National Park Service
U.S. Department of the Interior

Mount Rainier National Park
Washington

Rehabilitate Paradise Inn Annex and Snow Bridge
Mount Rainier National Park, Washington
Environmental Assessment



June 2016

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Rehabilitate Paradise Inn Annex and Snow Bridge
Mount Rainier National Park

Environmental Assessment

SUMMARY

Mount Rainier National Park (park) is proposing to rehabilitate the Paradise Inn Annex and Snow Bridge. The proposed project would address structural issues with the buildings and bring them into compliance with International Building Code and National Fire Protection Act standards. The project would complete the rehabilitation of buildings in the Paradise Historic District that began with rehabilitation of the main Paradise Inn and East Wing from 2006 to 2008. The proposed project is being considered because of the need to protect park resources and reduce the risk for potential damage to the Annex and Snow Bridge from excessive snow loads, or collapse as the result of a seismic event.

This Environmental Assessment (EA) evaluates two alternatives: a no action alternative and a preferred alternative. Under the no action alternative, no rehabilitation of the Annex and Snow Bridge would occur, and the current risk of damage or collapse would continue. The proposed project would include installing a new concrete foundation for the Annex and replacing the existing rubble with a replica veneer using stones from the existing foundation. Plumbing, electrical, fire safety, and other interior and exterior improvements would also be made to the Annex and Snow Bridge. Drainage around the buildings would be improved to prevent deterioration of the foundation. Proposed building rehabilitation would address safety concerns and protection of historic park buildings.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet the objectives of the proposal, 2) evaluates potential issues and impacts on resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts.

Public Comment

If you wish to comment on this EA, you may post comments online at: http://parkplanning.nps.gov/mora or mail or hand deliver comments to: Superintendent, Mount Rainier National Park, 55210 238th Ave. E., Ashford, Washington, 98304. This EA will be on public review for 30 days.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. Comments will not be accepted by fax, email, or in any other way than those specified above. Bulk comments in any format (hard copy or electronic) submitted on behalf of others will not be accepted.

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INTRODUCTION

Mount Rainier National Park (park) is proposing to rehabilitate the Paradise Inn Annex and Snow Bridge to address structural issues and bring the Annex and Snow Bridge into compliance with International Building Code and National Fire Protection Act standards. The project would complete rehabilitation of buildings in the Paradise Historic District, which was initiated in 2005 (NPS 2005). The proposed project includes constructing a new concrete foundation, improving site drainage, implementing structural upgrades, and making other interior and exterior improvements.

Paradise Inn is located on the south slope of Mount Rainier (Figure 1) in the Paradise area (Figure 2). Paradise is the most popular and heavily used area of the park and, in addition to Longmire, is the only visitor use area that is accessible by vehicle year-round. The Inn is open for overnight lodging from late spring to early fall. Paradise Inn is listed on the National Register of Historic Places (NRHP), was designated as a National Historic Landmark (NHL) in 1987, and is a contributing component of the Mount Rainier National Landmark Historic District. Paradise Inn consists of two structures, the Inn and the Annex, which are connected by the Snow Bridge (Figure 3). The Annex was constructed in 1920 and provides 79 guest rooms, over half of all overnight lodging in the park.

An Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were prepared in 2005 for construction of the Henry M. Jackson Memorial Visitor Center and rehabilitation of the Inn at Paradise (NPS 2005). The proposed action analyzed in the EA and authorized in the FONSI included the rehabilitation of the Annex and Snow Bridge. Rehabilitation of the Inn occurred from 2006 to 2008; however, the Annex and Snow Bridge were not included in the work due to funding limitations.

The purpose of this EA is to examine the environmental impacts and cultural resource effects associated with the current proposed action to rehabilitate the Paradise Inn Annex and Snow Bridge, including details and actions and potential impacts that were not described in the 2005 EA. Therefore, a new EA was prepared. To provide a baseline for evaluating the impact of alternative actions, a no action alternative that would not rehabilitate the Annex and Snow Bridge is also evaluated. This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations (CFR) §1508.9), and National Park Service (NPS) Director's Order (DO)-12: *Conservation Planning, Environmental Impact Analysis, and Decision-Making*.

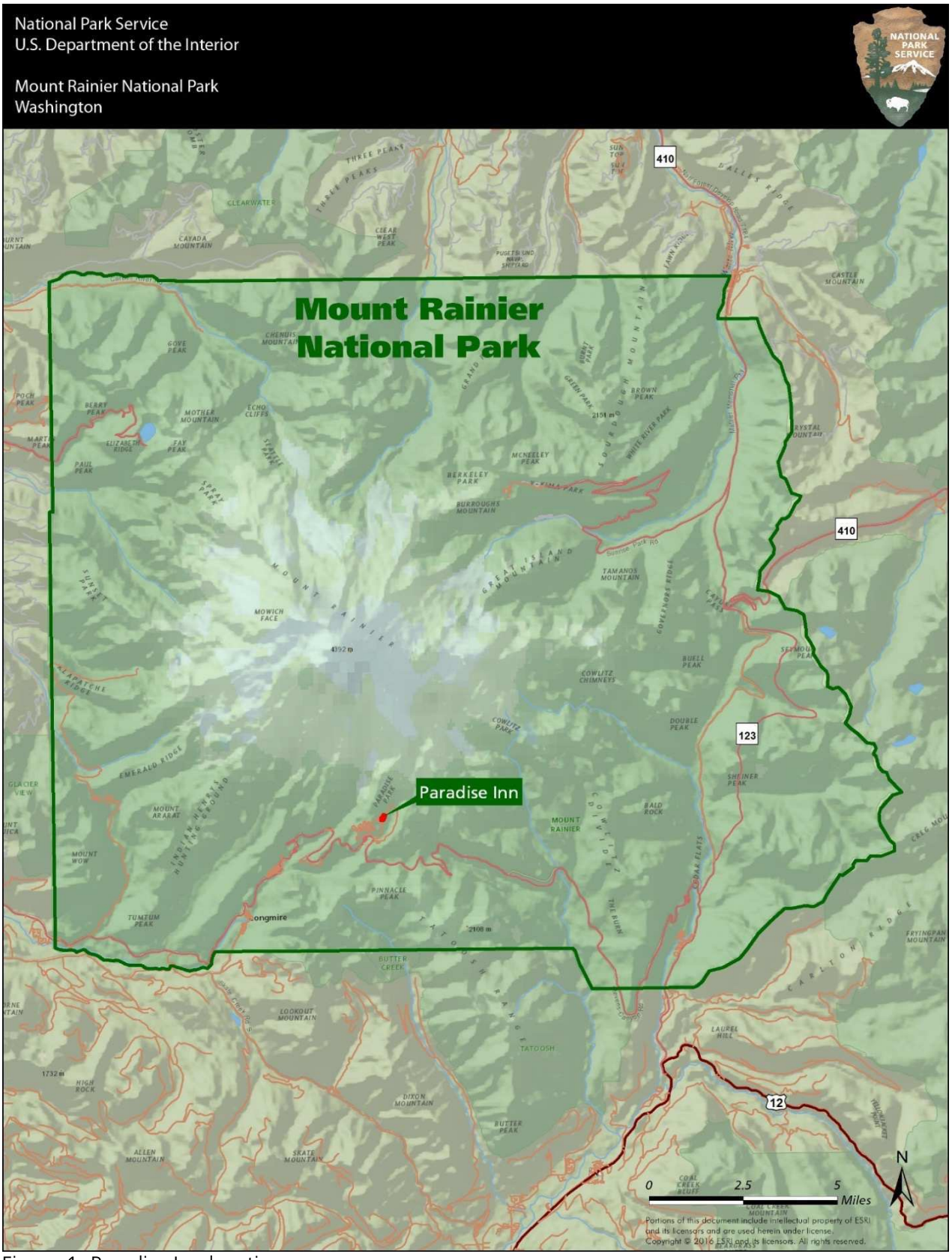


Figure 1. Paradise Inn location

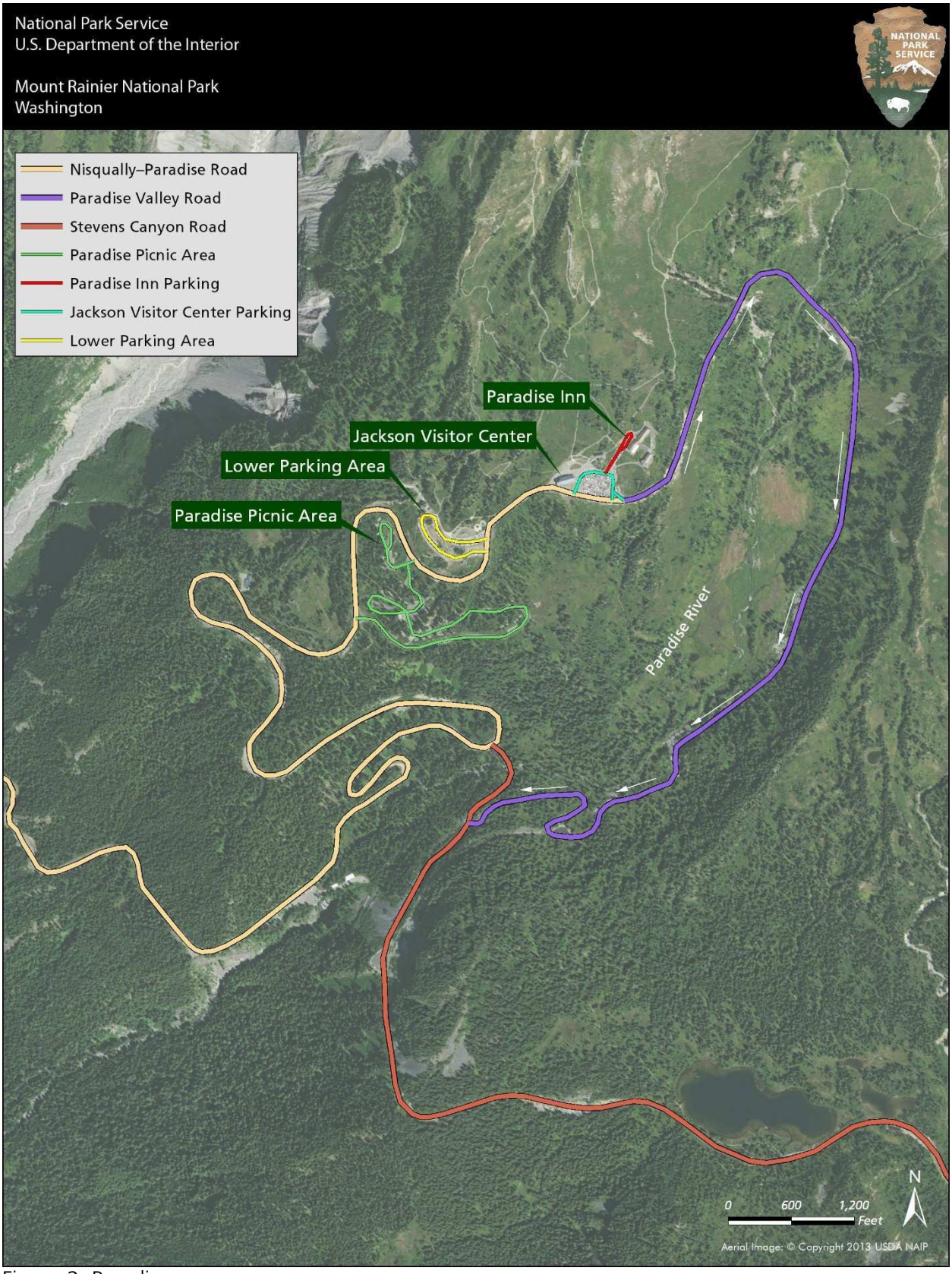


Figure 2. Paradise area



Figure 3. Paradise Inn Annex and Snow Bridge

Purpose and Need

The purpose of the proposed action is to rehabilitate the Paradise Inn Annex and Snow Bridge, correcting identified structural and drainage deficiencies and bringing the buildings into compliance with current building codes and standards. The project would complete rehabilitation of the buildings in the Paradise Historic District.

