction activities might have to the species and the potential penalties for taking or harming a special status species.</p> <p>2. Night work is not permitted.</p> <p>3. Any flights over the park and in particular marbled murrelet habitat and Northern spotted owl habitat must maintain an elevation of at least 500 feet over tree canopy. This will be necessary as helicopters fly from outside the park to the Fourth Crossing.</p> <p>4. All motor vehicles and equipment would have mufflers conforming to original manufacturer specifications that are in good working order and are in constant operation to prevent excessive or unusual noise.</p> <p>5. Use of unmuffled compression brakes would be prohibited within the park boundaries.</p> <p>6. The use of air horns within the park would not be allowed except for safety.</p>	<p>Wildlife Ecologist, Project Manager, Environmental Protection Specialist</p>

<p>7. Any road kill or wildlife collisions would be reported to the park immediately.</p> <p>8. Feeding or approaching wildlife would be prohibited.</p> <p>9. The park Wildlife Ecologist would be notified if bear or fox loiter in the project areas.</p> <p>10. A litter control program would be implemented during construction to eliminate the accumulation of trash. All food items would be stored inside vehicles, trailers, or wildlife-resistant receptacles except during actual use to prevent attracting wildlife.</p>	
Vegetation	
<p>1. Limit development/human activities to the snowfields and areas east of the Butler Shelter. Eliminate all foot traffic on the slope above Butler Shelter.</p> <p>2. To avoid rare lichens, their location has been mapped at Camp Muir; the boundary is indicated on all alternative maps. All proposed disturbance would be located within the existing footprint and exclude the lichen areas. User trails that extend onto the ridge above the Butler Shelter will be discouraged through signage and education of employees, guides and visitors.</p> <p>3. Removal of the Butler Shelter provides an opportunity to scarify the existing footprint, and block user trails that lead into the sensitive lichen area.</p>	Project Manager, Plant Ecologist
Air Quality	
<p>1. Impacts would be minimized by not allowing idling of vehicles at Fourth Crossing or Kautz Creek.</p> <p>2. The use of chainsaws would be limited to dismantling the Butler Shelter and the Client Shelter, and by making minimum cuts to facilitate helicopter transport off site.</p>	Project Manager, Environmental Protection Specialist
Visitor Experience, Health, Safety and Park Operations	
<p>1. The helipad would remain in service without disruption during and after construction (a short- and long-term benefit to park Search and Rescue operations, maintenance, and visitor gathering).</p> <p>2. The status of construction will be communicated via the park website, regional newspapers, radio, entrance stations, visitor centers, news releases, local newspapers, media outlets, and postings in local businesses.</p> <p>3. The Lead Climbing Ranger will participate in and approve final construction sequencing and implementation planning efforts to minimize impacts and ensure safety for the public, concessioners and park operations at Camp Muir.</p> <p>4. Construction workers would wear appropriate attire such as hard hats, gloves, and goggles to protect themselves during construction activities. They will also wear attire, equipment and apply other protective measures appropriate to the environment as advised by the climbing ranger staff.</p>	Project Manager, Lead Climbing Ranger, Safety Officer

Why the Selected Alternative Will Not Have a Significant Effect on The Human Environment

In addition to consideration for the capability of the above-referenced mitigation strategy to avoid, reduce, or eliminate environmental impacts, the criteria defined in 40 CFR §1508.27 were considered in determining that the selected action will not have a significant effect on the quality of the human environment.

1. Impacts that may be both beneficial and adverse: A significant effect may exist even if the agency believes that on balance the effect will be beneficial

Implementation of the selected alternative will result in some adverse impacts; however, the overall benefit of the project outweighs the negative effects. No major adverse or beneficial impacts were identified that will require analysis in an environmental impact statement (EIS).

Historic Structures and Cultural Landscape. Camp Muir is a compact developed site, located on an exposed ridge at high elevation and surrounded by wilderness, factors that create unique challenges for managing and maintaining this site. Listed in the National Register in 1991 and included in the Mount Rainier NHL in 1997, Camp Muir has undergone several changes since the 1930s, including the installation of toilets, addition of the Client Shelter, and the construction of retaining walls. The selected alternative will rehabilitate the site by removing non-compatible structures and by stabilizing the ground plane to reduce erosion that undercuts the stability of all structural components. Approved changes will also restore historic spatial organization, enhancing views to the district and within the camp. Implementation of the selected alternative will result in "no adverse effect" to the Camp Muir Historic District and Mount Rainier NHL.

