




National Park Service
U.S. Department of the Interior

Glacier National Park
Montana

**FINDING OF NO SIGNIFICANT IMPACT
REBUILD SPERRY CHALET FOR THE NEXT 100 YEARS EA**

Recommended:



Jeff Mow

Superintendent, Glacier National Park

5/11/2018

Date

Approved:



Sue E. Masica

Regional Director, Intermountain Region, National Park Service

5/13/18

Date

INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine alternative actions and environmental impacts associated with the proposed project to rebuild the Sperry Chalet Dormitory for the next 100 years. The objectives of these actions are to: 1) restore the Sperry Chalet visitor experience (characterized by sharing family style meals at the dining hall and overnight lodging in a structure) for the next 100 years, and continue to provide a remote backcountry chalet experience surrounded by recommended wilderness in Glacier National Park (GNP); 2) preserve a National Historic Landmark (NHL) district and other associated historic properties listed in the National Register of Historic Places, including GNP Tourist Trails, that together help illustrate the story of this unique location and keep as much of the remaining historic fabric of the chalet in place as possible and, 3) minimize impacts to natural and cultural resources while restoring the Sperry Chalet experience.

The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the EA and the associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference below.

SELECTED ALTERNATIVE AND RATIONALE FOR THE DECISION

Based on the analysis presented in the EA, the NPS selected alternative A – Rebuild Chalet (the NPS preferred alternative, pages 8-10 in the EA).

Alternative A will restore the chalet dormitory, reflecting its period of significance (1914-1949) using the original walls and site, provide for some critical updates to meet current building codes and improve life safety. Repairs to the dining hall deck and roof will also be completed. The visitor experience will be very similar to what it has been for decades by using as much of the remaining historic fabric as possible. Significant historic fabric still remaining will be maintained/preserved. Improvements will ensure its use for the next 100 years barring unforeseen events and take into account changing use patterns, long-term sustainability and climate change.

The historic capacity of the chalet dormitory will be maintained at about 54 overnight guests and 11 staff members. Code upgrades will be addressed where possible such as modifying the stairs to the second floor to reduce their steepness, fire detection measures will be included and one room will be made accessible for visitors with disabilities.

Design considerations will include seismic walls to increase its ability (as much as possible) to withstand earthquakes and avalanches. Fire resistant materials will be used, balanced with the use of historically appropriate finishes. Improved design and fuels management techniques will be used to protect it from wildland and structural fire, and water storage, conservation measures and collection of rainwater will be used to increase water availability at the site.

Construction is anticipated to be accomplished in two phases. Phase I will include additional structural investigation of the masonry walls, building a roof, and constructing seismic lateral walls in the interior. If necessary, rock from the nearby original quarry (fully located within the 25 acre enclave, (excluded but surrounded by recommended wilderness) and partially within the historic district; see Figure 1) will be used to repair the remaining historic walls. Fire damage to the dining hall roof and deck will also be repaired. Phase II will begin the following summer and complete the reconstruction of the dormitory including finishing the roof, constructing interior floors, framing, finishes and any remaining exterior

work. Cost considerations, unforeseen events or other conditions, could affect the construction schedule.

Phase I construction will be accomplished by a 12-25 person crew, including a project manager, resource monitor, sanitation employee and support staff. Crews will live on-site for approximately 12 weeks. Construction activity will occur from July 1 through the end of October. Crew members will camp within the boundaries of the historic district in temporary tents on platforms near the remaining structures (shown on Figure 1) in a previously disturbed area. Meals will be prepared and provided, either in the dining room or in a hard-sided temporary structure that would be flown in. Construction materials will also be brought in by mule and flown in by helicopter sling loads. Approximately 400,000 pounds or (200 tons) of materials and equipment will be flown in and carried up by stock. Helicopters carrying crew members and others, as required, will land at the site in the designated landing zone. To reduce noise levels to wildlife, hikers in the area, backpackers camping nearby and wilderness character in the adjacent recommended wilderness, construction materials and other items such as food that don't require helicopter transport will be carried up by stock. Approximately 150-220 helicopter trips (depending on the size of the helicopter) will be required to transport construction materials. There will likely be days of 40-50 flights and other days with fewer or no flights. Approximately 35-60 pack string trips will bring the remaining construction materials and food for the crews for Phase I. A staging area for helicopter operations will be located outside the park at a site to be determined by the contractor. If a site can't be found outside the park, helicopter operations will stage out of West Glacier in the vicinity of the NPS Wastewater Treatment Plant. The helicopters will deliver materials at a designated landing zone and drop point at Sperry Chalet shown on Figure 1.

Phase II construction will require a similar size crew and support. The construction period will be from June 1 through the end of October. Approximately 200-300 helicopter flights will transport construction materials that cannot not be brought in by stock and 35-60 pack string trips will bring in the rest of the materials and food. Helicopter operations will be based in the same area as used in Phase I. Daily operation will be similar to Phase I.

Design. The National Park Service will utilize the comprehensive photo documentation of the building, as well as architectural drawings from 1913, 1940, 1996, 2011, and the 2017 stabilization drawings to complete the rebuild. Much of this information was condensed into the *Sperry Chalet Dormitory Historic Systems and Finishes* (2017, see Appendix 2 in the EA for a description of these features). The building's shell provides the outline for interior and exterior reconstruction and preservation treatments.

Visitor Access: During both construction seasons, the Sperry Backcountry Campground and trails from Lake McDonald and Gunsight will remain open to visitors. The Sperry toilet facility will remain open to visitor use. The horse concession may continue to offer day rides to the chalet complex subject to restrictions from construction activity with the associated increased stock use on the trail and frequent helicopter activity. For safety reasons, all Sperry area visitor use may be subject to temporary closures, during construction. Signs will be placed at the trailheads informing hikers of conditions, restricted areas and temporary closures. A construction viewing area for visitors will be provided.

Rationale

Alternative A was selected because it best meets the project purpose to:

- Restore the Sperry Chalet experience while minimizing impacts to natural and cultural resources
- Preserve a national historic landmark while retaining as much of the remaining historic fabric as possible.

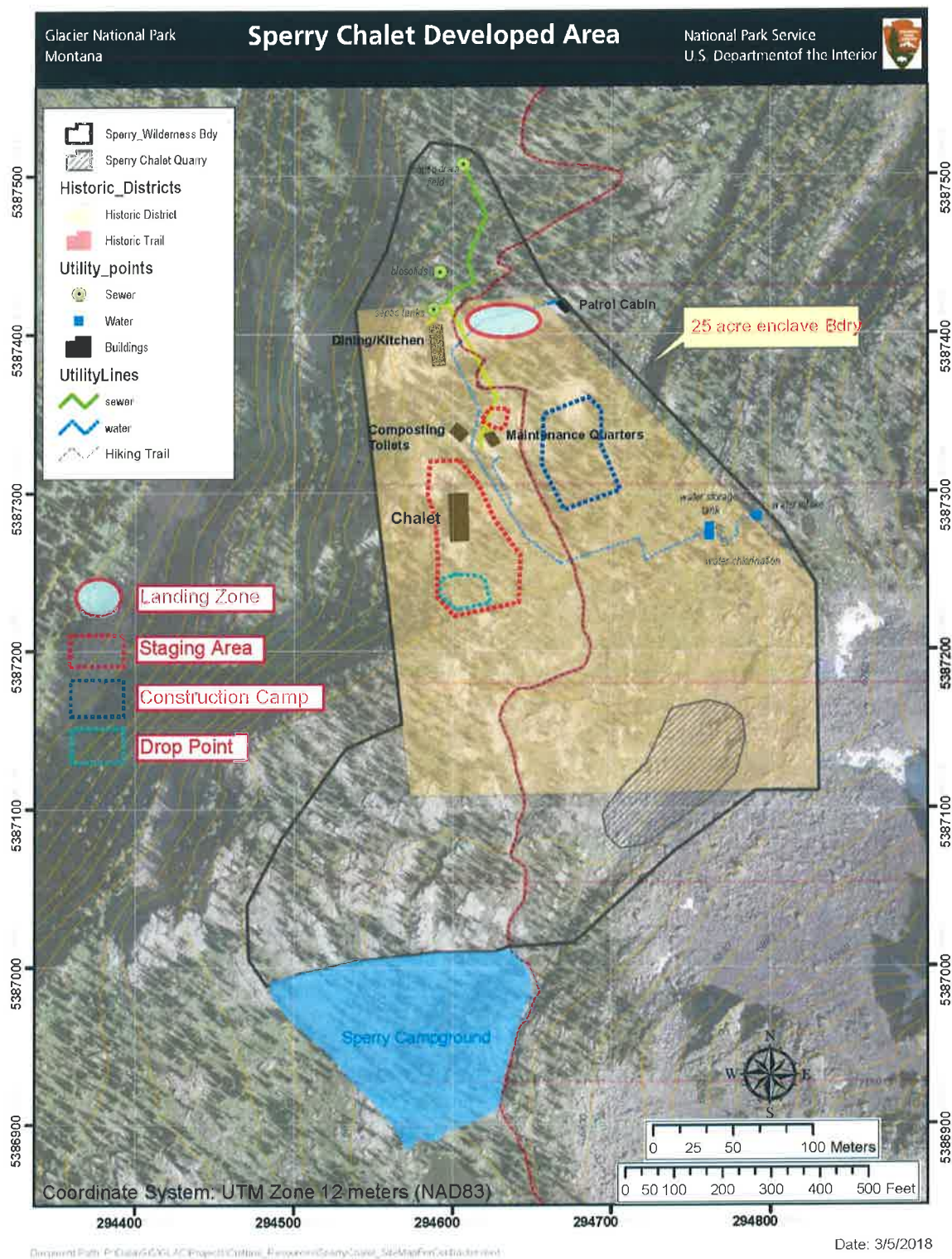


Figure 1 Selected Alternative Site Plan

MITIGATION MEASURES

The selected alternative incorporates the mitigation measures listed in Appendix A of this document.