The proposed project is under consideration because the Annex and Snow Bridge are in danger of structural failure. The recurring harsh winter conditions (40 to 90 feet of annual snowfall) during the lifetime of the historic structures have placed significant pressure on structural components of the buildings. In 1996, a structural assessment revealed the potential for a "catastrophic" failure (AHBL 1996). Although the main Paradise Inn building and East Wing have been rehabilitated to current structural standards, the Annex and Snow Bridge do not meet current standards. The foundation of the Annex has been compressed, deformed, and shifted, leaving the building susceptible to failure under a heavy snow load or as the result of a seismic event. Failure would likely take the form of damage severe enough to render the Annex and Snow Bridge unfit for human habitation, although complete collapse of the Annex and Snow Bridge buildings also could occur. Inadequate drainage around the foundation is contributing to the undermining of the foundation. Degradation of exterior walls caused by constant moisture also is contributing to accelerated deterioration of the foundation. Building upgrades are needed to bring the Annex and Snow Bridge into compliance with International Building Code and National Fire Protection Act standards.

Issues and Impact Topics

Issues and Impact Topics Retained for Further Analysis

Environmental issues (issues) were identified during internal and external scoping conducted during the life of the planning project. Issues are environmental problems, concerns, and opportunities regarding the proposal to rehabilitate the Paradise Inn Annex and Snow Bridge, or with alternatives to the proposal. The issues describe the relationship between the actions in the proposal and alternatives and the specific resources that would be affected by those actions. The issues are organized by "impact topics," which are headings that represent the affected resources associated with the issues that are analyzed in detail. The issues and corresponding impact topics retained for analysis in this EA are presented below.

- The proposed project would result in modifications to the Paradise Inn, a National Historic Landmark, and would occur within the Mount Rainier National Historic Landmark District (NHLD). The proposed project must address the need to rehabilitate the Annex and Snow Bridge to withstand snow loading typical of the Paradise area and provide seismic stability while also addressing potential effects on historic resources. These issues are addressed under the *Historic Buildings* impact topic.
- The proposed project would result in changes to surface and groundwater management near the Annex and Snow Bridge. Drainage improvements, construction access, and staging activities during construction would need to be implemented while minimizing

impacts on water resources and wetlands near the Annex. These issues are addressed under the *Water Resources and Wetlands* impact topic.

- The Annex and Snow Bridge do not meet current fire, electrical, and plumbing building codes. The proposed project would bring the structures into compliance with modern building codes and improve safety for park visitors and staff. This issue is addressed under the *Health and Safety* impact topic.
- The Annex and Snow Bridge are vulnerable to structural failure, including potential collapse during a seismic event. The proposed rehabilitation project would eliminate the risk of structural failure due to structural deficiencies. This issue is addressed under the *Health and Safety* and *Historic Buildings* impact topics.
- The Paradise area is the most heavily visited area of the park, with approximately 70% of visitors to the park spending a portion of their stay in the area. Rehabilitation of the Annex and Snow Bridge would need to efficiently implement construction activities while minimizing impacts on park visitors. This issue is addressed under the *Visitor Use and Experience* impact topic.
- The Paradise Inn provides a unique lodging opportunity for visitors to stay within the park. Rehabilitation of the Annex and Snow Bridge would help preserve this opportunity and improve the experience for future visitors staying in the Annex, which has the largest number of lodging units in the park. This issue is addressed under the *Visitor Use and Experience* impact topic.
- Operation of the Paradise Inn, including the Annex, provides revenues for the park concessioner, fee revenue for the park, and employment for the concessioner employees. Structural damage that closes the Annex would reduce the number of rooms available in the park and would result in socioeconomic impacts on the park concessioner and gateway communities. Similar short-term impacts would occur during construction. These issues are addressed under the *Socioeconomics* impact topic.

Issues and Impact Topics Considered but Dismissed from Further Analysis

Table 1 briefly discusses those issues and impact topics that were dismissed from further analysis along with a brief explanation of the reasons for dismissal. As a general rule, issues were retained for consideration and discussed in detail if:

- the environmental impacts associated with the issue are central to the proposal or of critical importance;
- a detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives;
- the environmental impacts associated with the issue are a big point of contention among the public or other agencies; or
- there are potentially significant impacts on resources associated with the issue.

If none of the considerations above apply to an issue or impact topic, it was dismissed from detailed analysis.

Table 1. Issues and impact topics dismissed from further analysis.

Topic	Reason Dismissed
Cultural Landscapes	The Paradise Inn, including the Annex and Snow Bridge, is a part of the cultural landscape and is a contributing element of the Mount Rainier NHLD. Potential effects on the NHLD are addressed under the *Historic Buildings* impact topic, therefore cultural landscapes were dismissed as a separate impact topic.
Archaeology	Unknown subsurface archaeological resources could inadvertently be impacted during construction. Archaeological monitoring would occur during excavation of the foundation and drainage features and any ground-disturbing activity. If archaeological resources were uncovered during construction, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and, if the resources cannot be preserved in situ, an appropriate mitigation strategy would be developed in consultation with the State Historic Preservation Officer (SHPO) and, as necessary, associated American Indian tribes. Any data recovery would precede and be completed before any further construction disturbance to the archaeological resources could occur. With implementation of monitoring and mitigation, adverse impacts on archaeological resources would be avoided or minimized; therefore, archaeology was dismissed as an impact topic.
Species of Concern (Amphibians)	Four amphibian federal and state species of concern are known to occur near the project area or staging areas: Cascades frog (*Rana cascadae*), tailed frog (*Ascaphus truei*), Van Dyke's salamander (*Plethodon vandykei*), and Larch Mountain salamander (*Plethodon larselii*). Potential impacts on these amphibian species include roadkill, being crushed by machinery, or falling into excavated areas during construction. Amphibians also could be crushed or trapped if they crawl into stored materials at staging areas. The potential for impacts would be mitigated by using sediment fence to prevent amphibians from entering work areas and staging areas and relocating amphibians in the wetlands closest to the work area prior to construction, as described in the *Resource Protection Measures* section. Sediment deposition in wetlands and waters downstream from the staging areas along the Valley Road and Stevens Canyon Road could adversely affect amphibian habitat. Sediment-related impacts could include filling in spaces between rocks where amphibians lay eggs, seek cover, or forage. The growth and development of tadpoles and larvae could also be adversely affected by increased sedimentation. The potential for sediment-related impacts would be reduced by implementing measures to protect water quality as described in the *Resource Protection Measures* section. Direct wetland impacts are limited to 0.038 acre. These wetlands would be used to stage materials located immediately adjacent to the Annex during construction. Fabric would cover these small areas, and then would be removed after construction (see *Wetlands* section). Wetland vegetation is expected to recover within two to five growing seasons, and amphibian species of concern would repopulate the area immediately after the site has been restored. Based on the expectation of minimal impacts, combined with the capability of resource protection measures to avoid, reduce, or eliminate unacceptable impacts, no significant effects would occur. Because of this, amphibian species of concern were dismissed from additional analysis in this EA.
Threatened and Endangered Species (Northern Spotted Owl and Marbled Murrelet)	The proposed staging areas at Cougar Rock Picnic Area and Tahoma Woods would be near nesting habitat for the federally listed threatened northern spotted owl and marbled murrelet. No impacts on these species are expected to occur because timing restrictions to avoid the nesting seasons of these species would be implemented as described under *Resource Protection Measures*. Because no impacts are expected, northern spotted owls and marbled murrelets were dismissed from detailed discussion in this EA.
Indian Trust Resources	U.S. Department of the Interior (USDOI) policy requires consideration of Indian trust resources as an impact topic (USDOI 1995). No Indian trust resrouces are in the park; therefore, Indian trust resources were dismissed as an impact topic in this EA.

Topic	Reason Dismissed
Environmental Justice	USDOI policy requires consideration of environmental justice as a potential impact topic (USDOI 1997). Ashford and other communities surrounding the park contain both minority and low-income populations; however, environmental justice was dismissed as an impact topic for the following reasons: • Implementation of the preferred alternative would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect adverse effects on any minority or low-income population. • The impacts associated with implementation of the preferred alternative would not disproportionately affect any minority or low-income population or community. • Implementation of the preferred alternative would not result in any identified effects that would be specific to any minority or low-income community. • The impacts on the socioeconomic environment resulting from implementation of the preferred alternative may have short-term adverse economic effects, but over the long term, effects would be beneficial. In addition, the park staff and planning team do not anticipate the impacts on the socioeconomic environment to appreciably alter the physical and social structure of nearby communities.

ALTERNATIVES

Introduction

This section describes the no action alternative and the preferred alternative for rehabilitation of the Paradise Inn Annex and Snow Bridge (Figure 4). The no action alternative would not rehabilitate the Annex and Snow Bridge and would continue the present level of management, operations, and maintenance. The preferred alternative was developed to address the purpose and need for the project to complete the rehabilitation of the Paradise Historic District by rehabilitating the Annex and Snow Bridge, while protecting and preserving park natural and cultural resources.

The preferred alternative presents the NPS's preferred management action and defines the rationale for the action in terms of resource protection and management, visitor and operational use, cost, and other applicable factors. Other alternatives that were considered but eliminated from detailed analysis are discussed in this section. Also included in this section is a comparison of how well the alternatives meet project objectives and a summary comparison of the environmental effects of each of the alternatives.



Figure 4. Paradise Inn Annex
Photo Source: Kirk Associates, 2011.

Alternative A – No Action

The no action alternative describes the conditions that would continue to exist in the project area if no major rehabilitation or repair efforts were made. Under the no action alternative, no improvements to the Paradise Inn Annex and Snow Bridge would occur. Ongoing minor repair activities would continue, although these activities would not address the structural and drainage issues that could result in substantial damage to these buildings from snow loading and the risk of collapse from a seismic event. This alternative would not address noncompliance with current electrical, plumbing, and fire safety codes.

Alternative B – Preferred Alternative

Previous work completed on the Annex in 2008 included stabilizing the north masonry wall on the inside face with construction of a reinforced "shot-crete" concrete shear wall. However, the remaining health, life, safety, and seismic code rehabilitation efforts were intended to be completed in 2008, but were not completed for the Annex and Snow Bridge due to a lack of funds. The preferred alternative would complete the rehabilitation of the Paradise Inn that began with rehabilitation of the main Paradise Inn building from 2006 to 2008. This alternative would include installing a new concrete foundation for the Annex constructed of a replica veneer consisting of the original rubble. The preferred alternative also would include rehabilitation of the Annex and Snow Bridge to improve safety and drainage. This alternative would address the potential for severe structural damage from snow loading and the possible collapse of the Annex and Snow Bridge during a seismic event, while addressing noncompliance with current building codes. The preferred alternative actions are described below and are shown in Figures 5 through 8.

Foundation Improvements

The existing stone foundation of the Annex has been compressed, deformed, and shifted over time, leaving the building susceptible to collapse under snow loads or from seismic events. Under the preferred alternative, the existing stone foundation of the Annex would be replaced with a new reinforced concrete foundation with a stone veneer (Figure 5). The cast-in-place concrete foundation would be constructed after excavation of areas around the foundation and removal of the existing foundation. During foundation work, temporary steel frameworks would be used to leverage and stabilize the building. To maintain the historic appearance of the building, the existing face of the stone foundation would be documented with photos and datapoint scanning, with each piece numbered prior to removal. A replica veneer would be constructed from the existing stones by cutting the backs of the rocks, as required for the new depth, and replacing them in their original locations to recreate the appearance of the stone foundation prior to rehabilitation. Following construction, the external appearance of the building foundation would be the same as before construction. The new concrete foundation with a stone veneer and associated drainage improvements would be resistant to damage from water infiltration.