Soils and Geologic Resources. Rock walls would be placed to stabilize and define pathways. The new, guided public shelter would have a larger footprint than the existing Client Shelter in part due to the increased thickness of rock veneer walls, and in order to reduce the vertical profile relative to the existing structure. Potential impacts due to implementation of the selected alternative will be long-term and minor to moderate due to the increased footprint and disturbance of local soils and geology.

Vegetation. Conservation measures that include the delineation of work areas and avoidance will be implemented to avoid construction impacts to alpine plants, lichens and mosses. Because of this, potential impacts to vegetation in the vicinity of Camp Muir will be negligible to minor.

Water Quality. The replacement of five solar and pit toilets with four redesigned toilets, which rely on the principle of separation and then isolation, will decrease the possibility of fecal contaminated urine reaching substrates and subsurface water beneath the Muir Snowfield, resulting in an overall long-term improvement in downstream water quality over the existing condition. While water quality is expected to improve during the life of the new toilets, minor to moderate impacts to water quality is expected to continue.

Wildlife. Under all alternatives, visitor use and routine administrative operations would continue to have negligible to minor long- and short-term localized effects on wildlife because these areas have existing disturbance and do not comprise major wildlife habitat or linkages. Helicopter and human activity in the area during construction will have moderate adverse impacts on wildlife that would temporarily exceed existing impacts incurred by routine activity through the addition

of two helicopter flight periods per season of construction.

Wilderness. Indirect impacts to wilderness would range from negligible to moderate due to impacts of sound related to construction, and would be temporary, lasting three to five years. Implementation of action alternatives would increase annual flights by 15-25% at Camp Muir during at least two of the construction years. Eliminating importation of gravel for trail stabilization will drastically reduce the need for helicopter transport. Removing modular tents from wilderness and visually intrusive structures from Camp Muir would have long-term moderately beneficial effects on wilderness character. There may be a similar or slight increase in the number of flights required to remove waste from Camp Muir (up to four flights per year) during the shoulder seasons. Potential long-term impacts to wilderness resources due to additional operational flights to remove waste are considered negligible because they will occur during shoulder seasons as is currently the practice, and would be offset because of the expected decline in operational flights related to maintenance of dilapidated buildings.

Air Quality. Potential impacts to air quality related to construction are expected to be short-lived and minor to moderate, occurring periodically through the dismantling process, which is expected to last no more than a few days for each structure. Helicopter flights would contribute to emissions during four flight periods per year of construction. Impacts are anticipated to be very localized and short-term, and moderate due to the duration of construction.

Visitor Experience and Safety. The selected alternative would result in improved independent public and guided public facilities. The historic Public Shelter would be modified on the interior to separate cooking from sleeping space. Independent visitors would be able to use propane and white gas stoves without fear of increasing the carbon monoxide content of air where people are sleeping, resulting in a long-term localized moderate to major beneficial impact on visitor safety. Facilities for guide services and clients would be improved with a new guide/client sleeping facility taking the place of the old Client Shelter. A separate cooking and storage facility would be constructed east of the existing Butler Shelter. The improved storage facilities would be designed to accommodate storage of equipment that has typically been stashed outside, resulting in less clutter, a minor beneficial impact on visitor aesthetic experience. New buildings would be designed and sited to blend in with the natural environment making them less obtrusive, a long-term moderate beneficial impact on visitor aesthetic experience.

Park Operations and Employee Safety. Park operations under implementation of the selected alternative are expected to improve and result in negligible to minor beneficial impact over existing conditions due to decreased maintenance and improved storage conditions. Impacts to NPS operations related to public contact would be similar to existing conditions. The availability of a hard-sided Client Shelter at Camp Muir has allowed continued and reliable support from the guide services during Search and Rescue (SAR) operations, which has greatly benefited the general public and the NPS. The NPS would continue to benefit from the skills and services of professional guides under the selected alternative.