PUBLIC INVOLVEMENT/AGENCY CONSULTATION

External, public scoping was initiated February 28, 2018, with distribution of a scoping newsletter to inform the public of the proposal to rebuild Sperry Chalet and to generate input on the preparation of this EA. The scoping newsletter was mailed to the interested public, various federal and state agencies, and other interested parties on the park's mailing list. A press release was also sent to local news organizations. Two public scoping meetings were held: the first one was on February 28, 2018, at the Flathead Valley Community College in Kalispell. A second meeting was hosted by the Glacier National Park Conservancy and held on March 13, 2018, at the Cedar Creek Lodge, in Columbia Falls.

Approximately 400 comments were received during public scoping. A diverse range of concerns, issues, and proposed alternative actions were brought forward. All substantive comments were considered in preparation of the EA. The EA was made available for public review and comment during a 20 day comment period, from April 17, 2018 through May 07, 2018. Seventy-two public comment letters were received. Comments mostly supported rebuilding the chalet dormitory and restoring the historic experience. A few comments were received that supported No Action. Substantive comments are addressed in the Errata or Appendix C.

The National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C. 300101, et seq.) requires all federal agencies to consider effects from any federal action on historic properties eligible for or listed in the National Register of Historic Places, prior to initiating such actions. Sperry Chalet Complex is listed in the register and is also a National Historic Landmark. On January 31, 2018, Glacier National Park initiated consultation on the project with the Montana SHPO in accordance with 36 CFR 800. Subsequent in-person meetings occurred on March 13-14, 2018. A follow up letter was sent on March 27, 2018 in which character defining features were identified for the Sperry Chalet Dormitory. The park has issued a finding of historic properties affected, no adverse effect for the project provided that stabilization and preservation treatments follow these standards. The SHPO concurred with this finding on April 17, 2018, (Appendix F). Continued discussions with the SHPO and other interested parties on the design and construction drawings will be undertaken as they become available. Designs will not depart from character defining features.

Glacier National Park notified the Confederated Salish and Kootenai Tribes (CSKT) Tribal Historic Preservation Office (THPO) and Council members, and the Blackfeet THPO and Blackfeet Tribal Business Council on February 22, 2018 in accordance with 36 CFR 800. They were contacted again on March 2, 2018. Neither the Blackfeet Tribe nor the CSKT raised concerns about the proposed action. On April 3, 2018 Blackfeet Nation Tribal Historic Preservation Officer, John Murray provided concurrence of *Historic Properties Affected, No Adverse Effect* by phone. Mr. Murray further recommended reuse of the original dormitory walls. In a meeting on April 9, 2018, the Confederated Salish and Kootenai Tribal Historic Preservation Officer, Kyle Felsman indicated no concerns with the project. The Confederated Salish and Kootenai THPO provided comments on May 2, 2018, via email, citing no concerns with the project.

In accordance with Section 7 of the Endangered Species Act (ESA), Glacier National Park notified the US Fish and Wildlife Service (USFWS) of the project during scoping on March 2, 2018. A biological assessment was prepared and submitted to the USFWS on April 17, 2018. Based on the analysis, the NPS has determined that the proposed restoration of the Sperry Chalet experience will have *NO Effect* on Spalding's catchfly, water howellia, bull trout, and meltwater lednian and western glacier stoneflies, and is *NOT Likely to Jeopardize* whitebark pine, and North American wolverine. The proposed action *May*

Affect, but is NOT Likely to Adversely Affect Canada lynx, and May Affect, AND is Likely to Adversely Affect grizzly bear. Destruction or adverse modification of critical habitat for both the Canada lynx and grizzly bear is not likely. The USFWS provided a Biological Opinion and Incidental Take Statement which included required additional terms and conditions and on 5/11/18.

FINDING OF NO SIGNIFICANT IMPACT

CEQ regulations at 40 CFR Section 1508.27 identify ten criteria for determining whether the selected alternative will have a significant effect on the human environment. The NPS reviewed each of these criteria given the environmental impacts described in the EA and determined there will be no significant direct, indirect, or cumulative impacts under any of the criteria.

As described in the EA, the selected alternative has the potential for long term beneficial and short term adverse impacts on visitor experience, historic structures, wildlife, federally listed, proposed and candidate species (grizzly bears, Canada Lynx, wolverine and whitebark pine), state listed species of concern, recommended wilderness vegetation/soils, and natural soundscapes. These impacts will be temporary during active construction and will be minimized through the mitigation measures described in the EA and Appendix A.

Specifically impacts include:

- Within the chalet area, approximately one acre of vegetation and soils will be temporarily disturbed from construction, staging, and general occupation of the site. Impacts will include soil compaction, trampling, root exposure, erosion, and alteration of the habitats. Impacted habitats will be rehabilitated to the extent possible, which will aid vegetative recovery and minimize the longevity of habitat degradation.
- Visitors will experience short-term adverse impacts with long-term beneficial impacts due to potential restrictions from accessing the site during construction, and ultimately restoration of the Sperry Chalet experience. Visitors will experience short term beneficial impacts from provision of a viewing area to watch the construction.
- Visitor experience, natural soundscapes, and recommended wilderness will be temporarily adversely affected by construction activity and associated flights because the sights and sounds of construction activity associated with the project will likely be seen and heard from the surrounding wilderness at levels much higher than existing natural ambient sound levels. However these impacts will be short term and somewhat transient as flights will not occur every day and work on the chalet that involves noise will be limited to between 7:00 am – 7:00 pm allowing for daily quiet hours.
- Long-term benefits to visitor experience and recommended wilderness will result from the restoration of the Sperry Chalet experience, which is integral to the “other features of value” quality of wilderness.
- Wildlife species including the federally listed grizzly bear and Canada Lynx and state listed species will be temporarily adversely affected by the construction activity and flights, resulting in displacement. However, all impacts will be at the species’ individual or local level, and are not anticipated to be experienced at the population or regional level. Therefore impacts will be adverse but not significant because there will not be a change in species abundance, distribution, or population effects. There will be no long-term meaningful change to wildlife resources within the project area.
- Overall the impacts to wildlife, wildlife habitats, vegetation, and soils are anticipated to be small and very localized because the majority of the impacted habitats are of lower quality; they are

previously disturbed and within or adjacent to existing development, and are areas of high visitor use (compared to the adjacent area).

There will be no significant impacts on natural, cultural or scientific resources or public health, public safety, or unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the NPS selected alternative will not violate any federal, state, or local environmental protection laws.

CONCLUSION

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2) (c) of NEPA.

Based on the foregoing, it has been determined that an EIS is not required for this project and, thus, will not be prepared.

APPENDIX A: MITIGATION MEASURES

The following mitigation measures will be part of project implementation. These measures have been identified to minimize the degree and/or extent of adverse effects. The level of impacts has been determined assuming these mitigation measures will be implemented.

Historic Structures and Cultural Landscapes

- Preserve the *character defining features* of the Sperry Chalet Dormitory (EA Appendix 2).
- Work with the National Weather Service, United States Geological Survey and others to forecast and monitor avalanche events.
- Design will include measures to reduce fire hazard from both internal and external sources.
- Historic American Buildings Survey (HABS) documentation of the remaining historic fabric (walls) will be conducted.
- During any ground disturbing activity to construct temporary trails in the historic district, work will cease in the immediate area of discovered archeological artifacts, and the find will be reported to the site manager.
- Measures will be taken to avoid working in the portion of the quarry/talus slope where there is evidence of historic stone working.
- The park's trail crew and vegetation specialist will address trail damage to the South Circle Trail segment (from Lake McDonald Lodge to Sperry) as a result of the higher than usual stock operation to haul construction and other materials. Re-grading, ground-sculpting and revegetation of the trail will be done as necessary.
- Other buildings at the site will be protected from inadvertent damage by the construction project. Any damage that occurs will be repaired and/or replaced in-kind by the contractor.
- Temporary fencing will be installed to keep visitors out of the active construction zone for their protection.

Wildlife, Habitat, and Threatened Wildlife Species

- Storage requirements for food, garbage, and other attractants will be strictly enforced during the project. Food and garbage will be loaded or unloaded immediately from stock and helicopters and stored appropriately.
- Project crews will be trained on attractant storage regulations and appropriate behavior in the presence of wildlife. The handbook "*Bear Safety, Site Sanitation and Other Requirements While Working in Glacier National Park: a Handbook for Construction Contractors*" will be provided to all contractors and work crews.
- Park staff (e.g. wildlife technicians and law enforcement rangers) will monitor wildlife, storage of food and attractants, construction staging area and crew sleeping areas during the project.
- Fluid from equipment and tools can be a wildlife attractant. Tools and equipment will be inspected for fluid leaks prior to use. Leaking tools and equipment will not be permitted to be used. Any equipment that develops leaks will be repaired immediately or removed from the park. Absorbent materials manufactured specifically for the containment and clean-up of hazardous materials will be kept onsite in case a spill should occur.
- Hand-held tools, gloves and sweaty clothing can be a wildlife attractant from the salts. Equipment and clothing will be properly stored to prevent access by wildlife.
- Helicopter flights beginning in September will be restricted, as much as possible, to early morning hours before 10:00 am to avoid interfering with a major migration route for approximately 3,000 raptors (hawks, falcons, eagles, and accipiters). The migration route will be

monitored by GNP wildlife staff and volunteers at the Mt. Brown Hawk Watch and by GNP wildlife technicians at the Sperry Chalet area. The timing of flights will be adjusted to minimize impacts on birds and improve safety for helicopter trips.