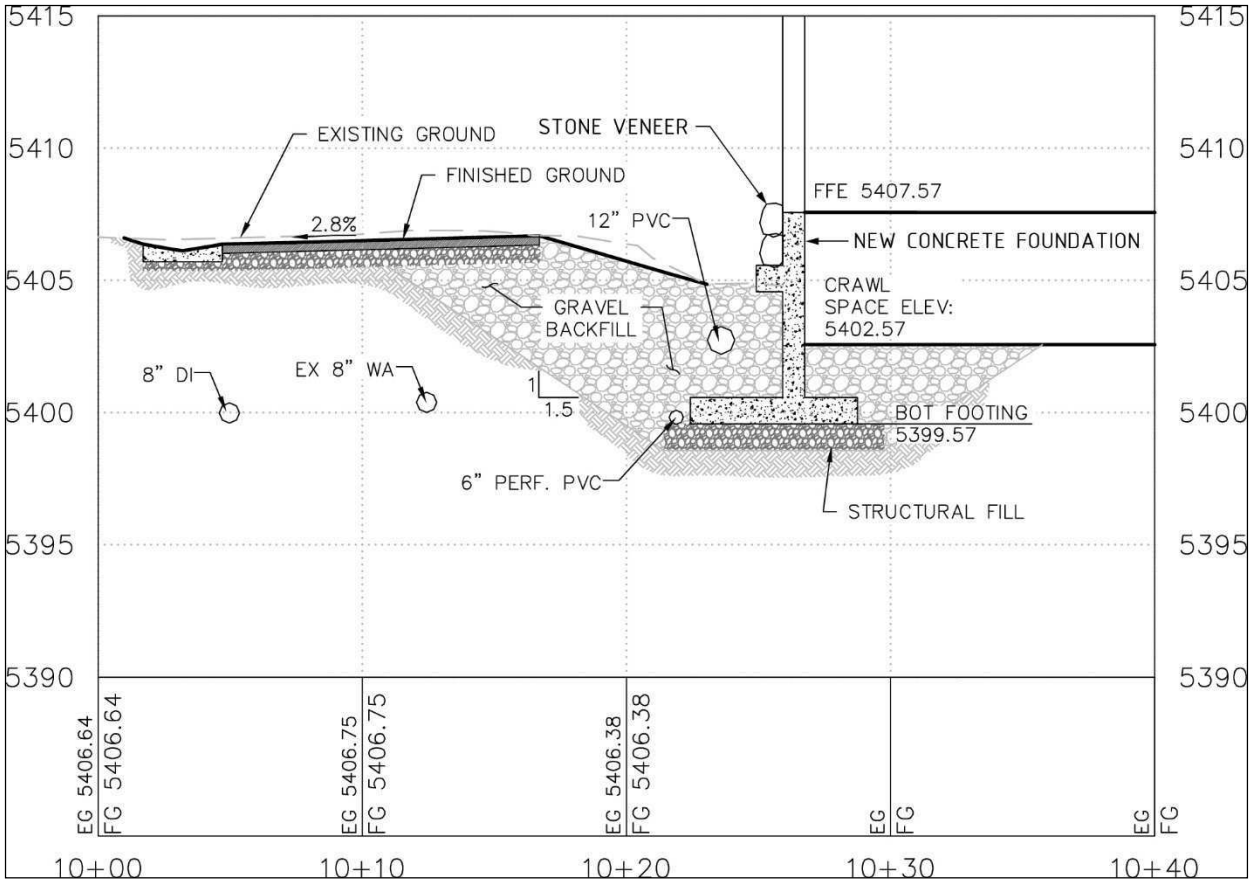


Figure 5. New concrete foundation with stone veneer

Drainage Improvements

Currently, surface water runoff flows toward the Annex in several locations, and surface water and groundwater infiltrate the Annex basement. Inadequate drainage around the foundation of the Annex contributes to the undermining of the foundation. A storm drain and groundwater diversion system would be installed to divert water away from the building (Figure 6). A perforated pipe buried below the surface would capture groundwater before it infiltrates into the Annex basement. Groundwater flow from the foundation of the building would be discharged to an outfall east of the Annex. A new drainage swale on the west side of the Annex would collect surface water flows from paved areas west and south of the Annex would direct them into a drain system that would be routed around the south end of the building and would discharge into a 60-foot-long rock dispersion trench on the east side of the Annex. A pipe draining the "triangle" area between the Annex and Snow Bridge would connect to the existing 24-inch pipe running northeasterly beneath the Snow Bridge. The drainage improvements would prevent water infiltration in the basement of the Annex and would improve drainage in the "triangle." On the east side of the Annex, existing gravel areas would be regraded to slope away from the building foundation. Accumulated sediment along the east edge of the parking lot north of the Annex would be removed to reestablish sheet flow.

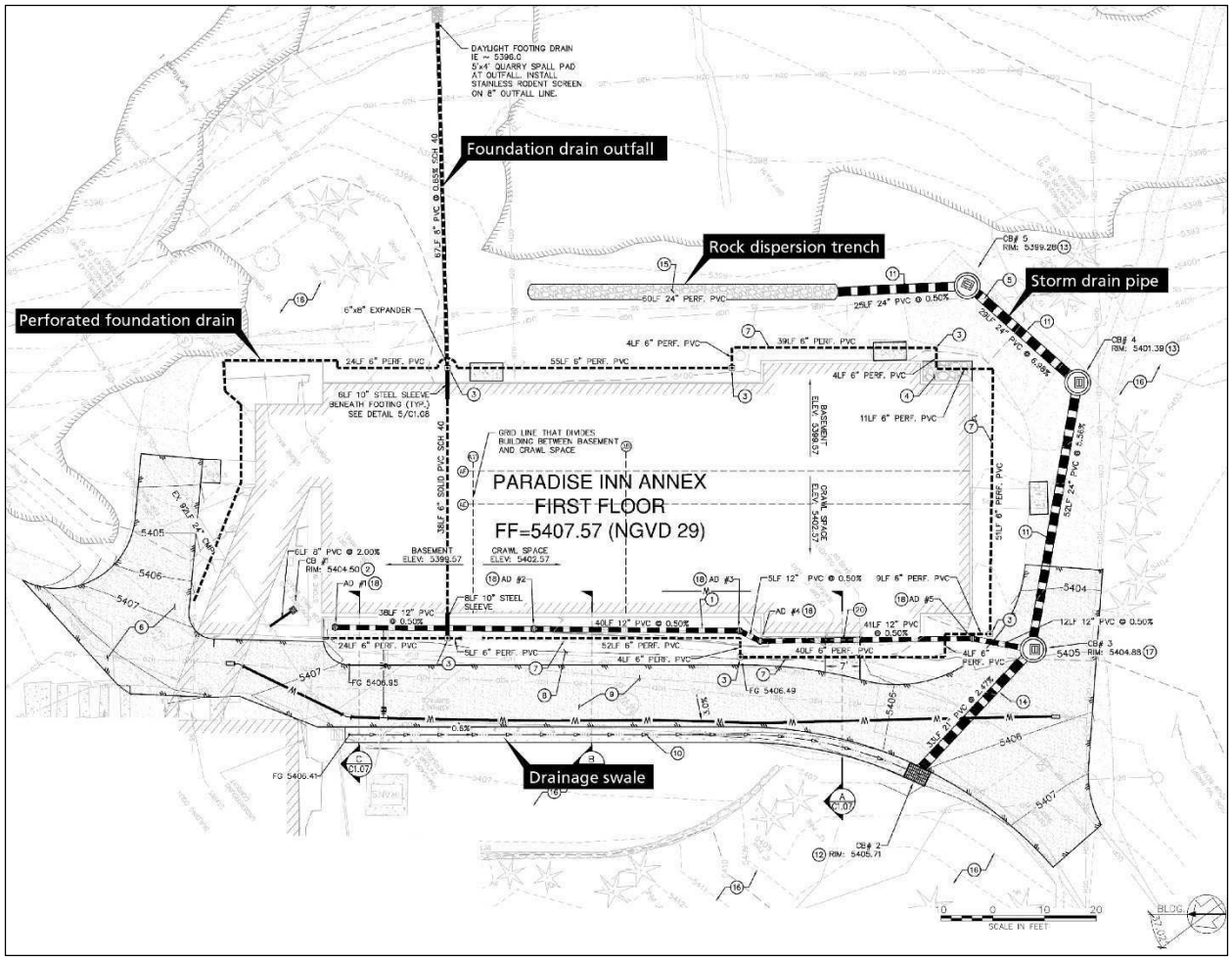


Figure 6. Proposed drainage improvements

The NPS would salvage native plants before construction for use in revegetation of temporarily disturbed areas around the foundation. The project would use erosion- and sediment-control BMPs to protect nearby waters and wetlands and minimize erosion and sedimentation during construction activities as described under *Resource Protection Measures*.

Annex and Snow Bridge Building Rehabilitation and Improvements

The original design of the building did not take into account the extreme snow loads of the Paradise area, nor did it address modern seismic safety standards. The Annex and Snow Bridge currently have insufficient shear resistance and inadequate lateral load resistance due to a lack of connections between the primary structural members. The deteriorated condition of structural members in the Annex and Snow Bridge exacerbates these design deficiencies. Issues with shear resistance would be addressed by installing seismic building improvements such as shear walls and plywood diaphragms in the basement and on each floor. Additional structural deficiencies would be addressed by repairing damaged basement beams and connections.

Upgrades to the interior of the Annex and Snow Bridge would bring the structure into compliance with current codes and improve energy efficiency. Rehabilitation of the building

interior would include installing code-compliant plumbing and electrical systems; upgrading doors, corridor walls, and egress to comply with current fire codes; and replacing fire protection, fire suppression, and fire alarm systems with code-compliant systems. Acoustic materials (insulation and resilient channels) would be installed in the walls and floors as required by code. Code-required access to mechanical equipment in the attic would be provided by installing a ceiling hatch with a ladder in a storage room. Exterior walls would be improved with new insulation and a new ventilation system to provide a secure building envelope, add moisture protection, and improve energy efficiency. The exterior siding is deteriorated and would be replaced.

The stairs at the Annex north tower would be reconstructed to meet code (Figure 7). Roof overhangs at the north stair tower would be extended and supported by kickers to match the roof kickers at the main roof (Figure 8). New roof joists and overframing would be installed to slightly extend the roof at the "triangle" by the north stairs and Snow Bridge to protect the building from water infiltration. Shingles would be extended to match the existing roof.