Construction impacts to operations will occur over multiple construction seasons. Impacts to routine operations will be adverse, short-term, and moderate, lasting approximately three to five years beginning in 2013, and depending on funding. The selected alternative will have long-term and minor beneficial impacts on park operations because structures are new, and intended to improve efficiency of operations through design of buildings that consider the location of storage, utilities and instrumentation. This longer-term beneficial impact is expected to improve NPS responsiveness to emergency situations and SAR operations. Construction activities will create

short-term adverse and moderate impacts on NPS and concessioner operations.

2. Degree of effect on public health or safety

Rehabilitation of existing structures and replacement of historically incompatible structures will address public health and safety concerns through the separation of cooking and sleeping quarters and replacement of dilapidated buildings. The replacement of five solar and pit toilets with four redesigned toilets, which rely on the principle of separation and then isolation will reduce the potential exposure to fecal contaminated urine, and eliminate the need for direct handling of waste by NPS Staff. The selected alternative will result in local long-term beneficial effects on public health and safety from improvements to structures at Camp Muir that serve as safe shelter during severe wind and storm events common to this alpine environment.

3. Degree to which effects on the quality of the human environment are likely to be highly controversial

Throughout the environmental process, the proposal to rehabilitate Camp Muir was not highly controversial, nor are the effects expected to generate future controversy. Most of those who commented on the EA were supportive of the preferred alternative with the exception of two commenters who were strongly in favor of Alternative 2, the minimum development alternative and a small handful who supported Alternative 4. In general, opposition to continued establishment and maintenance of non-historic hard-sided structures at Camp Muir was framed in reference to proximity to Wilderness and continued activity of commercial guide services at Mount Rainier National Park. NPS responses to comments are included in the Public Involvement section below.

None of the identified environmental effects from implementation of the project were highly controversial and there is no indication of controversy over the nature of the effects. Given the substance of public comments, there is no evidence that the effects on the quality of the human environment will be highly controversial.

4. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

The anticipated effects on the human environment, as analyzed in the EA, are not highly uncertain, unique, and do not involve unknown risks. Resource conditions in the project area are well known and the anticipated impacts from implementing the work are understood based on NPS experience with similar projects. Construction in a high elevation alpine environment is challenging however, as conditions during the construction season may vary year-to-year and impact construction activities including timelines and worker safety.

5. Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

Rehabilitation of Camp Muir will not result in significant adverse effects on the natural environment, cultural resources, or visitor experience because the project was designed to minimize resource and visitor impacts, and resource protection measures were incorporated into the project to further reduce identified adverse effects. The selected alternative will provide for the long-term protection of resources and will not establish a precedent for future actions that could have significant effects, nor does the action represent a decision about future actions.

6. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

There are no foreseeable future activities or projects at or near the project site; however staging at Kautz Creek and on the Valley Road may occur during rehabilitation of the Nisqually to Paradise Road and Valley Road, scheduled to occur 2014-2018. Because staging for Camp Muir activities would occur during short and discrete time periods (a few days at a time, two to four times per year), this additional impact would be considered negligible and short-term. When combined with past, present, and future activities, the rehabilitation of Camp Muir will have local minor to moderate adverse cumulative impacts on geology and soils due to the increase in external dimensions of structures. Impacts to air quality, wildlife, Wilderness values, visitor experience and operations will be short-term negligible to moderate during the three years of construction. Cumulative effects on the cultural landscape, water quality, Wilderness, visitor use and experience, public health and safety, and park operations will be long-term, negligible to moderate and beneficial. Impacts to special status species (sensitive plants and lichens) would be avoided. Overall, the selected alternative will have no significant cumulative effects.

7. Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources

The Camp Muir Historic District was listed in the National Register in 1991 and included in the Mount Rainier NHL in 1997. The park determined that the undertaking will have no adverse effect on historic properties, including the Mount Rainier National Historic Landmark District, or disturb any known archeological resources. In addition, the NPS concludes that implementation of the selected alternative will have no adverse effect on Indian trust resources, ethnographic resources, or museum collections. The Washington State Historic Preservation Officer (SHPO), in a letter dated July 26, 2012, concurred that the project will have no adverse effect on National Register-eligible or listed historic and cultural resources.

8. Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

No federally listed species or habitats are known to occur in or near the project area, therefore the project would have "no effect" on the listed, proposed, or candidate species or their habitat and will not destroy or adversely modify proposed or designated critical habitat.

9. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

As described in the EA, ecologically critical areas, prime farmlands, and wild and scenic rivers will not be affected by the project.

The selected alternative will rehabilitate the site by removing non-compatible structures and by stabilizing the ground plane to reduce erosion that undercuts the stability of all structural components and restore historic spatial organization, enhancing views to the district and within the camp. The selected alternative will result in no adverse effect on the Camp Muir Historic District or Mount Rainier NHL.

10. Whether the action threatens a violation of federal, state, or local environmental protection law

The selected alternative does not violate any federal, state, or local environmental protection laws.

Public Involvement

Public Scoping. Mount Rainier National Park initiated public scoping with a press release on May 25, 2005 to provide the public and interested parties an opportunity to comment on the proposed project. The park also sent letters to interested individuals, organizations, state, county, and local governments, federal agencies, tribal representatives, local businesses, and media outlets describing the proposed action and asking for comments. The park received 41 written scoping comments. In general, comments included support of the proposed rehabilitation of structures and replacement of toilets and dilapidated structures, to expressions of concern regarding potential impacts to Wilderness, and non-guided climbers. A summary of scoping comments is in the administrative record.

Review of the EA. The EA was released for public review and comment on July 26, 2012; the review period ended September 10, 2012. Five EAs were distributed to five local libraries, and the electronic version of the EA was made available on the NPS Planning, Environment and Public Comment (PEPC) website. No additional EAs were requested by or distributed to the public or other agencies. Three public meetings were held in July 2012 in Ashford, Tacoma and Seattle; 24 people attended public meetings in total. The park received 485 electronic comments through PEPC, and three individual letters during the public review period. In summary, 445 people supported Alternative 3, 16 supported Alternative 4, 13 supported Alternative 2, and one person supported no action. Of the 445 people supporting Alternative 3 (preferred alternative), 308 were form letters sent by climbers who had been guided by one of the three concessioners. All those who provided form letters emphasized the continued use of "weatherports", which are modular tents. 83 people had been guided climbers, but submitted unique letters in support of Alternative 3, or variations of the form letter. 71 respondents were classified as independent (unguided) climbers or non-climbers. Most comments were generally supportive of the proposed action; those who supported Alternative 2 were generally very opposed to the current level of development at Camp Muir and preferred a minimalist approach to the provision of guided climbing services. Those who supported Alternative 4 tended to be independent climbers who believed that Alternative 4 provided the most perceived benefit for independent, unguided climbers.

None of the comments provided additional, new, or substantive information that changed the levels of impact described in the EA. As noted above, one modification is incorporated into the selected alternative based on public comment: importation of gravel to surface trails on the ridge. Concern for the long-term stability of the Historic Guide House was expressed and will contribute to the final design and location of the new Butler Shelter. There were approximately 232 individual comments that were grouped into 35 comment types, which were then sorted into seven categories of concern that are listed below:

1. The appropriateness of the level of development and commercialization.
2. Concern about resource impacts.
3. Concern about the appropriate use of public funding.
4. Analysis is incomplete and biased.
5. Building design concerns and construction sequencing.
6. Consider alternative revisions.
7. Safety concerns.

Public comments that were either outside of the scope of the EA, proposed options that are not feasible or reasonable, or suggested alternatives that were rejected during the planning process and/or do not meet the purpose and need are listed below. Some of these comments may be carried forward for consideration in future efforts to update the park's Wilderness Plan.