- Use of the existing toilet facility will be required at all times and strictly enforced to prevent vegetation damage from human waste and urine which is an attractant to wildlife.
- Bald and golden eagle nest sites within the flight path will be identified and buffered by at least ¼ mile for bald eagles and ½ mile for golden eagles to prevent disturbance during nesting and rearing season. These buffers will only be feasible within the flight path and not in areas adjacent to the project area.
- A wildlife log will be maintained on site by onsite monitors (NPS wildlife biologists and law enforcement rangers) to document all wildlife activity in the area during the project.

Natural Soundscapes and Air Quality

- To reduce the duration of helicopter noise and impacts to visitors, wildlife and wilderness character, the smallest (lightest) helicopter needed for the task will be chosen where possible. For tasks requiring a heavy lift helicopter, an appropriate model will be used, pending availability, to efficiently carry as much heavy material as possible and reduce the number of trips needed to fly in construction material. More efficient, lower noise models will be preferred (see EA Table 1).
- To reduce noise impacts on wilderness and other backcountry sites, the transport helicopter will fly over roads, at the maximum safe altitude possible while remaining below the surrounding ridge line in the valley where it is flying. Where possible, a minimum 2,000 foot altitude will be maintained per [FAA Advisory Circular 91-36D Visual Flight Rules \(VFR\) Flight Near Noise-Sensitive Areas](#).
- Power equipment including generators, saws and other tools, will be used within the walls of the chalet dormitory (as much as possible) to reduce noise levels. More efficient, lower noise models will be preferred (see EA, Appendix 3; NIOSH 2006 and NPS 2010). Nail guns will be used rather than hammers as much as possible to reduce the amount and intensity of impact from noise. Where possible, generators that do not exceed 60 dBA, at 50 feet, will be chosen (36 CFR 2.12; see EA, Appendix 4).
- Construction work that generates noise will be limited to the hours of 7:00 am - 7:00 pm, to reduce disturbance to backpackers in the nearby campground.

Vegetation and Soils

- Construction personnel and all others will be required to stay on established trails in the historic district. New trails will be developed as needed to new locations, such as the historic quarry and the crew's tent platforms to avoid creation of social trails. These trails will be rehabilitated at the end of the project.
- Construction staging, crew camping area and new trails will be delineated to avoid expansion of the sites.
- After construction for the entire project is complete, rehabilitation efforts will follow to revegetate areas within the developed area that were denuded or damaged by the project.
- After construction, compaction and further erosion will be mitigated by
 - Aerating disturbed ground.
 - Replanting/reseeding with native vegetation, and performing non-native invasive plant control.

- Applying soil amendments, mulches, organic matter and other measures as appropriate to facilitate revegetation.
- After construction is complete, the trails used by stock will be repaired and restored.
- Native species from genetic stock originating in the park will be used for revegetation seeding and planting efforts. Plant species density, abundance, and diversity will be rehabilitated as nearly as possible to prior conditions for non-woody species.
- Riprap, gravel, and topsoil sources, if needed, will only be obtained from NPS approved sources that are clean and free of noxious weed species.
- Temporary tent platforms for housing construction crew will be required to reduce trampling of vegetation and compaction of soils.
- Rare plant surveys will be conducted prior to occupation including staging and camping areas within the 25 acre enclave. If species are found, they will be flagged and avoided. If absolutely necessary, plants will be salvaged and re-planted in undisturbed areas.

Archaeological and Ethnographic Resources

- Tribes hold a body of knowledge that may result in the identification of ethnographic resources in the area in the future. While no ethnographic resources have been identified to date, if ethnographic resources are identified later, consultation will occur in accordance with federal legislation and regulations and NPS policy.
- Should construction expose cultural resources, work will be stopped in the area of discovery and the park will consult with the State Historic Preservation Officer and the Tribal Historic Preservation Officers in accordance with 36 CFR 800.13, Post Review Discoveries. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) will be followed.
- All contractors and subcontractors will be informed of the penalties for collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties.
- All excavation will be monitored by an archeologist or para-archeologist.

Water Resources

- Temporary barriers (silt fences, coir logs) will be installed to prevent any exposed soil from eroding.
- Fuel and tools will be stored at least 100 feet from any water to prevent contamination in the event of a spill.
- An emergency fuel spill kit will be kept on-site during staging and construction.

APPENDIX B: NON-IMPAIRMENT DETERMINATION

The NPS Organic Act of 1916 directs the NPS to "conserve the scenery, natural, and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 USC 100101). NPS Management Policies 2006 Section 1.4.5 defines impairment as when an action's impacts "harm the integrity of park resources or values, including opportunities that otherwise will be present for the enjoyment of those resources or values."

"An impact on any park resources or values may... 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 document as being of significance" (NPS 2002, Section 1.4.5)

Fundamental resources and values for Glacier National Park are discussed in the 1999 General Management Plan and 2016 Foundation Plan. Resources that were carried forward for detailed analysis in the EA and are considered necessary to fulfill specific purposes identified in the establishing legislation; are key to the natural or cultural integrity of the park; and/or identified as a goal in relevant NPS planning documents include: wildlife, ESA Listed, Proposed and Candidate Species, State Listed Species of Concern, Vegetation and Soils, Recommended Wilderness, Natural Soundscapes and Historic Structures. Accordingly, a non-impairment determination is made for each of these resources. A non-impairment determination is not necessary for visitor use and experience because this impact topic is not generally considered a park resource or values subject to the no-impairment standard.

Wildlife— Wildlife in the area will be adversely affected by the elevated levels of human activity and noise from construction and the large number of helicopter flights and pack strings, along with the disturbance of an estimated one acre of subalpine habitat. Migrating raptors, including golden eagles in September, may be temporarily displaced due to noise and perceived threats associated with helicopters. Limiting helicopter flights to early mornings will avoid or minimize disturbance to raptors since raptors tend to be airborne later in the day when thermal conditions are most conducive to flight. However, the high noise levels will be temporary, lasting no more than one day at a time, with days between high flight days that either have no flights or far fewer occurring. Strictly enforced requirements for the storage of attractants (food and construction materials) will prevent wildlife from becoming food conditioned and/or attracted to the project site. Overall, the impacts to wildlife habitat are anticipated to be small and very localized as the majority of the impacted habitats are of lower quality because they are already disturbed and within or adjacent to existing development and areas of high visitor use levels (compared to the adjacent area). Impacted habitats will also be rehabilitated when the project is complete, which will aid vegetative recovery and minimize the longevity of habitat degradation. All impacts will be at the species' individual or local level, and not experienced at the population level. Therefore, impacts will not result in changes to species abundance and distribution at the park or regional scale. As a result, the NPS has determined that the selected alternative will not result in impairment of wildlife.

ESA Listed, Proposed, and Candidate Species— In accordance with Section 7 of the Endangered Species Act (ESA) the NPS determined that the selected alternative will have “no effect” on Spalding’s catchfly, water howellia, bull trout, and meltwater lednian and western glacier stoneflies, and is “not likely to jeopardize” whitebark pine, and North American wolverine. The selected alternative “may affect, but is not likely to adversely affect” Canada lynx, and “may affect, and is likely to adversely affect” grizzly bear. The US Fish and Wildlife Service concurred with this determination and issued a Biological Opinion and Incidental Take Statement on 5/11/18.

The level of noise disturbance associated with the selected alternative’s construction activities for two summer seasons will be considerably elevated along the flight path, project area, and in adjacent habitats, in comparison to the existing level of noise; limiting the availability of areas free from human disturbance for the duration of the project. The large number of helicopter flights will be expected to result in displacement of grizzly bears from the immediate vicinity of the chalet as well as from habitat underneath the flight path. Construction activities lasting four to five months during both phases will be expected to result in individual bears or family groups avoiding the area. Displacement of bears is likely to be temporary, and although alternate suitable habitats are available nearby, those habitats will likely be occupied by other bears, potentially resulting in conflicts between bears. At project completion, noise and human disturbance levels will return to pre-project levels and displaced bears are anticipated to return to previously occupied habitats.

Flights will occur over areas identified as suitable lynx habitat and within the known distribution area of lynx in the park. Lynx foraging could be disturbed by some helicopter flights. Helicopters could affect lynx when they descend or approach at a low level, especially in areas lacking cover, such as alpine areas, but are not likely to affect them at higher flight elevations at 2,000 feet or above. Because flights will occur during the lynx denning period and the locations of lynx dens within the park are unknown, there is the potential to displace lynx from den sites due to persistent low-level flights within suitable lynx habitat. However, the effects of flights on denning lynx are expected to be minimal due to the short-term nature of the flight activity and the species preference for forested areas for den sites, where flights will occur at a higher altitude. Forest cover likely provides lynx and other forest interior species with visual and audio insulation from human activities such as construction and aircraft overflights.

Although little is known about the specific effects of human presence and repeated disturbance to wolverine behavior (USFWS 2011), at some unknown threshold the level of increased human disturbance will likely result in negative impacts to the quality and availability of wolverine habitats in these areas, including temporal and spatial displacement of individual wolverines. Displacement of individual wolverines from areas of high noise disturbance and human presence is not anticipated to have significant population impacts due to the large home ranges typically occupied by individual wolverines, as well as the amount of suitable habitat available in the adjacent areas.