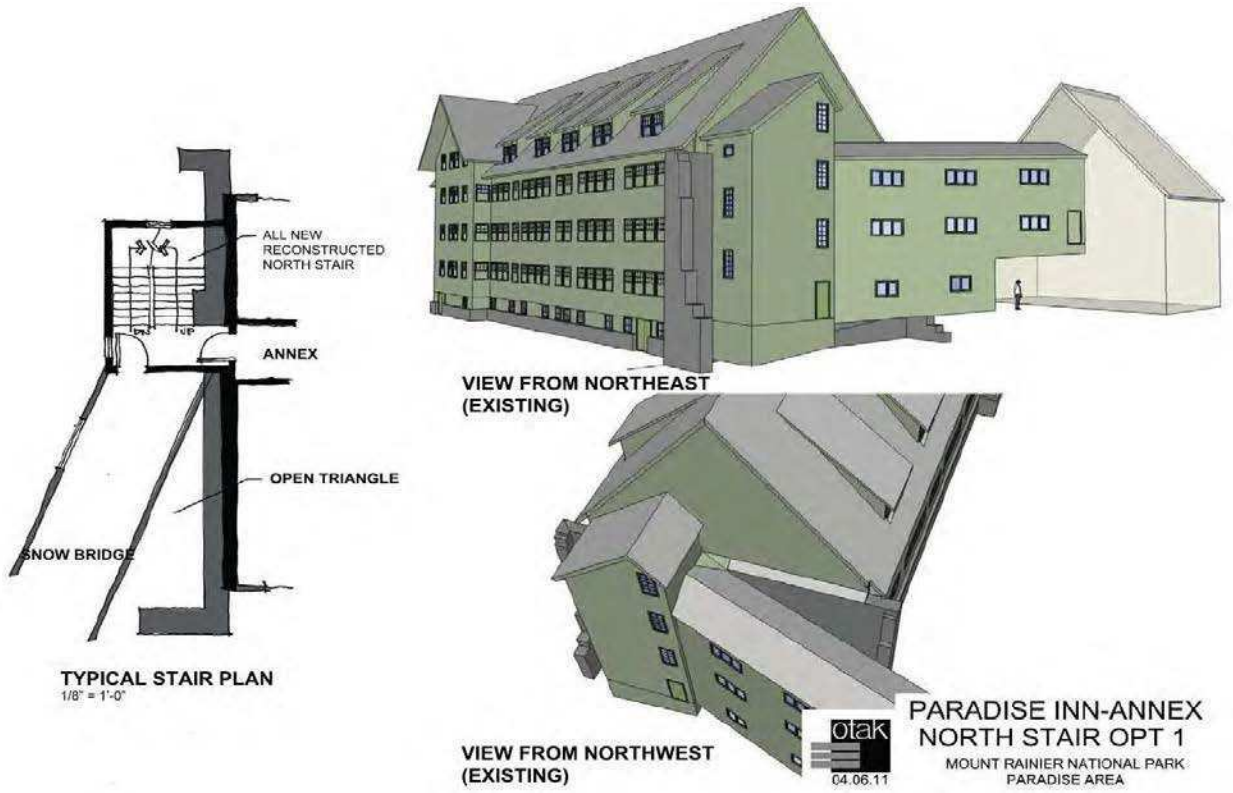


Figure 7. North stairs

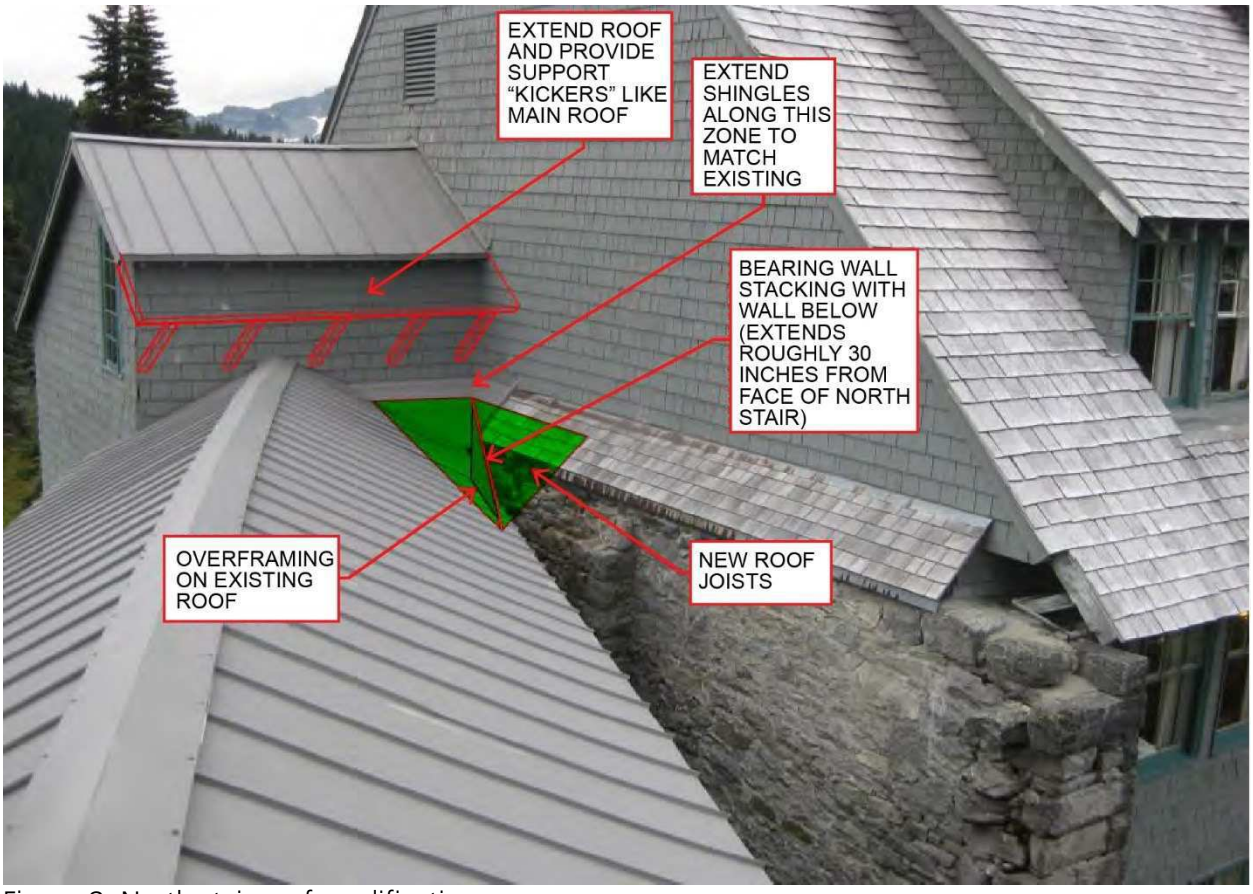


Figure 8. North stair roof modifications

Replacing or repairing the windows in the Annex and Snow Bridge would address issues with drafty conditions and energy efficiency while maintaining the historic appearance of the windows. Historic windows in the Annex and Snow Bridge would be removed, refurbished, and reinstalled. Non-historic windows (aluminum windows on the first floor and windows previously replaced on the second, third, and fourth floors) would be replaced to match the historic windows. Windows at the north and south stairs, basement, and Snow Bridge would be refurbished and fitted with safety features to reduce the risk of falls.

Additional upgrades would include removing the wood paneling and suspended acoustical ceilings in the Annex and Snow Bridge to restore the historic fabric and match the rest of the Paradise Inn complex. The existing crown molding would be removed, refinished, and reinstalled. Annex furniture would be removed, stored, and returned to the Annex following rehabilitation of the building.

Building rehabilitation work would occur within the footprint of the existing Annex and Snow Bridge; no additional ground disturbance would occur beyond impacts described above for foundation and drainage work and impacts described below for temporary staging and access.

Staging, Access, and Contractor Parking

Staging, access, and contractor parking areas would occur at several locations inside and outside of the park (Figure 9). In the Paradise area, the gravel parking areas around the Annex, portions of the main parking area, a portion of the Paradise picnic area (Loop A), and the one-way Paradise Valley Road would be used for staging and access during the summer months when snow conditions permit, from August through October 2017 and from May through October 2018 (Figure 10). The parking area northwest of the Paradise Inn and the access road would be used for contractor parking and vehicle unloading and staging during the winter months. The majority of the parking area for the Jackson Visitor Center would be reserved for visitor use and would not be available for staging or contractor parking. Staging on the east and south sides of the Annex would be limited to existing gravel areas and nearby vegetated areas that have already been disturbed.

Additional winter staging would occur at the Cougar Rock Picnic Area parking lot, which is about 9 miles from the Paradise area along the Nisqually to Paradise Road. Winter staging outside the park boundary would be available at Tahoma Woods near the Tahoma Woods wastewater treatment facility on Highway 706. The Cougar Rock Picnic Area and Tahoma Woods staging areas would be used from November 2017 through April 2018 and from November 2018 through April 2019. Because of the proximity of Northern spotted owl territories and marbled murrelet habitat, staging would not occur at the Cougar Rock Picnic Area from April 1 through September 23 (to protect nesting murrelets) and from March 15 to September 30 if nesting owls are present. The Backbone Ridge staging area would be used for summer staging from late June to mid-October. This site is a turnout about 350 feet long and 35 feet wide. The Backbone Ridge staging area is about 15.5 miles from the Paradise area along Stevens Canyon Road.

Staging and contractor parking would be limited to existing disturbed asphalt or gravel surfaces, with the exception of a small area east of the annex and a narrow strip adjacent to the access road where a small area of wetlands and non-wetland vegetation are present (Figure 10). The contractor would be responsible for clearing snow in the winter staging areas. If heavy vehicle use results in damage to asphalt in the staging areas, the contractor would be responsible for repairing the damage following construction. Construction fencing and sediment control measures would be implemented as needed to prevent sediment from moving from the staging areas to nearby waterways.