- Change the wilderness boundary to support modular tents.
- Support Alternative 3 with modular tents. .
- Allow modular tents in Wilderness.
- Modular tents can be larger and provide enough storage area.
- Add a fee for day use to the Muir Snowfield and Camp Muir
- Only use client shelter as a shelter to get away from any type of harsh weather.
- Use of public money inappropriate for support of guide services.
- Guides getting more than public/alt 3 favors guides.
- Guides are paying the franchise fees so should benefit from improvements.
- Historic Guide Shelter should go back to guides.
- Keep Butler Shelter as is, remove all other non-historic structures.
- Reintroduce Guide Service West, NPS Central, Public East.
- Bunkhouse [Client Shelter] too small (2) Add square footage to the Client Shelter rather than add a building.
- New structure (client shelter becomes public shelter) should have a kitchen, several bunk room areas, common/communal areas, possibly a restaurant.
- Implement Alternative 4, plus increase the size of the new Public Shelter.
- Bunkhouse [Client Shelter] too small. Add square footage to the Client Shelter rather than add a building.

There were several statements supporting the selected alternative, and statements for other alternatives that did not require response. Of the 485 comment letters, 177 were not form letters. Of 177 letters that were not form letters, 137 (77%) supported Alternative 3, 16 (9%) supported Alternative 4, 13 (7%) supported Alternative 2, and one person (<1%) supported No Action. The remaining 10 (6%) supported alternatives either dismissed or not described in the EA. Comments relevant to the analysis and selected alternative and substantive comments are documented in the Errata prepared as a technical attachment to the EA.

Agency Consultation

Washington State Historic Preservation Officer / Advisory Council for Historic Preservation.

One letter notifying the Washington State Historic Preservation Officer (SHPO) was sent on January 14, 2003 to solicit comments on the Camp Muir Rehabilitation Schematic Design Facility Report (Portico 2002). Additional consultation with the SHPO has been ongoing. A letter was sent to the Washington SHPO on July 10, 2012 requesting formal concurrence with the NPS determination of no adverse effect on historic resources resulting from the preferred alternative presented in this EA.

The documents related to the National Historic Preservation Act, in accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 (36 CFR Part 800) have been completed as a separate submittal to the Washington SHPO. The park finds that the project will not alter any of the character-defining features of the Camp Muir Historic District, or disturb known archeological resources. The SHPO, in a letter dated July 26, 2012, has concurred that the project will have no adverse effect on National Register-eligible or listed historic and cultural

resources.

American Indian Consultation. Six federally recognized Native American tribes associated with the park were sent a scoping letter on November 5, 2009, notifying them of the proposed project. These tribes included the Confederated Tribes and Bands of the Yakama Nation, Cowlitz Indian Tribe, Muckleshoot Indian Tribe, Nisqually Indian Tribe, Puyallup Tribe of Indians, and Squaxin Island Tribe. In addition, the park discussed the project in their annual tribal meeting and sent the tribes a copy of the EA. The proposed project was shared with local tribes during the annual tribal meeting at the park in 2011 and 2012. One comment received via email following the annual tribal meeting in 2012 was the suggestion that history and significance of Mount Rainier to local tribes be reflected in an interpretive sign at Camp Muir. The park will consult with the tribes on Camp Muir interpretive information.

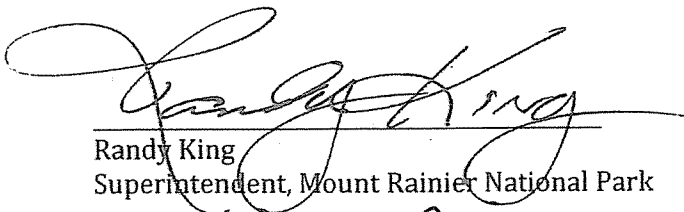
Conclusion

Based on the conservation planning and environmental impact analysis documented in the EA, with due consideration of the nature of the public comments and consultations with other agencies, and given the capability of the mitigation measures to avoid, reduce, or eliminate impacts, the NPS has determined that the selected alternative does not constitute a federal action that normally requires preparation of an EIS. Environmental impacts that could occur are limited in context and intensity, with generally adverse and beneficial impacts that range from localized to widespread, short- to long-term, and negligible to moderate. The selected alternative will not have a significant effect on the quality of the human environment or the park's cultural resources or natural resources.