The selected alternative will occur in areas where whitebark pine may be present. As a result, the proposed construction and associated trampling and material storage could cause damage and increase the risk of mortality to whitebark pine. Surveys will be conducted prior to construction and locations of whitebark pine will be marked and these areas avoided whenever possible. The adverse impacts to whitebark pine habitats from construction activities under the selected alternative will be negligible given the small amount of impacted habitat in relation to the habitat available within and adjacent the project area. The anticipated changes will be so small that it will not be of any measureable or perceptible consequence to whitebark pine populations or their habitats.

The selected alternative will result in adverse impacts to grizzly bears, Canada lynx, wolverine, and whitebark pine because of trampling, noise from construction and helicopter flights. However because the project is temporary and is primarily occurring within an already disturbed and developed area,

impacts will not result in impairment. Furthermore because mitigation measures described in Appendix A will minimize impacts and there will be no population level effects or changes in overall species abundance and distribution, there will be no impairment to ESA listed, proposed, and candidate species as a result of the selected alternative.

State Listed Species of Concern – The selected alternative will result in impacts to state listed species of concern that either occur within the project area or have a high likelihood of occurring. These species include Gray-crowned rosy finch, Clark's Nutcracker, white-tailed ptarmigan, alpine glacier poppy, pale corydalis, and northern beechfern. Noise disturbance associated with the large number of helicopter flights necessary for material transportation, construction activities, and human presence will temporarily disturb individuals within the project area and adjacent habitats. Construction activities and the associated disturbance will occur during the nesting period for all three bird species. Nesting birds may be displaced from the project area due to project associated noise disturbance. There will continue to be ample natural nesting and foraging habitats in adjacent areas to support displaced individuals, although those areas may already be occupied by other members of the same species, thereby increasing intra-species competition for available resources and habitats. Noise and human disturbance levels will return to pre-project levels and temporarily displaced wildlife are anticipated to return to previously occupied habitats following completion.

Habitat alterations associated with construction and material storage will result in temporary displacement of state listed species of concern in approximately less than one acre. Mitigation measures, such as the designation of areas where human activity and material storage will be allowed, will minimize the impacts to available habitats. Surveys for seeps, springs, as well as alpine glacier poppy, pale corydalis, northern beechfern, whitebark pine and other species of concern will be conducted prior to the start of construction activities to minimize or avoid damage to individuals or habitats. Areas where species are found to be present will be marked and avoided to the greatest extent possible. There will continue to be ample natural nesting, foraging habitats, and comparable habitat types in adjacent areas to support displaced individuals and vegetation populations. The selected alternative will not result in impairment of state listed species of concern and their habitats because the majority of the impacted habitats are of lower quality due to adjacent existing development and visitor use levels (compared to those in adjacent areas). In addition, vegetative species of concern will be avoided where possible and impacted habitats will be rehabilitated where feasible, minimizing the long-term effect of habitat degradation.

Recommended Wilderness – The selected alternative will have no effect on *untrammelled* and *natural* wilderness character qualities because the Sperry Chalet is an iconic national historic landmark and historic district, located in a 25-acre enclave, surrounded by lands recommended for wilderness designation. Use of pack and saddle stock represents a traditional wilderness skill that does not involve the use of mechanical equipment and therefore keeps the recommended wilderness from becoming more developed. The selected alternative will have positive effects on *other features of value* because restoration of Sperry Chalet will preserve a structure and visitor experience that is integral to the surrounding recommended wilderness. There will be no effect to the *untrammelled* wilderness quality because no manipulation of biological communities will occur in recommended wilderness. Noise from the equipment and construction activity will travel beyond the enclave and be audible within recommended wilderness, which will affect the *opportunity for solitude* within wilderness. Additionally, helicopters flying to the enclave (i.e. project site) will fly over recommended wilderness, which will also adversely affect the *opportunity for solitude* wilderness character. Effects from helicopters will be adverse on the *undeveloped, natural and solitude* wilderness character and adversely impact the opportunity for visitors to hear the natural sounds on trails and in the nearby campgrounds in

recommended wilderness. Construction noise will have a negative effect on *solitude or primitive and unconfined type of recreation* because the sights and sounds of construction activity associated with the project will adversely affect this quality. However, these impacts will be short term (two seasons) and somewhat transient as flights will not occur every day and work generating noise on the chalet will occur between 7:00 am – 7:00 pm allowing for daily quiet hours. The impacts to *solitude* and *undeveloped* wilderness quality may be reduced in the second construction season as the work moves into the interior of the chalet. There will be no impairment of recommended wilderness because impacts will be short term, transient and the chalet is historically integral to the adjacent wilderness lands as visitors gain access to the site via designated trails that pass through wilderness and often utilize the chalet as a basecamp or layover location that supports longer trips, deeper into Glacier's recommended wilderness.

Vegetation and Soils—The selected alternative will result in the temporary disturbance of approximately one acre of vegetation and soils within the chalet developed area from construction, staging, and potentially the use of the quarry for replacement stone that may be required in the construction efforts. Disturbance will be confined as much as possible because at this elevation, vegetation growth is very slow and successful revegetation is challenging. Impacts will include soil compaction, trampling, root exposure, and erosion. Adverse impacts will not affect plant species at the population level because the disturbance will be localized to the project area and the species affected are present throughout the adjacent areas. No trees will be removed and impacted areas from construction staging will be revegetated. There will be no impairment of vegetation and soils because impacts will largely occur in areas already disturbed and/or will be revegetated and there will be no change in species abundance, distribution and no population level effects. There will also be no impairment to geological resources should rocks be collected from the quarry site for construction efforts as minimal rock harvesting is expected and the majority of the quarry site would remain intact.

Natural Soundscapes – Under the selected alternative, the ability to hear natural sound in the McDonald Creek Valley and at the Sperry Chalet site will be adversely affected by the construction activity and transportation of equipment and materials by helicopter. The helicopter flights for this project will be temporary and transient not lasting more than two seasons. However, there will be days of relative quiet between the days of heavy flying. Days when there will be 40-50 flights in one day will result in substantial noise in the McDonald Creek Valley, particularly in the area between where the flight originates and enters the park and climbs to Sperry Chalet. The routes could include over Snyder Ridge, over Lake McDonald and then up Sprague Creek and/or up the Harrison Creek drainage from the Highway 2 area. However, the high noise levels will be temporary, lasting not more than one day at a time with days between high flight days that either have no flights or far fewer occurring. There will be no impairment to natural sounds because the impacts of the selected alternative will be temporary and transitory.

Historic Structures—The selected alternative will afford the best preservation of the remaining historic fabric (masonry). The masonry features of the dormitory will be incorporated into the “new” building; thus, it will be architecturally compatible with the historic character of the area and the overall experience will be nearly identical. Louis Hill's original dormitory siting will remain intact, and visitors will be afforded an experience that retains the character defining features of the building reflected in its period of significance. Repairs to the dining hall building will not result in any measurable impacts because none of the character defining features will be changed. Construction teams and staging areas will be temporary and not impact the other historic structures and the national historic district. Utilizing teams of relatively small focused crews camped on-site approximates the historic construction of the dormitory building in 1913. Aircraft blade loading, angular velocity, downwash, etc. will be considered

when working near historic properties. Historic surface debris or compromised mortar could become airborne from downwash. The selected alternative will adhere to the Secretary of the Interior's Standards for the Treatment of Historic Properties and NPS policy standards for treatment, resulting in limited or no impacts to the dormitory's character defining features. It will also benefit the dining hall, national historic landmark and historic district boundary as well as the South Circle Trail segment through preservation of the dormitory site and continue the historic use of the area. Therefore, the selected alternative will not lead to an impairment of historic structures and districts. The State Historic Preservation Officer concurred with the park's determination of *historic properties effected, no adverse effect* on April 17, 2018.

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of the selected alternative. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the EA, comments provided by the public and others, and the professional judgement of the decision maker guided by the direction of NPS Management Policies 2006.

APPENDIX C: ERRATA SHEETS—(TEXT CHANGES AND RESPONSES TO COMMENTS)

The NPS defines substantive comments as those that 1) question the accuracy of the information in the EA, 2) question the adequacy of the environmental analysis, 3) present reasonable alternatives that were not presented in the EA, or 4) cause changes or revisions in the proposal.

Seventy two letters were received during public review of the EA. There were seven letters that contained substantive comments or otherwise warranted a response and/or a text change in the EA. Those comments are addressed below. Fifty eight letters were in support of the Preferred Alternative, and one letter supported Alternative B. Six letters supported No Action-Alternative C. No comments warranted development of an additional alternative or reconsideration of alternatives that were considered but dismissed. Therefore, the alternatives remain as described in the EA, and no changes were made in the assessment of environmental consequences that changed the level of impacts.

Text Changes: Strikeout shows what has been removed, bold text indicates new text added.

Page 4, paragraph 6 under Fisher (*Pekania pennant*)

Fishers have not recently been detected in Glacier National Park, previous reports are difficult to confirm, and the species may not be present (**Waller 2018**).

Page 15, under Wildlife, Habitat, and Threatened Wildlife Species

- Helicopter flights beginning in September would be restricted, as much as possible, to early morning hours before 10:00am to avoid interfering with a major migration route for approximately **3,000** ~~2,000~~ raptors (hawks, falcons, eagles, and accipiters). The migration route would be monitored **by GNP wildlife staff and volunteers at the Mt. Brown Hawk Watch and by GNP wildlife technicians at the Sperry Chalet area.** ~~And The~~ timing of flights would be adjusted to minimize impacts on birds and improve safety for helicopter trips.

Page 8, paragraph 1, under Alternative A added to first paragraph:

Repairs to the dining hall deck and roof will also be completed.