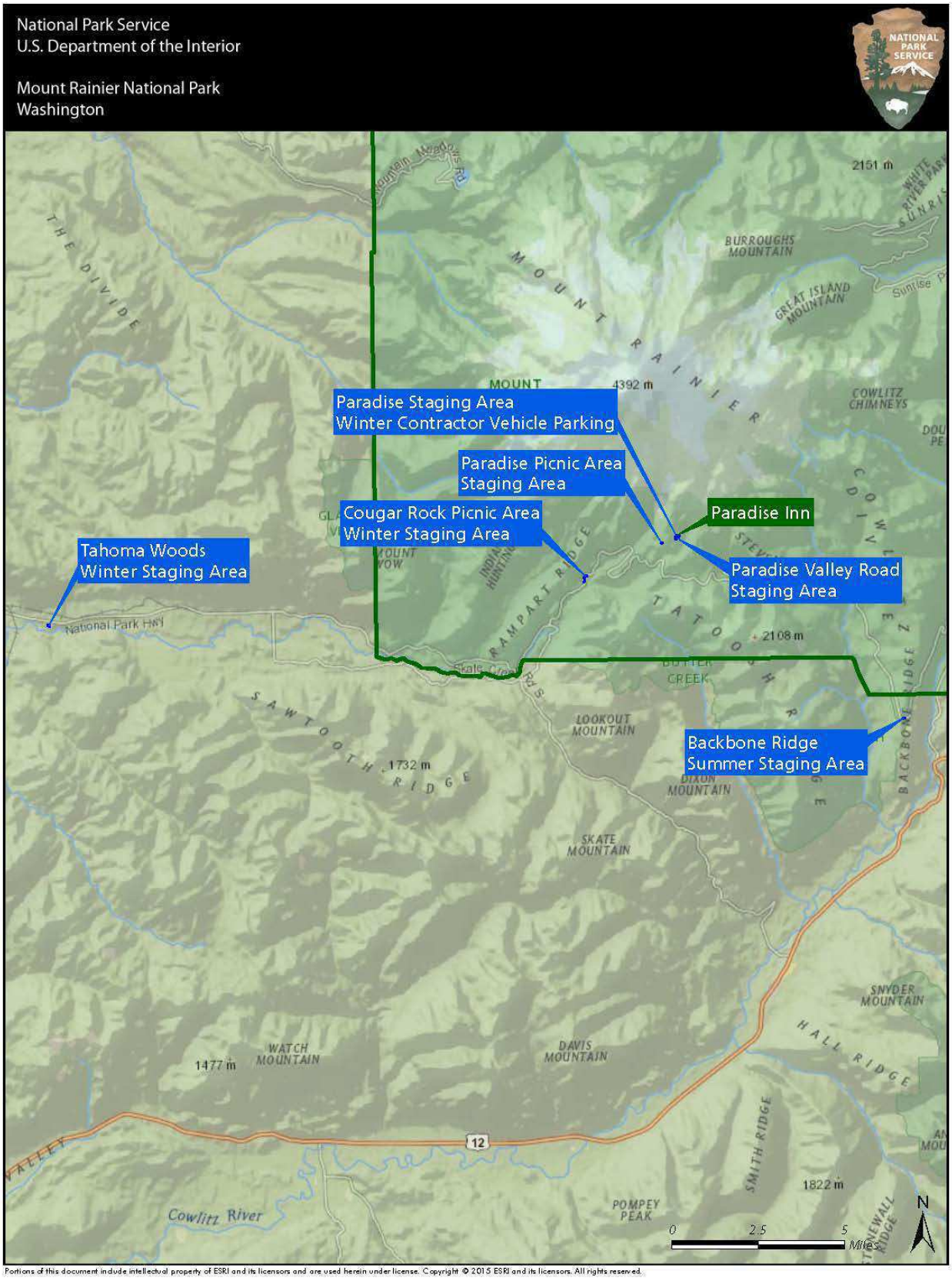


Figure 9. Staging areas

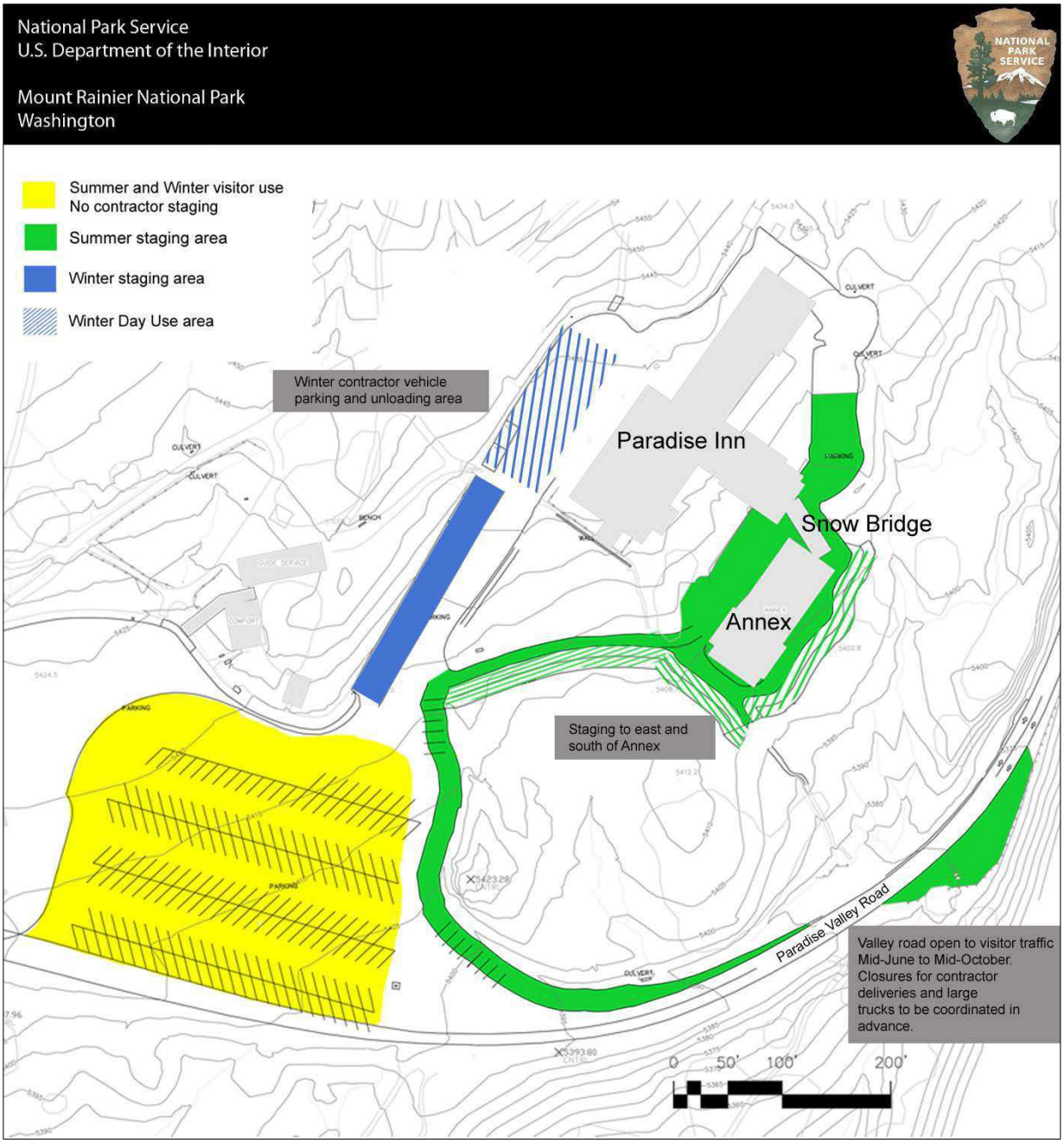


Figure 10. Paradise area staging

Traffic Control and Visitor Access

The Annex and Snow Bridge would be closed to the public during construction, anticipated to be from August 2017 through spring 2019. The Paradise Inn lobby, dining hall, and East Wing would remain open during construction. The one-way Paradise Valley Road may be used periodically during summer (from August through October 2017 and from May through October 2018) and closed with 72 hours' notice and approval from the NPS. The Valley Road would be open to visitors during weekends and holidays (Figure 10). The majority of the

parking area at Paradise, including the lower parking lot would remain open to visitors during construction.

The park would implement a number of steps to provide timely and accurate information to visitors during rehabilitation of the building. To facilitate visitor planning, the status of work on the Annex and Snow Bridge would be advertised in advance and updated as necessary. Information on road and parking area closures would be advertised on the park website, park newspaper, at visitor centers, and via social media.

Construction Schedule

The expected construction schedule for the project is as follows:

- August 15, 2017 – Annex closes to visitors
- Fall 2017 – Foundation and drainage work
- Winter 2017-2018 – Rehabilitate interior of building
- Winter and spring 2018 – Interior mechanical work
- Summer 2018 – Landscape restoration work
- Fall 2018 – Finish work (new fixtures and finishes)
- March 2019 – NPS takes occupancy and begins punch list
- Summer 2019 – Return Annex to concessioner and reopen

These dates are based on the NPS Line Item Construction Program presented in the President's Budget for Fiscal Year 2016. Due to the flexibility in appropriations, the schedule could be revised.

Sustainability

The NPS promotes a high standard of sustainable design for all park projects and closely follows the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings. The goals of sustainable design and construction are to reduce the total ownership cost of facilities; improve energy efficiency and water conservation; provide safe, healthy, and productive built environments; and promote sustainable environmental stewardship. Essentially, sustainability is living within the environment with the least impact on the environment. To the extent possible, the building rehabilitation and ongoing management of facilities would emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. The NPS would also reduce energy costs, eliminate waste, and conserve energy resources using energy-efficient and cost-effective technology during project construction.

Resource Protection Measures

To prevent and minimize potential adverse impacts associated with the preferred alternative, BMPs and mitigation measures would be implemented during the construction and post-construction phases of the project. General and resource specific BMPs and mitigation

measures for the project are listed below. (Note: This list is not all-inclusive, as there would be stipulations about implementation included in the contractor's specifications).

General Measures

- Construction limits, including staging areas, would be clearly marked with stakes prior to the beginning of ground-disturbing activities. No disturbance would occur beyond these limits other than protection measures for erosion/sediment control (these are typically placed just outside the clearing limit stakes). Temporary construction fencing would only be installed where determined necessary by the NPS.
- All tools, equipment, barricades, signs, surplus materials, and rubbish would be removed from the project work limits upon project completion. Any asphalt surfaces damaged due to work on the project would be repaired to their original condition. All demolition debris would be removed from the project site, including all visible concrete and metal pieces.
- Construction debris would be hauled from the park to a licensed disposal location.
- Debris would not be burned or buried in the park.

Air Quality

- Dust control (i.e., use of water as a dust suppressant) would occur, as needed, on active work areas where dirt or fine particles are exposed. The park would determine an appropriate water source for dust control.
- Equipment would not be allowed to idle longer than 15 minutes when not in use.

Water Resources

- Temporary Storm Water Pollution Prevention would be required and an Under-An-Acre Pollution Prevention Plan (UPPP) would be prepared prior to construction and implemented during construction. The UPPP would conform to all NPS and Washington state requirements and would:
    - describe the project and project schedule, provide information on soil and fill, and describe activities and materials that could generate sediment and/or pollute stormwater;
    - describe the BMPs that would be implemented to prevent erosion and sedimentation and identify, reduce, eliminate, or prevent stormwater contamination and water pollution from construction activity; and
    - be designed to prevent violations of surface water quality, groundwater quality, or sediment management standards.
- There would be no discharges from the project area of concrete wastewater or wastewater from the washout and cleanup of construction materials, fuels, oils or other pollutants, or soaps and solvents. As required by the UPPP permit, the construction contractor would discharge any groundwater from dewatering activities into a controlled conveyance system before discharge to a sediment trap or sediment pond. All

ground water would be treated. Treated, clean, non-turbid water could be discharged directly into surface water if the flow did not cause erosion or flooding of receiving waters.

- Measures to protect water quality from sedimentation are described below in the *Soils, Soil Erosion, and Sediment Control* section.
- In the event of an unauthorized discharge:
  - Further contamination would be prevented immediately.
  - Appropriate authorities and the NPS would be notified immediately.
  - Damages would be mitigated as required.
- Work areas, including material sources and staging areas, would be separated by the use of a suitable barrier that would prevent sediment, petroleum products, chemicals, other liquids, or solid materials from entering waters of the U.S. Barriers would be constructed and removed to avoid discharge of material into waters of the U.S. Sediment or other material collected by the barrier would be removed and properly disposed of.
- If a construction area were unworked for more than 7 days during the dry season or 2 days during the wet season, it would be covered with park approved certified weed-free mulch, compost, plastic sheeting, or something similar. All finished construction areas would be stabilized within 7 days after final grading.
- Staging areas on existing asphalt surfaces (used for construction equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) will be established in the field and will be, if possible, at least 150 feet away from streams in a location and manner that would preclude erosion into or contamination of streams or wetlands. Staging along the Valley Road would be limited to areas identified in the field by the NPS.
- For storage of equipment and materials at designated staging areas within 150 feet of streams and wetlands, appropriate erosion protection measures would be implemented to protect water resources. Structurally adequate debris shields would be constructed to contain debris within the construction limits and prevent debris from entering waterways, travel lanes open to public traffic, or areas designated not to be disturbed.
- Leaky equipment would not be allowed in the park. If equipment starts to leak while in the park, it would be repaired immediately or removed from the park.
- A Hazardous Spill Plan or Spill Prevention, Control and Countermeasures Plan, whichever is determined appropriate, would be in place, stating what actions would be taken in the event of a spill, notification measures, and preventive measures to be implemented, such as the placement of refueling facilities, storage, and handling of hazardous materials. The plan would be submitted at least two days before beginning construction work. Other measures related to the spill plan include:
  - All equipment on the project would be maintained in a clean and well-functioning state to avoid or minimize contamination from automotive fluids.
  - All equipment would be checked daily and any leaks would be immediately repaired upon discovery.
  - Chemicals, fuels, and other toxic materials would be stored, used, and disposed of in a proper manner.

- Oil, hydraulic fluids, antifreeze, or other chemicals would not be drained to the ground.
- If possible, equipment or vehicles would be refueled at least 150 feet away from streams or identified wetlands in a location and manner that would preclude erosion into or contamination of streams or wetlands. For refueling at designated refueling areas within 150 feet of streams and wetlands, appropriate spill containment measures would be implemented to protect water resources. The NPS would identify refueling areas, which would be approved by the park.
- A supply of acceptable absorbent materials would be kept at the job site in the event of spills. Acceptable absorbent materials are those that are manufactured specifically for the containment and cleanup of hazardous materials. Any spills would be cleaned up immediately. In the event of a spill, the NPS would be notified immediately.
- BMPs for drainage and sediment control, as described in the UPPP, would be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas.
- Vegetable oil-based hydraulic fluids are readily available and would be used in all heavy equipment to minimize potential impacts on water quality from spills.
- Fresh concrete, concrete byproducts, or other chemical contaminants would not be allowed to enter water bodies.
- Concrete batch plants or rock cutting operations would not be allowed in the park.