There are no unmitigated adverse impacts on public safety, sites, or districts listed in, or eligible for listing in, the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, cumulative effects, or elements of precedence were identified. Implementation of the selected alternative will not violate any federal, state, or local environmental protection law.

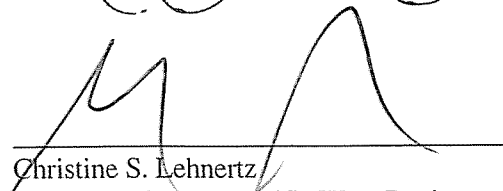
Based on the foregoing, it has been determined that an EIS will not be prepared and the selected alternative may be implemented as soon as practicable.

Recommended:


Randy King
Superintendent, Mount Rainier National Park

12/27/12
Date

Approved:


Christine S. Lehnertz
Regional Director, Pacific West Region

12/31/12
Date

Attachment A – Determination of No Impairment

Camp Muir Rehabilitation Plan Environmental Assessment Mount Rainier National Park

While Congress has given the National Park Service (NPS) management discretion to allow impacts within the park, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. This cornerstone of the Organic Act establishes the primary responsibility of the NPS to ensure that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them. This Determination of No Impairment was prepared by the NPS based solely on the professional judgment of the park manager.

The impairment of park resources and values may not be allowed by the NPS unless directly and specifically provided for by the legislation or by the proclamation establishing the park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment.

The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of these resources or values.

An impact on any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

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

An impact will be less likely to constitute impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated. An impact that may, but would not necessarily lead to impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park.

The National Park Service's Management Policies 2006 requires analysis of potential effects to determine whether or not actions would impair park resources. The park resources and values that are subject to the no-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological,

biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;

- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

The purposes of Mount Rainier National Park are provided by the enabling legislation (March 2, 1899), the Organic Act of 1916 as amended by the Redwoods Act of 1978, and the Washington Parks Wilderness Act of 1988. Mount Rainier National Park is to be managed:

- to protect and preserve its natural and cultural resources, processes, and values, while recognizing their increasing importance in the region, the nation, and the world;
- to provide opportunities for visitors to experience and understand the park environment without impairing its resources to maintain wilderness values; and
- to provide for wilderness experiences.

Based on the 1916 Organic Act and the Mount Rainier National Park GMP, topics from the EA that were evaluated for potential impairment due to implementation of the Selected Alternative include: historic structures and cultural landscape, soils and geological resources, vegetation, water quality, wildlife, Wilderness, air quality. Non-resource topics such as visitor and safety, and park operations and safety are not subject to impairment determinations.

NATURAL AND CULTURAL RESOURCE TOPICS

Historic Structures and Cultural Landscape

The Mount Rainier National Historic Landmark District (NHLD) was designated in 1997 and encompasses most of the roads, historic developed areas, and historic backcountry structures in the park. The boundaries of the NHLD form a contiguous corridor that overlies the park's road system, as well as some discontinuous backcountry features. Camp Muir is a compact developed site, located on an exposed ridge at high elevation and surrounded by wilderness, factors that create unique challenges for managing and maintaining this site. Listed in the National Register in 1991 and included in the Mount Rainier NHLD in 1997, Camp Muir has undergone several changes since the 1930s, including the installation of toilets, addition of the Client Shelter, and the construction of retaining walls.

Planned rehabilitation of Camp Muir Historic District is intended to protect, restore, and repair

the deteriorating structural components of the road. No alterations will be made to historic features that convey the historic character of the District. All work will be conducted to preserve the integrity, design characteristics, and craftsmanship of structural features. The *Secretary of the Interior's Standards for the Treatment of Historic Properties* will be met by reusing original material, repairing and replacing features in-kind, and using compatible designs on new features. Structural integrity and visual appearance of historic structures will be maintained. The project will not alter any of the character-defining features of the District. The rehabilitation of the Camp Muir Historic District will have a local long-term beneficial impact on the cultural landscape and historic structures through the removal of non-compatible structures and by stabilizing the ground plane to reduce erosion that undercuts the stability of all structural components. Approved changes will also restore historic spatial organization, enhancing views to the district and within the camp. Implementation of the selected alternative will result in "no adverse effect" to the Camp Muir Historic District and Mount Rainier NHL. The selected alternative will not result in an impairment of the cultural landscape and historic properties.