Page 8, paragraph 2, under Alternative A:

Design considerations would include seismic walls to increase its ability (as much as possible) to withstand earthquakes and ~~late season~~ avalanches.

Page 8, paragraph 4, under Alternative A:

Damage from the fire to the dining hall roof and deck will also be repaired.

Page 8, paragraph 5 under Alternative A:

A viewing area would be identified for visitors who are interested in watching the construction effort. Visitors would be restricted to certain areas within the enclave for safety reasons and to prevent vegetation trampling.

Page 9, paragraph 1 under Alternative A:

The helicopters will deliver materials at a designated landing zone **and drop point** at Sperry Chalet shown on Figure 3.

Page 16, 4th bullet under Natural Soundscapes and Air Quality

- Construction work **that generates noise** would be limited to the hours of 7:00 am – 7:00 pm, to reduce disturbance to backpackers in the nearby campground.

Page 16, 3rd bullet from top of page under Wildlife, Habitat and Threatened Wildlife Species

- A wildlife log will be maintained on site **by onsite monitors (NPS wildlife biologists and law enforcement rangers)** to document all wildlife activity in the area during the project.

Page 19, paragraph 1 under Wildlife, Affected Environment:

In the area surrounding Sperry Chalet, mountain goats are a common large mammal. Mountain goats have become habituated to visitor activity at the chalet and often wander among the guests and facilities. Mountain goats become habituated because they are attracted to salt and predator-free zones created by human presence. **Unhabituated goats gather in large groups, exhibit a great deal of vigilance watching for predators, normally occupy rocky ledges for safety and limit their use of meadows to areas within close proximity to these ledges (Sarmiento, 2017).** Habituated ~~but habituated~~ goats demonstrate different behavior. **Habituated goats travel alone or in much smaller groups, spend more time in meadows at distances much farther away from escape terrain, and are not as vigilant as unhabituated goats. Habituated goats have altered their techniques for obtaining minerals, tending to stay in close proximity to humans to obtain minerals from unnatural sources (Sweaty handles, backpacks, antifreeze, and urine deposits) instead of traveling to known natural mineral licks away from human activity.** ~~in habitat use and herding. Habituated goats tend to prefer the meadows near popular hiking trails.~~

Page 19, paragraph 4 under Wildlife Affected Environment:

Other bird species inhabiting the project area and adjacent habitats include but are not limited to ravens, hermit thrushes, golden-crowned kinglets, pine siskins, fox sparrows, Oregon juncos, **dusky blue** grouse, and possibly **white-tailed** ptarmigan.

Page 19, paragraph 4 under Wildlife Affected Environment:

The Sperry Chalet and nearby the Mt. Brown area provides a major migration corridor for a variety of migratory bird species, including raptors and golden eagles. **A significant number of golden eagles have been recorded migrating through this area and average of 1,973 observations recorded during fall counts from 1994-1996 (Yates et. al 2001).** This area is an advantageous route for migrating eagles, as

well as other raptors, due to the complex topography, mountain winds, thermals, orographic deflection, prevailing winds, and their resulting interactions (Yates et. al 2001).

Page 20, following paragraph 4 under Alternative A:

Mountain goats, which are common in the Sperry Chalet Complex and the surrounding area, may be temporarily displaced due to noise and perceived threats associated with helicopters. Mountain goats in Alberta have been documented exhibiting escape behavior (retreating to rocky cliff habitats), moving greater than 100 meters, and becoming alert for greater than 10 minutes for the majority of flights that travel within 500 meters of an individual (Cote 2010). Many of the mountain goats within the chalet area are habituated to human presence and have been previously exposed to helicopter flights through previous administrative work and active, private air tours. As a result, it is anticipated that the reaction to repeated helicopter use in the area will be less than those described in Cote's work due to existing exposure to the auditory disturbance associated with helicopters and human presence. These are temporary impacts as mountain goats are anticipated to return to previously occupied habitats once helicopters have vacated the project area. Impacts from helicopter disturbance to mountain goats would be at the individual level and would not have long-term impacts at the population level.

Page 35, paragraph 2 under Vegetation/Soils. Affected Environment:

The Sperry Chalet trail corridor covers approximately six miles from Lake McDonald Lodge to the chalet site. The steep and mostly wooded trail rises approximately 3,300 feet in elevation as it passes through western larch, cedar, and hemlock forests and into a spruce-fir forest type as it gains elevation. The area around Sperry Chalet has a variety of subalpine vegetation community types including whitebark pine, subalpine fir/Engelmann spruce/hellebore forest, hellebore/groundsel/sedge.....

Page 35, paragraph 2 under Vegetation/Soils, Affected Environment:

The trail corridor soils are composed of silty clay loam glacial forest soils at lower elevations, transitioning to deep colluvial forest soils, and finally rock outcrops and shallow soils at higher elevations. Silty clay loam glacial forest soils are well-drained soils with silt loam or loam surface layers high in volcanic ash over silty clay loam glacial drift subsoils (Dutton et. al 2001). These soils often support conifer forest vegetation types including the western larch, cedar, hemlock forest type that is seen at the lower elevations of the Sperry trail. Colluvial forest soils are deep well-drained soils with loam or silt loam surface layers high in volcanic ash and very gravelly to extremely gravelly loam or sandy loam subsoils (Dutton et. al 2001). These soils often support conifer forest and seral vegetation types including the spruce-fir forest with a shrub, forb, and/or grass understory that is seen along the trail. Rock outcrops and shallow soils are a complex of rock outcrop and shallow, well-drained soils with very to extremely gravelly loam or sandy loam textures throughout (Dutton et, al 2001). These soils support scattered, mostly alpine forbs, grasses, and shrubs as is seen within the Sperry Chalet enclave.

Page 35, first paragraph under Vegetation/Soils Impact Analysis, Alternative A:

About one acre of soils in the six miles of trail to the chalet would be further impacted by the increased pack string activity. These soils are already impacted and the trail was built and has been maintained for stock use. However, soils would sustain additional compaction and loosening from higher numbers of stock walking on the edge of the trails and increased manure.

Page 36, first paragraph under Vegetation/Soils Impact Analysis, Alternative B:

About one acre of soils in the six miles of trail to the chalet would be further impacted by the increased pack string activity. These soils are already impacted and the trail was built and has been maintained for stock use. However, soils would sustain additional compaction and loosening from the higher numbers of stock walking on the edge of the trails, and increased manure.

Page 38, Summary section, end of the paragraph:

The impacts of Alternative C would be less than those anticipated under Alternatives A and B due to helicopter flights only occurring over the course of one season.

Page 48 References added:

Cote, S.D. 2010. Mountain goat responses to helicopter disturbance. *Wildlife Society Bulletin*. 24(4): 681-685.

Dutton, B.L., J. Hadlock, M. Arthur, D. Marrett, A. Goldin, and A. Zhu. 2001. Soils of Glacier National Park. Land & Water Consulting, Inc. Missoula, MT.

Page 50, References added:

Sarmiento, W. M., & Berger, J. 2017. Human visitation limits the utility of protected areas as ecological baselines. *Biological Conservation* 212: 316–326.

Waller, J.S. 2018. Status of fishers in Glacier National Park, Montana. *Northwestern Naturalist*. 99(1):1-8.

Yates, R.E., B.R. McClelland, P.T. McClelland, C.H. Key, and R.E. Bennetts. 2001. The influence of weather on golden eagle migration in northwestern Montana. *The Journal of Raptor Research*. 35(2):81-90.

NPS Responses

1. **Concern Statement:** The EA does not fully describe NPS's responsibilities under the National Historic Preservation Act.

Response: *Incorporation by reference of the National Historic Preservation Act and the federal agency responsibility is provided on Page 46 of the document. The alternatives presented provide a range of potential uses of the area as well as feasible actions that would require the least amount of change to the property. The Secretary of the Interior's Standards for the Treatment of Historic Properties (2017) are advisory. The park uses this document in the development of adaptive treatments for historic properties in order to gain resilience to natural hazards. Life safety considerations are also paramount for historic properties where visitors stay as overnight guests.*

2. **Concern Statement:** NPS should consider impacts of the increased number of pack strings within recommended wilderness. Using more helicopter flights would reduce impacts of pack strings on the trails.

Response: Use of pack and saddle stock represents a traditional wilderness skill as noted on page 34 of the EA. However a text change has been made to better address the impacts of pack strings on soils and vegetation, for pages 35 and 36. The NPS has weighed the impacts of flights against the impacts of other means of accomplishing the project, such as transporting project materials with pack strings and found that the identified number of pack trips is necessary to achieve a balance between impacts from pack strings and impacts from helicopter flights.

3. **Concern Statement:** Overflights of wilderness, and landings outside of wilderness or within wilderness exclusion enclaves such as that surrounding Sperry, are not prohibited by the Wilderness Act. Soundscape impacts from activities outside of or above wilderness also have been excluded from agency consideration by acts designating wilderness since passage of the Endangered American Wilderness Act of 1978. Congress stated its intent in House Report 95-540 on page 5 completely rejecting the "sights and sounds" doctrine, under which agencies considered the impacts of activities outside of wilderness on wilderness soundscape, and by stating on page 7 "As a rule, there should be no altitude limit on aircraft overflight in wilderness areas."