Wetlands

- Prior to construction work at locations where wetlands may be present adjacent to the project area, certified weed-free coir logs or other erosion-control measures such as silt fence would be installed to form a filter barrier to trap sediments from being deposited in wetlands. Construction fencing would be installed to define construction limits.
- In wetland areas impacted for staging activities, vegetation would be cut at ground level prior to construction to protect the root zone and allow vegetation to regrow following construction.
- Wetlands impacted for staging activities would be protected by placing fabric or mats prior to construction. No permanent fill would be placed in wetlands.
- Impacted wetlands would be decompacted following construction if the park determines that soil compaction has occurred that may inhibit the regrowth of vegetation in the wetlands.
- Temporarily impacted wetlands would be revegetated following construction using salvaged plant material.
- Hydrologic connections to wetlands would be maintained via culverts, ditches, or other measures.

Soils, Soil Erosion, and Sediment-Control Measures

- Excavated material that is suitable for growth of native vegetation, as determined by the park, would be salvaged and stockpiled according to park stipulations before any additional construction work takes place.

- Topsoil would not be mixed with subsoil.
- Use of BMPs in the project area for erosion control would include the following actions, depending on site-specific requirements:
    - Disturbed areas would be kept as small as practical to minimize exposed soil and the potential for erosion.
    - Erosion- and sediment-control devices would be installed and vegetation cleared prior to salvaging topsoil for storage.
    - Excavated material would be covered with water-repellent breathable material during storage to prevent erosion/sedimentation.
    - Silt fences, coir logs, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures would be installed. Erosion-control measures would be monitored to ensure they are properly installed and are functioning effectively.
    - Certified weed-free coir logs would be installed for filtering sediment from runoff and reducing the velocity of sheet flow. Logs would be installed according to plans and as directed by the park to address erosion concerns.
    - Silt fence would be installed according to plans, fencing would consist of one continuous piece of semipermeable fabric (or steps would be taken to join sections so there would be no gaps), fencing would remain in an upright position after installation, materials and equipment would not be leaned against fencing to avoid fence collapse, and fencing would be repaired to ensure an effective barrier within 24 hours of deficiency notification.
    - A guar-based or similar tackifier containing no artificial fibers would be used as an adhesive agent for hydraulic seeding, if needed.

Vegetation

- No vegetation would be disturbed outside of the construction limits unless prior approval is obtained from the park. Any unauthorized disturbance would result in the contractor paying for the restoration of that area using the methods set forth in the contract documents.
- Parking of equipment and private vehicles would be restricted to hardened surfaces, such as existing parking areas, to limit vegetation disturbance.
- Prior to construction work, certified weed-free coir logs or other erosion-control measures such as silt fence would be installed to form a filter barrier to trap sediments from being deposited in vegetated areas. Construction fencing would be installed to define construction limits.
- In the vegetated areas impacted for staging activities, south and east of the annex, vegetation would be cut at ground level prior to construction to protect the root zone and allow vegetation to regrow following construction.
- As appropriate, all salvageable vegetation (determined by the park plant ecologist) within the limits of construction would be removed and relocated to temporary storage (planting beds in the Paradise Picnic Area or behind the kitchen and East Wing of the Paradise Inn) during construction.

- To protect the viability of the vegetation in the project area, the following measures would be taken:
    - Replacement of excavated fill would be hand tamped back into place.
    - Plants would be protected from cutting, breaking, and skinning of roots, branches, or bark.
    - To reduce the potential of topsoil losing its important biological components, topsoil within areas to be excavated around the foundation would be stripped to a depth of 12 inches, stockpiled in windrows off-site (in a designated staging area) to a depth of not greater than 3 feet, and covered with breathable fabric.

Weed Control

- All imported erosion-control materials that are capable of harboring plant seed would be certified weed-free according to North American Weed Management Association standards to ensure that it is free of noxious weeds and accepted by the park. Subsurface rock that has not been exposed to a weed source may be acceptable upon inspection by the park. The park would inspect all local material sources prior to use or transport of materials into the park.
- For a material source provider to be considered certified weed-free, all staging areas, work areas, and facilities associated with producing the material would be inspected by a qualified government inspector, qualified park employee, or other proper officials or authority - a representative of that state's department of agriculture, a weed supervisor or weed superintendent, a university extension agent, or an individual designated by that state's laws or regulations - and determined to be free of all noxious weed and invasive plant species. To prevent introduction of noxious weeds and exotic species within the project limits, the contractor would comply with the following measures:
    - Imported large foundation rock and foundation cobble that is exported then used as the foundation veneer would be pressure washed.
    - The NPS would inspect all contractor vehicles and equipment prior to entering the park for mud, weeds, and other unwanted substances. All vehicles (includes hydroseeder truck and the inside of the tank), heavy equipment, hauling vehicles, and trailers would be pressure washed before their first entry into the park. Hauling vehicles that have previously transported weed-contaminated material would be pressure-washed before transporting clean material. Subsequent entries of hauling vehicles into the park would not require pressure washing unless the vehicle shows signs of mud, plant material, or as requested by the park.
    - Vehicle loads would be covered to reduce exposure to noxious weeds when transporting rock, soil, or other material that could contain weed seed. Excavated material, conserved topsoil, conserved rock/soil, and subexcavation material stockpiles would be covered with a breathable water-repellent fabric, which would be anchored around the perimeter to hold it in place.

Wildlife and Special Status Species

- The NPS would inform construction personnel of the occurrence and status of special status species near the project area, the potential impacts construction activities may

have on the species, and the potential penalties for taking or harming a special status species.

- The NPS would locate and move sensitive amphibians two weeks prior to excavation or use the wetlands east of the Annex.
- Sediment fences would be used to prevent amphibians from crawling into stored materials.
- The following measures would be taken to limit noise and disturbance from vehicles and construction equipment:
    - All motor vehicles and equipment would have mufflers conforming to original manufacturer specifications that are in good working order and are in constant operation to prevent excessive or unusual noise.
    - Sound attenuation devices (such as rubber strips or sheeting) would be installed and maintained on all equipment. This would include truck tail and other gate dampeners (both opening and closing) for all dump trucks used on the project.
    - Use of unmuffled compression brakes would be prohibited within park boundaries.
    - Use of air horns within the park would not be allowed except for safety.
    - Because of the proximity of northern spotted owl territories and marbled murrelet habitat, staging would not occur at the Cougar Rock Picnic Area from April 1 through September 23 (to protect nesting murrelets) and from March 15 through September 30 if nesting owls are present.
    - If tree and shrub removal is required, nesting bird surveys would be done. If nesting birds are found, tree removal would be conducted outside of the nesting season for migratory birds (September to February) to avoid disturbing or take of a bird nest.
    - Any roadkill or wildlife collisions would be reported to the park immediately.
    - Feeding or approaching wildlife would be prohibited.
    - The park wildlife ecologist would be notified if bears or foxes loiter in the project area.
    - A litter control program would be implemented during construction to eliminate the accumulation of trash. All food items would be stored inside vehicles, trailers, or wildlife-resistant receptacles except during actual use to prevent attracting wildlife.

Cultural Resources

- In the event of the inadvertent discovery of historic properties such as archaeological resources, suspected human remains, funerary objects, sacred sites, or objects of cultural patrimony, the park archaeologist and superintendent would be notified immediately. The park would follow their *Archaeological Inadvertent Discovery Plan* approved by the SHPO. Work in the affected area(s) would stop immediately until the historic properties are reviewed by the park. As appropriate, consultation with the Washington Department of Archaeology and Historic Preservation and any affected Native American tribes would also take place regarding disposition of affected artifacts and remains. During consultation, reasonable measures would be taken to protect the discovery site,

including any appropriate stabilization or covering, to ensure the confidentiality of the discovery site and to restrict access to the discovery site.

- A monitoring plan would be developed by the park for project activities that have the potential to affect archaeological resources recommended or determined eligible for inclusion on the NRHP. This plan would require an archaeological monitor to be present on-site during ground-disturbing activities in or around culturally sensitive areas as determined by the park and consulting parties including the Washington Department of Archaeology and Historic Preservation. Based on the monitoring plan, the contractor would notify the park 2 weeks in advance of conducting activities in culturally sensitive areas.
- Historic buildings and landscapes would be protected by following the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.
- Measures recommended by the SHPO would be added to this list.

Visitor Use and Experience

- The status of construction would be communicated via a number of outlets: the park website, regional newspapers, radio, entrance stations, visitor centers, news releases, local newspapers, media outlets, postings in local businesses, and via social media.
- Specific provisions would be followed to minimize adverse effects on visitors:
  - The majority of material deliveries would be made and disruptive work would be done during the week, rather than on weekends or holidays, and would occur before or after peak visitation periods.
  - Paved areas used by vehicular and pedestrian traffic would be kept clean of construction debris and soils, as necessary.
  - Staging areas and contractor access to the Annex would be managed to minimize visitor impacts.

Public Health and Safety

- Appropriate barriers and barricades would be used to clearly delineate work areas for the safety of park visitors.
- Trucks hauling debris and other loose materials would be covered to maintain adequate freeboard to prevent spillage to paved surfaces.
- Construction workers and park staff would wear appropriate protective gear such as hard hats, gloves, and goggles to protect themselves when working outside in the construction zone. Visitors would not be allowed in the construction zone.
- The following measures would be implemented for lead and asbestos abatement:
  - Where appropriate, activities conducted in interior rooms and spaces would be guided by a lead abatement investigation and removal plan. This plan would be compliant with all federal, state, and local requirements in accordance with Title 15, Chapter 53, subchapter IV Section 2688- Control of Lead-based Paint Hazards at Federal Facilities and the Occupational Safety & Health Administration standard for construction (29 CFR 1926.62).

- Where appropriate, activities conducted in interior rooms and spaces would be guided by an asbestos investigation and removal plan. This plan would be compliant with all federal, state, and local requirements and in accordance with Occupational Safety and Health standards pertaining to employee or worker exposure covered under 29 CFR 1910.100 I. Additional work practices would comply with the Construction Standard for the Asbestos Industry (40 CFR 1926.1101 or CFR Title 8 Section 1529).

Options Considered and Dismissed

The following options were considered for project implementation, but were dismissed from further analysis, as described below.

Foundation Options

Several options were considered that would have retained the existing stone foundation walls for all or a portion of the Annex, with a new concrete foundation installed behind the stone walls. Micropiles were also considered to provide additional stability to the concrete foundation behind the stone walls. These designs were dismissed because the stone foundation would continue to be subject to water infiltration and they would not provide the desired structural stability. These options also would have a greater risk of collapse during construction and would require a larger excavation area and longer construction period. Because these foundation treatments would not meet the project purpose and need, they were eliminated from detailed analysis.

Drainage System Option

An initial option for storm water and groundwater drainage would have routed surface runoff and the subsurface flow around the south end of the Annex instead of routing the underdrain flow diverted around the north end of the Annex to a separate outfall. Under this option, the surface dispersion trench elevation would be higher than the lowest portions of the foundation drainage system. This option would potentially have allowed storm drainage to flow back into the foundation. Because this drainage option would not meet the project purpose and need, it was eliminated from detailed analysis.

Window Options

Additional options were considered to rehabilitate the windows in the Annex and Snow Bridge. One option would have replaced the guest room windows in the Annex and refurbished the windows at the stairs, Snow Bridge, and basement. Another option would have repaired or reconditioned all windows except the first floor aluminum windows, which would be replaced. These options were dismissed from detailed analysis because they would not retain character-defining elements of the Paradise Inn to the same degree as the preferred alternative.

Alternative Summaries

A comparison of the no action alternative and preferred alternative, and the degree to which each alternative fulfills the needs and objectives of the proposed project, is summarized in Table 2.

Table 2. Environmental impact summary by alternative.