Soils and Geologic Resources

Rock walls would be placed to stabilize and define pathways. The new guided public shelter would have a larger footprint than the existing Client Shelter in part due to the increased thickness of rock veneer walls, and in order to reduce the vertical profile relative to the existing structure. The selected alternative will not result in an impairment of soils and geology because impacts due to implementation of the selected alternative will be long-term and minor to moderate due to the increased footprint and disturbance of local soils and geology.

Vegetation

The National Environmental Policy Act (NEPA) calls for examination of the impacts on the components of affected ecosystems. NPS policy is to protect the natural abundance and diversity of park native species and communities, including avoiding, minimizing or mitigating potential impacts from proposed projects. Few plants persist at the high elevation Camp Muir, except a vascular plant; also mosses and what are believed to be sensitive lichens, which are found in the area above the Butler Shelter and to the east of the Public Shelter. While impacts to vegetation are not expected to be measurable due to best management practices, an evaluation is included to maintain awareness of their existence. The design of the selected alternative will avoid sensitive lichen areas, and conservation measures will be implemented to avoid construction impacts to alpine plants, lichens and mosses, resulting in negligible to minor impacts to vegetation in the vicinity of Camp Muir, and will not result in an impairment of vegetation resources.

Water Quality

The replacement of five solar and pit toilets with four redesigned toilets, which rely on the principle of separation and then isolation, will decrease the possibility of fecal contaminated urine reaching substrates and subsurface water beneath the Muir Snowfield, which is expected to result in an overall long-term improvement in downstream water quality over the existing condition. While water quality is expected to improve during the life of the new toilets, minor to moderate impacts to water quality is expected to continue. The selected alternative will not result in an impairment of water resources because removal of existing toilets and replacement with systems that improve waste collection and disposal will result in a long-term benefit to water resources.

Wildlife

Under all alternatives, visitor use and routine administrative operations would continue to have negligible to minor long- and short-term localized effects on wildlife because these areas have existing disturbance and do not comprise major wildlife habitat or linkages. Helicopter and human activity in the area during construction will have moderate adverse impacts on wildlife that would temporarily exceed existing impacts incurred by routine activity through the addition of two helicopter flight periods per season of construction. The selected alternative will not result in an impairment of wildlife species because construction activity will be short-term and revert to routine levels following the construction period.

Wilderness

Camp Muir is a non-wilderness enclave surrounded by designated Wilderness. Although no construction activities will occur on Wilderness lands, some approved actions may have transitory effects on wilderness from construction and helicopter noise or from possible changes in the distribution of guided clients who overnight at Muir. Impacts to wilderness would range from negligible to moderate due to impacts of sound related to construction, and would be temporary, lasting three years to five. There may be a similar or slight increase in the number of flights required to remove waste from Camp Muir (up to four flights per year) during the shoulder seasons; potential long-term impacts to wilderness resources due to additional operational flights are considered negligible. Removing modular tents (semi-permanent features) from wilderness and visually intrusive structures from Camp Muir will have long-term and moderately beneficial effects on wilderness character. For these reasons, the selected alternative will not result in an impairment of Wilderness.

Air Quality

The park is designated a Class I area under the Clean Air Act of 1977. This designation maintains the highest air quality and allows only small increments of pollutants above the existing park levels. In addition, the designation requires protection of air quality-related values important to the overall park visitor experience. Potential impacts to air quality related to construction are expected to be short-lived and minor to moderate, occurring periodically through the dismantling process, which is expected to last no more than a few days for each structure. Helicopter flights would contribute to emissions during four flight periods per year of construction. The selected alternative will not result in an impairment of air quality because impacts are anticipated to be very localized and short-term, and moderate due to the duration of construction.

SUMMARY

As described above, adverse effects and environmental impacts anticipated as a result of implementing the selected alternative on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or identified as significant in the park's general management plan or other relevant NPS planning documents, will not rise to levels that will constitute impairment of park values and resources.