Response: Flying helicopters over a wilderness area is not itself a Wilderness Act, Section 4(c) prohibited use, however helicopter overflights clearly have the potential to impact wilderness character and the NPS is obligated to consider these impacts in fulfilling its broad mandate to preserve wilderness character. The NPS does not have statutory authority to manage airspace over Glacier National Park, as that authority rests with the Federal Aviation Administration. However the NPS does have control over park operations including helicopter flights and should still consider the impacts of those actions on wilderness character. Further, although the Wilderness Act by its terms only applies to landing of aircraft, courts in multiple cases clearly understood that the greatest impact to wilderness character isn't the actual landing of the flight, but the noise and visual effects of the overflight. See *Wolf Recovery Found. v. U.S. Forest Serv.*, 692 F. Supp. 2d 1264, 1268 (D. Idaho 2010); *Wilderness Watch v. Iwamoto*, 853 F. Supp. 2d 1063, 1076 (W.D. Wash. 2012).

4. **Concern Statement:** By limiting the number of flights over the recommended wilderness area in Glacier NP in route to Sperry Chalet, Glacier NP may be defying the intent of Congress in legal provisions found in Public Law (P.L.) 113-291, 16 USC 539r(b). Congress has identified in P.L. 113-291 that wilderness land management agencies should not create "buffer zones" or a protective perimeter around designated wilderness areas and should not consider impacts to wilderness that originate from outside the wilderness area (e.g., noise impacts, including those from flights, view-scape/scenic resources). This statutory authority has not yet been applied to Glacier NP as the wilderness areas are "recommended" and not "designated" status; however, this law does apply to designated wilderness in Washington, Oregon, Wyoming, Alaska, and parts of Montana and the intent of Congress is that it will apply to Glacier NP should Congress formally designate Glacier NP's recommended wilderness area.

Response: We agree that Congress would likely prohibit buffer zones in Glacier if and when it designates wilderness, however, Congress has not yet designated wilderness in Glacier and therefore has not yet restricted NPS's consideration of impacts from outside wilderness generally. Even if we agree that the buffer zone concept applies here, which again is doubtful, NPS Management Policies 6.3.4.1 allows transition zones adjacent to wilderness to be used to help protect wilderness values and may do so unless Congress has specifically directed otherwise.

A commenter noted that in House Report 95-540, which accompanied the Endangered American Wilderness Act of 1978 Congress rejected the "sights and sounds" doctrine, which stated that lands shouldn't be included in agency recommendations for Congressional designation as wilderness if the sights and sounds of civilizations could be seen from the lands. The Sperry Chalet EA addresses potential impacts to wilderness character on lands already identified as recommended for wilderness designation through a public process, therefore, any discussion of the "sights and sounds" doctrine in House Report 95-540 is not applicable to the Sperry Chalet EA.

Furthermore, NPS Management Policies 2006, Section 6.3.1 provides that for the purposes of applying NPS wilderness stewardship policies, the term "wilderness" will include the category of recommended wilderness therefore the Sperry EA is considering potential impacts to wilderness character in accordance with the following policies:

- 1) **Management Policies 2006 (Wilderness Preservation and Management), Section 6.3.1 (General Policy)** requires that in addition to managing these areas for the preservation of physical wilderness resources, planning for the areas must ensure that the wilderness character is likewise preserved. Furthermore, the National Park Service will take no action that would diminish the wilderness eligibility of an area possessing wilderness characteristics until the legislative process of wilderness designation has been completed. Until that time, management decisions will be made in expectation of eventual wilderness designation.
 - 2) **Management Policies 2006 (Wilderness Preservation and Management), Section 6.3.4.3 (Environmental Compliance)** requires that proposals having the potential to impact wilderness resources will be evaluated in accordance with NPS procedures for implementing the National Environmental Policy Act.
 - 3) **Director's Order #41 (Wilderness Stewardship), Section 5.3 (Recommended Wilderness)** requires that lands that the Secretary recommends as suitable for designation as wilderness will be managed as if they were wilderness (see the 1974 Glacier Wilderness Recommendation).
 - 4) **Director's Order #41 (Wilderness Stewardship) Section 6.2 (Wilderness Character)** requires that each wilderness park will integrate the concept of wilderness character into park planning, management, and monitoring in order to preserve the enduring benefits and values of wilderness for future generations.
5. **Concern Statement:** The park should consider using materials such as glue-lam beams and cross-laminated timber panels to avoid harvesting large timber and serve as a demonstration for the use of mass timber products generated from locally sourced timber.
Response: This suggestion will be considered during future construction design.
6. **Concern Statement:** Air tours should be removed at the conclusion of the Sperry project.
Response: The Federal Aviation Administration (FAA) has jurisdiction over the air space over national parks, not the NPS. Scenic air tour operators are the only businesses that are able to operate in National Parks and are not considered a concession and thus not subject to NPS rules and regulations. The park does not promote or sell tickets for this activity inside the park. In 1999, Glacier completed its General Management Plan, a 20-25 year long range plan for the park, which called for eliminating scenic air tours over Glacier. In order to implement this

decision, we must work with the FAA to complete an Air Tour Management Plan (ATMP) as required by legislation passed in 2000 (National Parks Air Tour Management Act).

7. **Concern Statement:** Construction design plans were already being developed for the proposed action prior to the beginning of the scoping process raising concern about the NPS being pre-decisional.

Response: *Per the NPS NEPA Handbook, section 1.4B, “developing and putting forth a proposed action is necessary to the NEPA process and is not pre-decisional. However, agencies may not take an action that is the subject of a NEPA review or that would limit the choice of alternatives until the NEPA process is complete.” Consistent with this direction, the designs developed during scoping were at a conceptual level of detail and not construction-level plans. The conceptual designs informed the range of alternatives and impact analyses evaluated in the EA. A construction contract for the selected alternative will not be awarded until after the NEPA process is complete with a signed decision document.*

8. **Concern Statement:** The news releases and media coverage ensured a disproportionate support for the proposed action.

Response: *The NPS distributes news releases to a variety of media outlets which go out to the general public, thereby providing the public and interested parties equal notification of proposed actions and an equal opportunity to provide comment and input. However, the NPS does not have influence on how the media presents information provided by the NPS new releases.*

9. **Concern Statement:** Research by John Waller, that was recently published, should be cited as a reference for the lack of evidence of fisher’s in the park.

Response: *See text change for page 17.*

10. **Concern Statement:** In light of the concerns expressed about the potential lack of sufficient water for use at the chalet during dry years, shouldn’t there be more analysis of this issue?

Response: *By using water conservation measures, the chalet operation has been successful in managing water use, despite recent low water years. The project will not result in an increase in capacity of the chalet operation, therefore there will not be an increased demand for water. Future park planning efforts will explore additional measures to provide water for future backcountry chalet operations, including collecting rainwater. Any changes to the water system will be explored in future plans and environmental analysis.*

11. **Concern Statement:** Why was Environmental Justice dismissed? Providing tent cabins instead of rebuilding the dormitory may provide lower cost services for lower income visitors.

Response: *Environmental justice is defined as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (EPA, <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice>, accessed 05/09/2018. None of the activities proposed in any of the alternatives apply to the concepts of environmental justice as defined above.*

The Sperry Chalet offers a full service experience that includes private overnight accommodations with full service amenities and full meal service. If tents were to be used in place of a dormitory, costs to the concessioner would increase due to extra staffing to maintain

the spread out tents or yurts. The operating season would likely decrease, due to the amount of time required for set-up and take down of the tents/yurts at the beginning and end of each operating season. These additional costs, and a shortened operating season, would likely need to be passed on to the customer. This, combined with continuing to provide food service, (the costly part of the operation that would not change) is likely to result in a similar cost to the visitor regardless of whether a dormitory is rebuilt or a tent/yurt operation is implemented.

Furthermore, while Sperry Chalet is a full service experience, the Granite Park Chalet provides a hiker shelter with individual guest rooms, a kitchen for guests to prepare their own meals and a shared dining room. This operation provides a lower price option in a backcountry chalet for visitors.

12. **Concern Statement:** Was an ethnographic survey conducted after the 2017 fire?

Response: *A survey was not conducted because we were not required to do one at that time and we did not receive a request from the tribes. Consultation was conducted with the Blackfeet and Salish-Kootenai Tribes both during and after the fire and as part of this project. Neither of the THPOs' expressed concerns.*

13. **Concern Statement:** More explanation is needed about the importance of the Mt. Stanton - Mt. Brown migration corridor, especially for golden eagles. The following references should be cited, Yates et al. 2001 and J Raptor Research 35(2):81-90.

Response: *See text change for page 19.*

14. **Concern Statement:** Who will maintain the wildlife sighting log, noted in the mitigation section of the EA, and where will the information be stored?

Response: *See text change for page 17.*

15. **Concern Statement:** The option of replacing the dormitory with tent cabins or yurts for visitors was too summarily and unfairly dismissed. If housing construction crews in tent cabins is acceptable, why wouldn't the park consider tent cabins for guests?

Response: *Only 12 of the approximately 23 work crew will be camping in tent cabins in an already disturbed area near the work site. The 20 tent cabins required for the dismissed alternative could not all be placed within disturbed areas within the 25 acre enclave and would require a network of trails and likely a new toilet facility, to ensure that guests use the facility, at night. Furthermore, the EA stated on page 17, that this dismissed alternative did not resolve purpose and need for taking action, part of which was to restore the chalet experience. As stated on page 17, this alternative would result in greater long term adverse impacts to the area.*

16. **Concern Statement:** The wildlife section describes mountain goats as primarily habituated animals in the area, in need of management, and fails to explain how and why that is the case. It needs to provide a better description of the goat activity and behavior at the chalet area.

Response: *See text change for page 19.*

17. **Concern Statement:** The EA did not describe the level of goat use at the chalet, in the vicinity of the chalet, and along the potential helicopter flight path. There should have been a survey of

goats and other wildlife. Without that baseline information, documenting impacts from construction will be incomplete at best, maybe impossible.