Impact Topic	Alternative A – No Action	Alternative B (Preferred Alternative) – Rehabilitate Paradise Inn Annex and Snow Bridge
Historic Buildings	No project-related adverse impacts on historic buildings would occur. Structural failure due to snow load or a seismic event could occur if rehabilitation is not undertaken. Structural failure of the Annex or Snow Bridge would result in an adverse effect on the Paradise Inn and the larger NHLD.	Although the preferred alternative would be beneficial in the long term by mitigating against the loss of life and structural failure, the loss of historic fabric, and the introduction of non-historical architectural elements could adversely affect the historical integrity of the Paradise Inn. Impacts would be mitigated by using compatible structural elements and through documentation of existing conditions prior to rehabilitation.
Water Resources and Wetlands	No project-related impacts on water resources or wetlands would occur.	Adverse impacts on water quality may occur during construction, but would be mitigated by implementing BMPs as described in the *Resource Protection Measures* section. Staging and access would result in fill material being placed within 0.038 acre of wetlands east of the Annex during construction. The fill material would be removed and the disturbed wetlands would be restored following construction. The preferred alternative would result in beneficial effects on water resources and wetlands over the long term following completion of the project by improving site drainage and treating drainage water before discharge.
Health and Safety	Health and safety would be adversely affected over the long term because the Annex and Snow Bridge would not be brought into compliance with modern building codes and would remain at risk of damage or collapse from a seismic event.	Increased hazards to health and safety could occur during construction. Over the long term, upgrading the fire protection, electrical, mechanical, and plumbing systems and addressing the structural deficiencies of the Annex and Snow Bridge would result in beneficial effects on visitor and employee health and safety.

Impact Topic	Alternative A – No Action	Alternative B (Preferred Alternative) – Rehabilitate Paradise Inn Annex and Snow Bridge
Visitor Use and Experience	There would be no change to visitor use and access in the short term. Over the long term, adverse impacts on visitor use and experience would result if a major structural failure or severe damage from snow loading or seismic activity were to make the Annex unfit for occupancy. Collapse or long-term closure of the Annex would result in a loss of 65% of available guest rooms at the Paradise Inn.	Construction work and closures would adversely impact visitor use and experience. In addition, noise disturbance would reduce the quality of the visitor experience during construction activities. The park would take measures to notify visitors of the status of construction activities and closures. Improving visitor safety by stabilizing the Annex, improving comfort by rehabilitating windows, reducing noise transmission between rooms by adding insulation, and restoring the historic character of the Annex and Snow Bridge would result in long-term beneficial effects on the visitor experience.
Socioeconomics	There would be no project-related changes to the socioeconomic environment. Over the long term, adverse impacts on the concessioners within the park would result if a major structural failure or severe damage from snow loading or seismic activity were to make the Annex unfit for occupancy.	Construction work and closures would have both adverse and beneficial effects on socioeconomics over the short term. Over the long term, economic effects from the preferred alternative would be beneficial by reducing the need for unforeseen closures for maintenance and repairs.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the affected environment (existing setting or baseline conditions) and analyzes the potential environmental consequences (impacts or effects) that would occur as a result of implementing the no action and preferred alternatives. Cumulative effects are analyzed for each resource topic carried forward.

Cumulative Impact Scenario

The CEQ regulations that implement NEPA require assessment of cumulative impacts in the decisionmaking process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for both the no action and preferred alternatives.

Cumulative impacts were determined by combining the impacts of the actions included in the alternatives with other past, present, and reasonably foreseeable future actions. Therefore, it is necessary to identify other past, present, and reasonably foreseeable future projects in the park that could result in cumulative impacts. Because the scope of this project is relatively small, the geographic and temporal scope of the cumulative analysis is similarly small. The geographic scope of the analysis includes actions in the Paradise area, as well as other actions in the park or surrounding lands where overlapping resource impacts are possible. The temporal scope includes future projects within a range of approximately 10 years. Several past and ongoing projects could contribute to cumulative effects, including:

- **Past rehabilitation of the Paradise Inn, 1962 and 1980–1982**. Paradise Inn has undergone past rehabilitation efforts, first in 1962, and again between 1980 and 1982. These past rehabilitation efforts did not address structural integrity issues related to the Annex and Snow Bridge.

- **Past rehabilitation and removal projects in the Paradise area.** Additional past actions included the removal of historical buildings related to Reese's Camp, the Tatoosh Club, and the Community Building, and rehabilitation efforts at the Guide House, Camp Muir, and other historical buildings within the NHL District.

- **Project to replace the Jackson Visitor Center, rehabilitate the upper and lower parking areas, and rehabilitate the Paradise Inn, 2006–2009**. The park completed construction of the Henry M. Jackson Memorial Visitor Center at Paradise from June 2006 to October 2008 and demolition of the H.M. Jackson Visitor Center in 2009. Past rehabilitation of the Paradise Inn and East Wing occurred from 2006 to 2008.

- **Camp Muir rehabilitation, 2013–ongoing.** Camp Muir, which is accessed from the Paradise area, was rehabilitated by replacing non-historic structures with new structures compatible with the Camp Muir Historic District (NPS 2012a). The functions of

structures were optimized to improve visitor and employee safety while protecting natural resources, adjacent wilderness, and the NHL District.

- **Nisqually to Paradise Road project, 2014–2017.** The Nisqually to Paradise Road project consists of resurfacing, restoring, and repairing 17.6 miles of the road between the park's Nisqually entrance and the Paradise area (NPS 2012b). The project also includes paving the 1.0-mile Ricksecker Point spur loop and the 2.2-mile Paradise Valley Road.

- **Stevens Canyon Road project, 2011–2012.** About 10 miles of Stevens Canyon Road was repaired because of deteriorating road conditions and structural deficiencies (NPS 2010). This work was similar in nature to the Nisqually to Paradise Road project. The Stevens Canyon Road repair work began at the intersection with State Route 123 and ended at the intersection with the Nisqually to Paradise Road.

No future projects that may cumulatively impact park resources are planned at this time. Ongoing maintenance activities such as road maintenance, plow operations, and maintenance and repairs of buildings in the Paradise area would continue.

Historic Buildings

Affected Environment

Paradise Inn was initially built in 1916–1917 by the Rainier National Park Company. The Annex was added in 1920 to accommodate increased visitation; the Snow Bridge was added sometime in the 1920s as an open structure linking the east wing of the Inn to the Annex. The mezzanine was added in 1925 and the entire Inn was subject to extensive remodeling in 1935 and again in 1962. The National Park Service acquired the Inn in 1952. Major rehabilitation work, including structural, mechanical, electrical, and architectural, took place between 1980 and 1982. The East Wing was renovated in 1996. Work completed from 2006 to 2008 included rehabilitation of the main Inn and East Wing.

The EA for the *Project to Replace the Jackson Visitor Center, Rehabilitate the Upper and Lower Parking Areas, and Rehabilitate the Paradise Inn* (2005 EA) provides a detailed historical overview and construction history of the Inn (NPS 2005). The Paradise Inn, including the Annex and Snow Bridge, is an outstanding example of rustic style architecture. Paradise Inn was designated a National Historic Landmark in 1987 and is a contributing component to the Mount Rainier NHLD, designated in 1997. The NHLD includes most of the roads, the Wonderland Trail, developed areas, and buildings in the park including backcountry structures. The NHLD is significant for its association with early NPS master planning and the use of naturalistic, rustic, landscape architecture.

Mount Rainier National Park was the first national park to be designed under a park servicewide comprehensive development plan and the Paradise Inn was the first building designed and constructed under the sole concessioner concept devised by Stephen Mather, the first NPS director (Zaik/Miller/DiBenedetto 2000).

Environmental Consequences

Impacts of Alternative A – No Action

Under the no action alternative, no rehabilitation to the Annex or Snow Bridge would take place and there would be no changes to any of the character-defining Rustic style elements of the Annex and Snow Bridge that contribute to the building's significance. However, long-term adverse effects on these historic buildings could occur from a structural failure due to snow load or a seismic event if rehabilitation is not undertaken. Failure would likely take the form of damage severe enough to render the Annex and Snow Bridge unfit for human habitation, although complete collapse of the Annex and Snow Bridge buildings also could occur. Structural failure would irretrievably alter the historical character of Paradise Inn and would constitute a long-term adverse effect on the Paradise Inn and the larger NHLD.

Cumulative Effects – Paradise Inn has undergone past rehabilitation efforts, first in 1962 following acquisition by the NPS, again between 1980 and 1982, and most recently from 2006 to 2008 when upgrades occurred to the interior. Past rehabilitation efforts were beneficial to restoring the historical fabric of the Paradise Inn, but these past rehabilitation efforts did not address structural integrity issues related to the Annex and Snow Bridge. Other past actions include the removal of historical buildings, including Reese's Camp, the Tatoosh Club, and the Community Building, and rehabilitation efforts at the Guide House, Camp Muir, and other historical buildings. The removal of historic buildings affected the cultural landscape by altering the interrelationship of the NHLD, while past rehabilitation efforts did not maintain rustic style architecture. These past actions have adversely affected the NHLD. Over the short term, the no action alternative would have no effect on the Annex or Snow Bridge and, therefore, would not contribute to the effects of other actions. However, without rehabilitation, the Annex and Snow Bridge could be impacted by a structural failure, which would result in substantial adverse effects on the Inn and the NHLD. When the effects of the no action alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on historic buildings would be substantial and adverse.

Impacts of Alternative B (Preferred) – Rehabilitate Paradise Inn Annex and Snow Bridge

Under the preferred alternative, the Annex and Snow Bridge would be rehabilitated to meet structural standards including installing a new concrete foundation for the Annex. The existing rubble foundation would be replaced with a replica veneer created by cutting the backs of the existing stones and surfacing the new concrete foundation. The extension of roof lines, while altering the historical architectural integrity of Paradise Inn, would largely be obscured from view and would be absorbed into the larger architectural fabric of the building. Given the size of the structure, the extension of a roof line would alter a very small portion of the overall building. Much of the rehabilitation work would also take place at or below ground level, which would be largely obscured from public view and would not diminish character-defining architectural elements or the aesthetic quality of the structure, nor result in the diminishment of the structure's rustic style architecture. Proposed rehabilitation work would not introduce visual elements incompatible, out of scale, or out of character with the aesthetics or character of the structure. Although these architectural elements contribute to the historic architectural character of the Annex and Snow Bridge, the effects would be beneficial in the long term by mitigating against the loss of life and potential for structural failure. However, the loss of historic

fabric and introduction of non-historic architectural elements could adversely affect the historical integrity of Paradise Inn and would be mitigated with compatible structural elements and through documentation of existing conditions prior to rehabilitation.

Under the preferred alternative, rehabilitation work within the interior of the Annex and Snow Bridge would include adding shear walls and replacing failing structural members to improve structural integrity; repairing and reconditioning the windows to maintain their historical workmanship, materials, and feeling; replacing the wood paneling with historically compatible fabric (i.e., materials); removing the suspended acoustical ceiling to restore the historic appearance; and upgrading the electrical, plumbing, and fire sprinkler systems. The removal of the crown molding during rehabilitation would be replaced following rehabilitation. Rehabilitation would enhance the historical integrity of the building interior by restoring the feeling of Rustic style architecture. Overall, the aspects of materials, workmanship, design, and feeling would be restored; and the interior would once again be compatible with the original Rustic style architecture and historical fabric of the larger Paradise Inn. Proposed interior rehabilitation would benefit the Paradise Inn by preventing structural loss, restoring the historical fabric, and providing long-term preservation of a nationally significant building.

Rehabilitation work proposed under the preferred alternative would follow the Secretary of the Interior's Standards for the Treatment of Historic Properties (NPS 1995) and would further follow any stipulations provided by the Washington SHPO and the Advisory Council on Historic Preservation. Potential adverse effects from rehabilitation may require resolution through a Memorandum of Agreement with the SHPO, which may result in a recommendation for a Historic American Building Survey or other documentation. Character-defining architectural elements would be preserved or replaced in-kind through similar design and like materials.

Cumulative Effects – Past, present, and reasonably foreseeable actions have contributed long-term adverse effects from past rehabilitation of the Paradise Inn, Guide House, Muir Camp, and from the removal of historical buildings within the NHLD, as described above for the no action alternative. Rehabilitation of the Annex and Snow Bridge would contribute adverse cumulative effects from introducing non-historical architectural elements to the exterior of the Annex and Snow Bridge. However, rehabilitation would also result in long-term beneficial effects by protecting historic buildings from structural failure due to snow load or seismic activity. Without rehabilitation, a structural failure could result in an adverse cumulative effect from building condemnation or even partial collapse. When the effects of the preferred alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on historic buildings would continue to be adverse, with a small adverse contribution from the preferred alternative.