Response: As stated in the EA, mountain goats are common in the chalet area. WOLF reports, Citizen Science volunteers, reports from park staff, as well the personal experience of staff biologists supports this conclusion. Intensive surveys to document goat distribution are not necessary to develop population estimates of goats as this was completed in 2010 (Belt 2012). It is not currently necessary to conduct additional surveys for other wildlife species that use the affected environment because much is known about grizzly bear use of the area and other wildlife sightings reported by visitors and park staff are documented in the park's WOLF system. This gives us a sufficient baseline of what species of animals may be in the project area throughout the year but the reporting of these sightings is dependent on sighting accuracy, sightability factors, and people actively reporting their sightings. The impacts, as described in the EA, are reflective of the common status of mountain goats in the area and a more specific population estimate or level of use would not alter the resulting impacts to mountain goats.

Belt, J.J., and P.R. Krausman. 2012. Evaluating population estimates of mountain goats based on citizen science. *Wildlife Society Bulletin* 36(2): 264–276.

18. **Concern Statement:** The EA does not include a complete listing of wildlife in the area.

Response: The species selected for analysis reflect commonly observed species in the project area, state and park species of concern, and federally listed species under the Endangered Species Act. It is impossible to document all wildlife species that may be in the project area at any given time due to the size and extent of the affected environment, the unknown variables related to the flight path, diversity of species within the park, wildlife's ability to travel long distances in short time periods, and the limited resources for species specific surveys. The impacts, written to address wildlife in general, are inclusive of impacts to all wildlife species within the affected environment. These impacts are limited to visual and auditory disturbance within the flight path and chalet area, and potential wildlife habituation and habitat disturbance within the chalet area. As described in the EA, species are anticipated to potentially experience temporary displacement due to noise disturbance but are expected to return to the previously occupied habitats once the disturbance has ceased. Impacts are anticipated to occur at the individual level and no impacts are anticipated at the population level. Additionally, species of concern or federally listed species have been called out and analyzed independent of the general wildlife analysis. As a result, we do not feel that it is necessary to include an exhaustive list of wildlife species within the affected environment in order to capture the impacts that are anticipated from the alternatives.

19. **Concern Statement:** Do white-tailed ptarmigan, a species of concern due to climate change, occur in the affected area? Under State Listed Species of Concern, page 29, it states that habitats adjacent to the project area are known to support the birds, but it's unclear if they occur in the project area.

Response: Development of the EA included a query of the Montana State Listed Species of Concern for this list of birds as well as the park's wildlife observation database. We do not have any documented sightings of white-tailed ptarmigan, gray-crowned rosy finch, or Clark's nutcracker documented within the park's wildlife observation database, although the habitats available within the project area would likely support these species. As a result, these species were carried forward for analysis and mitigation measures were included to attenuate impacts.

For Clark's nutcracker we will conduct surveys prior to construction and the location of whitebark pines will be marked and avoided whenever possible. We will be surveying the project area for seeps, and springs prior to the start of construction activities in order to minimize the damage to the habitats they provide for white-tailed ptarmigan.

20. **Concern Statement:** Given documented golden eagle declines in the park and region-wide, could loss of a chick or failure of a nest due to helicopter and/or construction activity pose a significant risk?

Response: *Currently, we do not know of any golden eagle nests in the project area or within the surrounding area. Since 2009, we have actively monitored all historic golden eagle nests in GNP and searched, and found, new ones. In 2017, we monitored 27 golden eagle territories (three new since 2016). We confirmed that nine of these territories were active with six successfully fledging one or two chicks. Mitigation measures within the EA state that bald and golden eagle nest sites within the flight path would be identified and buffered by at least ¼ mile for bald eagles and ½ mile for golden eagles to prevent disturbance during nesting and rearing season within the flight path. These buffers would not be feasible in the immediate project area. Since, there are no known golden eagle nests within the project area, we do not anticipate that the helicopter or construction activity will pose a significant risk to golden eagles.*

21. **Concern Statement:** The EA did not address the impacts of helicopter flights on mountain goats. Cote's research on helicopters and mountain goats should be referenced.

Response: *See text change, page 20.*

22. **Concern Statement:** The park should include interpretive/educational exhibits on minimizing wildlife disturbance, protecting wildlife, the role of fire and benefits of wilderness.

Response: *This will be considered both during and after the project but will likely take place off site.*

23. **Concern Statement:** The review to date remains insufficient, as a "plan B" is not evaluated if funding is lacking.

Response: *Alternative B was analyzed. We assume the commenter is referring to a back-up plan in the event that funding isn't available. Project implementation remains subject to funding, equipment availability and weather conditions. Delayed funding does not change the impact analysis. If funding is not available, the selected alternative would not be implemented.*

24. **Concern Statement:** The four "mitigation measures" for natural soundscapes do not address the short and long term loss of solitude that will occur in the recommended wilderness surrounding the Sperry Chalet complex.

Response: *The proposed mitigation measures relate directly to a reduction of sound levels in decibels, as well as the duration of noise impacts. Reducing the number of required helicopter flights reduces the duration of helicopter noise, and by extension, the loss of solitude due to audible helicopter noise. Specifically, a 20% reduction in S-64 Skycrane helicopter flights would reduce the duration of Skycrane noise by 20%.*

25. **Concern Statement:** The EA did not address the cumulative impacts of helicopter noise in the McDonald Valley when combined with existing noise from boats and vehicles on Lake McDonald

and on the GTSR. The park should take actions to reduce the decibel levels in the helicopter flight paths, thereby reducing the cumulative impacts to solitude in recommended wilderness.

Response: *This EA provides an analysis of maximum helicopter noise level (Lmax) while hovering. The key advantage of the Lmax analysis is that it allows for a comparative analysis of maximum potential noise impacts in areas likely to be affected. A disadvantage of the Lmax-based analysis is that it accounts for the maximum impact of one noise source at one point (e.g. one helicopter at the closest point of approach). The Lmax metric would not account for the time in between helicopter flights that is affected by other noise sources (e.g. boats and vehicles) but remains unaffected by helicopter noise. The cumulative noise in between helicopter flights is already represented by existing ambient sound level metrics (FAA 2016). The ambient data from the Lake McDonald Ranger Station already accounts for boat and vehicle traffic noise. During those brief periods when helicopter noise is more than 10 decibels above the existing ambient, the cumulative noise level is represented by the helicopter noise estimates in Figure 7 and Table 1 of the EA.*

26. **Concern Statement:** The No Action alternative was not used as a baseline against which other alternatives are evaluated. Instead, the alternatives are compared to the preferred alternative.

Response: *The NPS disagrees with this comment as the affected environment was used as the baseline upon which all of the impacts of the alternatives were described. This is consistent with the NPS NEPA Handbook, Section 4.4, which states: "The affected environment serves as the baseline for predicting changes to the human environment that could occur if any of the alternatives under consideration, including the no action alternative, are implemented." In addition, for each resource topic that was analyzed, the impacts of the alternatives were compared to one another to provide additional context to the reader regarding the relative magnitude of the impacts across all of the alternatives.*

27. **Concern Statement:** Park staff are encouraged to include incentive/disincentive clauses in the construction contract to encourage a contractor's efficiency and innovation.

Response: *The NPS has considered using an incentive program within the project specifications for construction of the Phase 1 Structural and Seismic Improvements. Due to the potential costs, the NPS will re-evaluate the incentives after receiving construction bids and how they relate to the project's budget.*

28. **Concern Statement:** Use this project as an opportunity to provide extra education on the value of natural sounds in national parks such as Glacier. Is there a plan to inform the public of the project and what they should expect?

Response: *This suggestion will be considered in conjunction with the establishment of a construction viewing area or the development of other project related informational materials.*

29. **Concern Statement:** Any new fire system should include transmission to park headquarters and all the Sperry buildings should have updated fire detection systems with remote transmission to headquarters. Consider mounting a web camera at the chalet for the public.

Response: *A fire detection system will be part of the design for the chalet, as noted on page 8 of the EA. However the lack of electricity and internet services prevents long distance transmission and installation of a camera.*

Appendix D Character Defining Features Letter to the SHPO



United States Department of the Interior

NATIONAL PARK SERVICE
Glacier National Park
West Glacier, Montana 59936



L76 GLAC-18-048; H30

MAR 27 2018

Dr. Mark Baumlér
State Historic Preservation Office
Montana Historical Society
P.O. Box 210202
Helena, MT 59620-1202

Dear Dr. Baumlér:

On August 31, 2017 Sperry Chalet Dormitory, part of a National Historic Landmark was consumed by fire. Subsequent efforts ensued to stabilize the structure for alpine winter conditions. Stabilization needs were met to date; however engineering has strongly recommended that more substantial stabilization be carried out for preservation. Additionally, the park has initiated an environmental assessment in support of preserving the Sperry Chalet experience.

The National Park Service is relying on comprehensive photo documentation of the building, as well as architectural drawings from 1913, 1940, 1996, 2011, and the 2017 stabilization drawings. Much of this information was condensed into the *Sperry Chalet Dormitory Historic Systems and Finishes* (2017). The location was selected by Louis Hill to augment a network of backcountry Swiss-style chalet experiences for park visitors. Originally designed by Samuel Bartlett, materials used in the construction of the building were acquired locally, while labor was provided by Italian stonemasons. The massive masonry walls and two interior masonry chimney's survived fire impacts and were incorporated in the 2017 stabilization treatments. The building's shell provides the outline for further stabilization and preservation treatments.

Analysis of the building's exterior and interior, prior to the fire has resulted in this list of Character Defining Features that must be retained during future stabilization and preservation actions.

Building Shape: The rectangular outline is built directly on bedrock using stone drawn from a nearby quarry. The remaining historic fabric consists of random ashlar masonry walls. Should masonry treatments be required during stabilization or preservation treatments, special attention will be made to the mortar texture, depth, color, width and tooling. Any stonework will match original rough texture and color. Additionally, should any stones need to be replaced due to spalling or other fire or weathering effects, the new stone color, size, shape and type will be matched as closely to the original using locally available materials. This action will preserve the remaining historic materials and the distinguishing character.

Stones exhibit hand tooling to shape with some patterned stonework visible. Corners are quoined. Building on this theme, stones extend up to a foot from the rest of the wall in distorted shapes.

Some of these stones act as corbels that formerly supported the pole brackets which held up the log framing utilized on the roof and balconies. Arched stone lintels are visible at windows and doorways. Additionally, the south wall's prominent gable "GNRY" motif and lower diamond shaped stone.

Roof and Roof Features: The Sperry dormitory had a double-pitched gable roof with front and rear eave gables. The ridge ran north-south in the long direction of the building. The roof had a 9 in 12 slope (9" vertical rise for every 12" horizontal run). It measured approximately 24' along the slope from the center ridge to the end of the eaves and 110' long along the ridge running north-south. According to original plans, the eaves were raised 18". Log purlins about 7" to 8" in diameter were spaced about 3' apart on center and spanned from the exterior east and west stone walls to the 10" diameter ridge beam running the length of the building. These purlins extended beyond the east and west stone walls to support the eaves on the building's exterior and small log braces were used to support these beams outside. The extended purlins of the log framing are not exposed past the drip line of the roof. Midway between the outer walls and the ridge beam, the purlins were supported by a 10" diameter intermediate beam running parallel to the ridge beam. The intermediate beams and ridge beams were supported on 6" to 8" diameter log columns. Some of the intermediate beams were also supported by diagonal log members leaning on the center log column and the perimeter stone walls. While references do not state how far the eave's extended past the walls, photo estimates range from 2.5 feet – 3 feet. Two flying rafters should be exposed at the eave. On the north and south gable walls, the overhanging roof eaves were supported by additional eave purlins and pole braces that rested on corbelled wall stones. Two gabled dormers extended from the roof on the east side of the building, spaced midway between the center of the building and the ends. The west side of the building had a large gabled dormer in the center with two small gabled dormers on either side of it. The dormer roofs each had their own set of log purlins, ridge beams, and intermediate beams and were supported by an elaborate system of log braces in the building's interior and pole braces resting on corbelled wall stones on the exterior.

The roof rests primarily on sanded decking of 1x8 boards visible on the interior second floor rooms. Some decking appears rough sawn in photos.

During the period of significance for the dormitory building (1914-1949), two differing roofing systems were employed. The preferred system includes 16" fire retardant cedar shingles installed to match the historic roof pattern with +/- 5 inch exposure and a rough cut cedar board ridge cap. However, the building was also historically clad with "worm green" colored asphalt shingles and galvanized ridge cap with ball finials. A roofing system that provides the appearance of either roofing material must be retained during stabilization or preservation treatments.

Additionally, two masonry chimneys extend from the bedrock, through both "floors" and would have exited the roof on the eastern slope (mountain). These should be preserved and maintained in place.

Should preservation treatments include more of the building, the following character defining features shall be retained:

Exterior Features

Openings: Intentional patterning of the 36 openings for windows and doors are located within the historic masonry. These openings provide symmetrical balance not only to the wall elevation, but also to the gables and dormers. Arched stone lintels are the main decorative detail above all exterior openings. Painted arched wood infill is located above framing for windows and doors. The two entrances are located on the west elevation. These doors had had a 2-light window in the top half of

the door with a thin wooden muntin dividing the two lights. The exterior side of the doors had horizontal head, lock, and bottom rails as well as vertical lock and hinge stiles. Within this framing was diagonal wood panels. The interior side of the doors only had the diagonal wood panels with no stile or rail elements. All balcony doors should be wood with rustic design patterns exterior and interior. Due to the plainness of the rooms, door patterning (diagonal and vertical planks, cross bracing) were a distinctive detail. All doorways have separate screen door. There is adequate documentation and photographs of doors that would enable replication.

The Sperry dormitory had 52 6-light wooden casement windows. Most of these windows (44) were built in pairs (22 pairs total) within a single opening in the stone wall, separated by vertical wooden mullions. The rest of the windows were single 6-lite units. Every sleeping room of the dormitory had windows. Thin wooden muntins divided each window into 6 lights. Each of these lights measured approximately 10" wide by 20" high, making each window unit approximately 30" wide by 40" high, excluding the outside casing and sash. Each window had a removable wood screen panel fastened from the outside. There is adequate documentation and photographs of windows that would enable replication.

Projections: First floor decking should be of sufficient width to be historically appropriate. Vertical log posts are hand peeled and have rounded tops. Horizontal top and bottom railings are hand peeled logs with vertical log posts at regular intervals for a symmetrical appearance. 2x6 wooden planks laid side by side perpendicular with their edges coped against the stone wall. A short stone staircase of five concrete steps is located on the north end of the front deck. The landing of this stair is surrounded by a short stone retaining wall on two sides.

Second floor balconies should have sufficient scaled width to historic appearance. A total of five log-framed balconies extending from the dormitory's second floor. Post and rail construction are similar to first floor. Two balconies on the east side of the building and one on the west side were sheltered by the dormers above them. The balconies on the north and south gable walls were sheltered by the eaves of the roof. The decks were made up of eight 2x6 planks laid side by side, parallel to the wall, with small gaps between them. Like the eaves, the balconies were further supported by log pole braces extending to the wall diagonally and resting on corbelled wall stones. Posts have rounded tops with axe pointed bases. All woodwork is painted.

Interior Features

Trim and Secondary Features: A rectangular concrete lintel is situated above all interior openings, contrasting with the arched exterior detail. A small apron was affixed to the interior window framing which lacked a stool. Because of the plainness of the interior rooms, the paint scheme (floors only) and use of light stain (all walls, interior doors, interior window framing and sash) is distinctive. Walls were clad with beaded tongue and groove wood paneling and finished to reflect wood grain. Finished tongue and groove wood flooring is painted throughout. "Sperry Orange" color only used on the floor of sleeping rooms.

Spaces, Close Range Materials and Craft Details: The building was used as a dormitory, sleeping spaces and storage of linen is required as is retention of plain, sparse furnishings. This heightens texture, patterns and use of color within spaces. Every sleeping room has masonry wall exposed with hand tooling evidence. While the stone walls convey rustic design, stones are dressed in distinctive contrast to the exterior ruggedness. Each sleeping room has wood window with 6-light sash. Ball tip hinges used throughout building. Historic interior and exterior door patterns should be retained. Stone masonry chimneys are visible on first and second floors. The building must have two interior

stairways. Starting newel and landing newel are hand peeled rounded logs. Rails and balusters conveyed rustic stairway design.

Exposed Structure: Log framing is visible on the interior especially on the second floor sleeping rooms. Exposed finished and rough sawn roof decking and is visible overhead. Log framing or similar look should also be visible on the first floor overhead.

Future stabilization and preservation treatments for the Sperry Chalet Dormitory will preserve these character defining features. Enclosed is a compact disk with extensive photo documentation of these character defining features. The park has reached a finding of **historic properties, affected, no adverse effect** for stabilization and preservation treatments that follow these standards. As supplemental designs are available, these will be circulated to your office for review. We request your concurrence with our finding. If you have any questions, please contact Sierra Mandelko, Cultural Resources Specialist, at 406-888-7943.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jeff Mow", is written over a faint, larger signature that appears to be "Sierra".

Jeff Mow
Superintendent

Enclosures

cc: Chairman Trahan, Kyle Felsman, CSKT THPO
Chairman Barnes, John Murray, BN THPO
Christopher Wilson, Advisory Council for Historic Preservation

Appendix E Letter from State Historic Preservation Officer



*Historic Preservation
Museum
Outreach & Interpretation
Publications
Research Center*

April 17, 2018

Mr. Eric R. Smith
Acting Superintendent
National Park Service
Glacier National Park
West Glacier, MT 59936

Ref: Sperry Chalet Dormitory Reintroduction of Missing Character Defining Features

Dear Mr. Smith:

Thank you for your March 27 letter to SHPO identifying Sperry Chalet Dormitory's character defining features and Glacier National Park's commitment to reintroduce them in the building's reconstruction. Your letter and attached CD identify these features by name and in photos. Supplemental to that is the April 13 schematic design drawing set for phases 1 and 2. This shows the floor plan to be reconstructed similar to its 1996 layout, with minimal modifications.

SHPO concurs with Glacier National Park that the reconstruction/rehabilitation plan you present for the Sperry Chalet Dormitory would have *no adverse effect* on the property's National Register-National Historic Landmark qualities. We anticipate any sound insulating or lighting to be innocuous and not at odds with the building's overall character; and we understand GNP's intent is to preserve the stone chimneys.

SHPO's and GNP's concurrence here resolves Section 106. If the snowbound dormitory's conditions and project plans change after your staff and architects inspect the building in July, please contact us for further, expedited consultation.

Sincerely,

Pete Brown, MSHP
Historic Architecture Specialist

File: NPS-Glacier-2018033005

225 North Roberts Street
P.O. Box 201201
Helena, MT 59620-1201
(406) 444-2691
(406) 444-2696 FAX
montanahistoricalsociety.org