Water Resources and Wetlands

Affected Environment

The project area is within the Paradise River watershed and any surface water or groundwater drains to the Paradise River. The Paradise River, which originates in the glacial terrain of Mount Rainier, is a small, short, braided, and swift river that is the first major tributary of the Nisqually

River. About 80% of the total annual precipitation occurs from mid-October through April. At the Paradise Ranger Station, annual precipitation ranges from 70 to 152 inches and averages 112 inches per year (Western Regional Climate Center 2015). Rain-on-snow events occur typically between November and March, and account for nearly all major runoff/flooding events in the area (GeoEngineers, Inc. 2007). There are typically two peak runoff periods – the first caused by autumn storms in November and the second that occurs in late spring/early summer during snowmelt runoff. The low-flow period usually occurs in August and September, when flow is maintained by groundwater discharge and glacial melting.

Due to an abundant water supply in the Paradise River watershed, there are visible small stream channels and a high groundwater table at the project site. The direction of surface runoff from impervious surface areas and wetlands is generally to the southeast, where water is directed into a culvert that goes under Paradise Valley Road and discharges into a stream that flows about 0.4 mile to the wide channel of the Paradise River (Figure 11). Some surface water and groundwater also flows toward the Annex building, and seeps into the Annex basement.

Some of the streams on Mount Rainier carry large amounts of glacial sediment and are very turbid, but the Paradise River is a clear stream, with very low turbidity concentrations. When sampled, it was apparent that the water quality of the Paradise River was influenced by warm mineral springs at the headwaters and that most concentrations of water quality variables decreased downstream (with total kjeldahl nitrogen and nitrate being the exception) (Larson et al. 1990; Moran and Samora 2008). Total phosphorus concentrations were somewhat high, particularly at the uppermost sampling location. In general, the water quality of the Paradise River is excellent. The water that flows off-site from the project area is not treated, and there is often sand and gravel in the runoff.

About 1.36 acres of wetlands occur near the Paradise Inn in low areas and adjacent slopes where snow persists late into the growing season, generally north, east, and south of the Paradise Inn and Annex (Figure 11; ERO 2015). The water source for the wetlands is snowmelt and surface runoff from the watershed to the north. Snow persists until mid-August in some years. Snow removal activities from parking areas may also contribute additional snow to the wetlands. Snow that is removed from the parking areas during the winter forms very large piles in the areas surrounding the lots, such as Wetland 3, south of the Annex.

Vegetated wetlands north, east, and south of the Paradise Inn and Annex include scrub-shrub wetlands and emergent wetlands. A small area of forested wetland with a sparse overstory of subalpine fir (*Abies lasiocarpa*) is also east of the Annex, within Wetland 1. The wetlands are typically saturated at the surface during the growing season. Common plant species in the wetlands include Idaho bent (*Agrostis idahoenis*), black alpine sedge (*Carex nigricans*), and Barclay's willow (*Salix barclayi*). Other species include showy sedge (*C. spectabilis*), mountain sedge (*C. scopulorum*), rushes (*Juncus* sp.), Lewis' monkeyflower (*Mimulus lewisii*), Gray's licorice root (*Ligusticum grayi*), arrowleaf groundsel (*Senecio triangularis*), mountain bog gentian (*Gentiana calycosa*), mountain cinquefoil (*Potentilla flabellifolia*), and many other species.

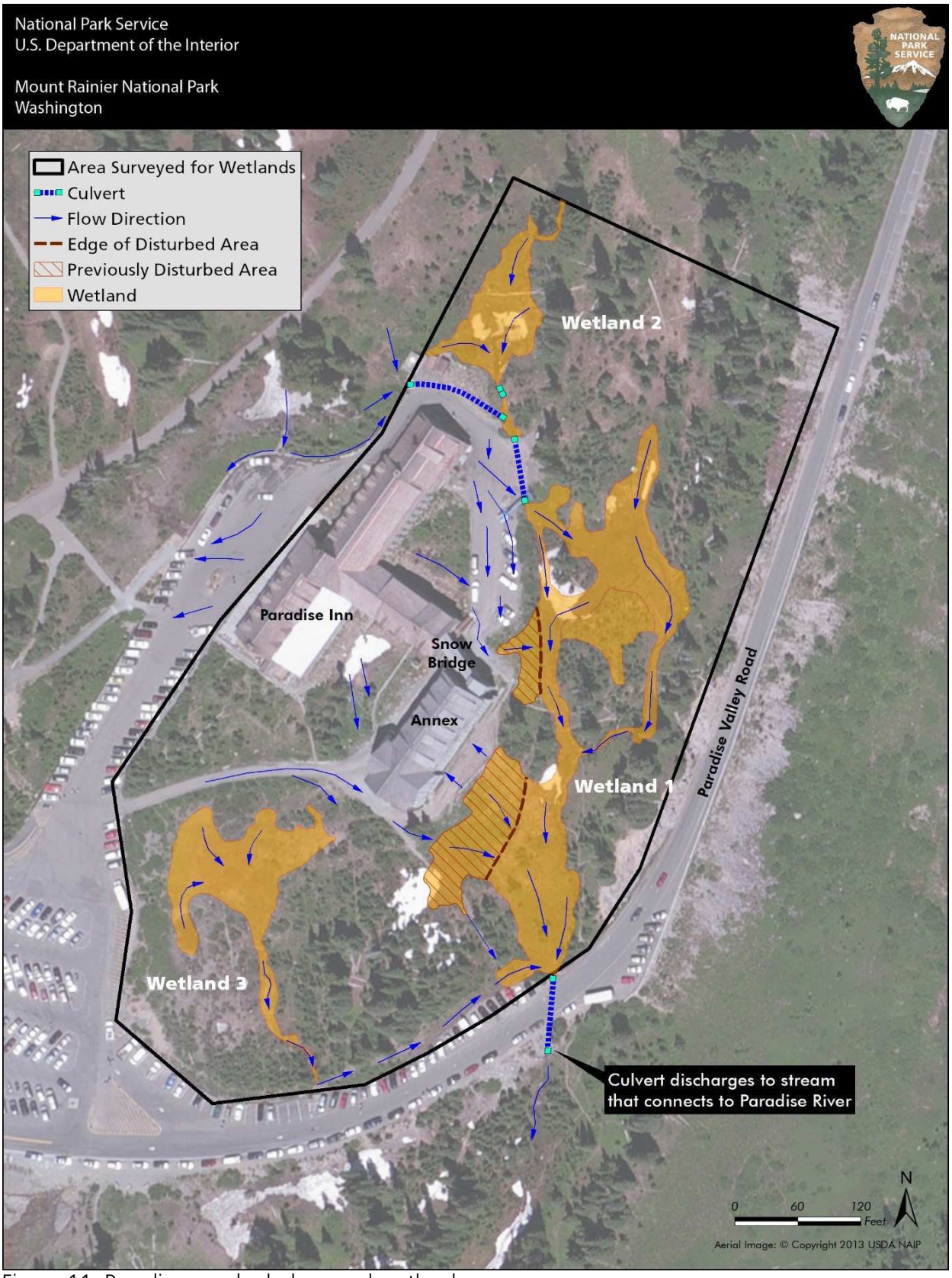


Figure 11. Paradise area hydrology and wetlands

The portions of Wetland 1 closest to the Paradise Inn and Annex to the east have been directly and indirectly affected by past disturbance associated with original construction of the building (Figure 11). Wetlands south of the Annex (Wetland 3) also were likely disturbed by past activities such as staging of materials. The remainder of the wetlands near the project area (Wetland 2 and most of Wetland 1) is relatively natural and undisturbed. The wetlands near the project area perform a variety of wetland functions including functions such as improving downstream water quality by receiving and retaining pollutants, hydrologic functions such as the potential for the wetland to reduce flooding and erosion by storing water, and wildlife habitat functions. The relatively undisturbed wetlands near the project area (Wetland 2 and most of Wetland 1) provide moderate to high functions for wildlife because of the presence of breeding populations of Cascades frogs and tailed frogs (see *Issues and Impact Topics Considered but Dismissed from Further Analysis*).

Environmental Consequences

Impacts of Alternative A – No Action

Under the no action alternative, no improvements to the Annex and Snow Bridge would occur and current conditions would continue unchanged. Ongoing minor repair activities would continue. There would be no changes to surface water runoff drainage in and around the Annex or groundwater movement toward the Annex. No construction requiring dewatering of the groundwater table would occur. There would be no effects on water quantity or water quality. No project-related ground disturbance with the potential to adversely impact wetlands or other waters would occur. Wetlands in the project area would continue in their present state and would not be affected. The no action alternative would have no adverse impacts on water quality, water quantity, or wetlands.

Cumulative Effects – Although other past, present, and reasonably foreseeable future actions have affected, or could have the potential to affect water resources and wetlands, the no action alternative would have no impacts and, therefore, there would be no cumulative impacts.

Impacts of Alternative B (Preferred) – Rehabilitate Paradise Inn Annex and Snow Bridge

Water Resources

During construction, there may be adverse effects on water quality at the project site and staging areas due to short-term increases in sediment load in runoff during precipitation events and spring snowmelt from disturbed areas. Dust from construction may enter nearby surface water.

Prior to beginning construction, a UPPP would be developed, and the construction contractor would implement sediment-, erosion-, and pollution-control measures. Measures to control sediment releases from the construction site and staging areas would protect water quality and are described in the *Resource Protection Measures* section of this EA. BMPs would be consistent with the State of Washington's Stormwater Management Manual for Western Washington (Washington State Department of Ecology 2014). BMPs would be regularly inspected and maintained by the party responsible for implementation of the UPPP.

After project completion, stormwater would be more efficiently captured and routed from the Annex and the general project area to the dispersion trench, which would discharge water via

the subsurface to the wetland area below the trench. Sediment from the parking areas and roads would be captured in the catch basins and removed, improving downstream water quality. Organic compounds and metals from the parking areas, roads, and rooftops that may be in the runoff would be sequestered by infiltration as the water moved from the dispersion trench through the ground. The catch basins and dispersion trench would be regularly inspected and maintained to ensure they do not become clogged and stop working. Water that had flowed toward the Annex and infiltrated into the basement would now be routed to the dispersion trench. The volume of water reaching the adjacent wetland may slightly increase, but would not change to a detectable degree. The volume of water to the stream that the culvert discharges to, which flows into the Paradise River, would not change to a detectable degree. Discharge from the footing drain would be monitored to ensure that erosion is minimized below the footing drain outlet. If needed, erosion-control structures would be installed below the culvert and footing drain outfalls. The beneficial chemical and physical effects on water resources would be localized and measurable, but would be negligible on a watershed scale.

Wetlands

Foundation and drainage work would occur primarily within existing disturbed areas. Direct impacts on wetlands would occur from placing fill materials in wetlands east of the Annex during construction for access and staging (Figure 12). Up to 0.007 acre of Wetland 3 and up to 0.031 acre of the previously disturbed portion of Wetland 1 would be temporarily filled. Mats or fabric would be placed on the ground surface and vegetation would be trimmed at ground level as described in the *Resource Protection Measures* section prior to use of the wetlands for staging. All fill material would be removed following construction, and wetlands would be revegetated as described in the *Resource Protection Measures* section. Wetland functions provided by the impacted wetland area, primarily habitat for amphibians and other wildlife, would be temporarily unavailable during construction and would be restored following construction. Restoration of wetland functions to preconstruction conditions likely would take several years and would occur as wetland vegetation reestablishes in the disturbed area. Wetland impacts are considered minor, given that the temporary impacts would be restored to preconstruction conditions after about 3 to 5 years and the impact would be less than 3% of the wetlands bordering Paradise Inn and a small fraction of the wetlands common in the park.

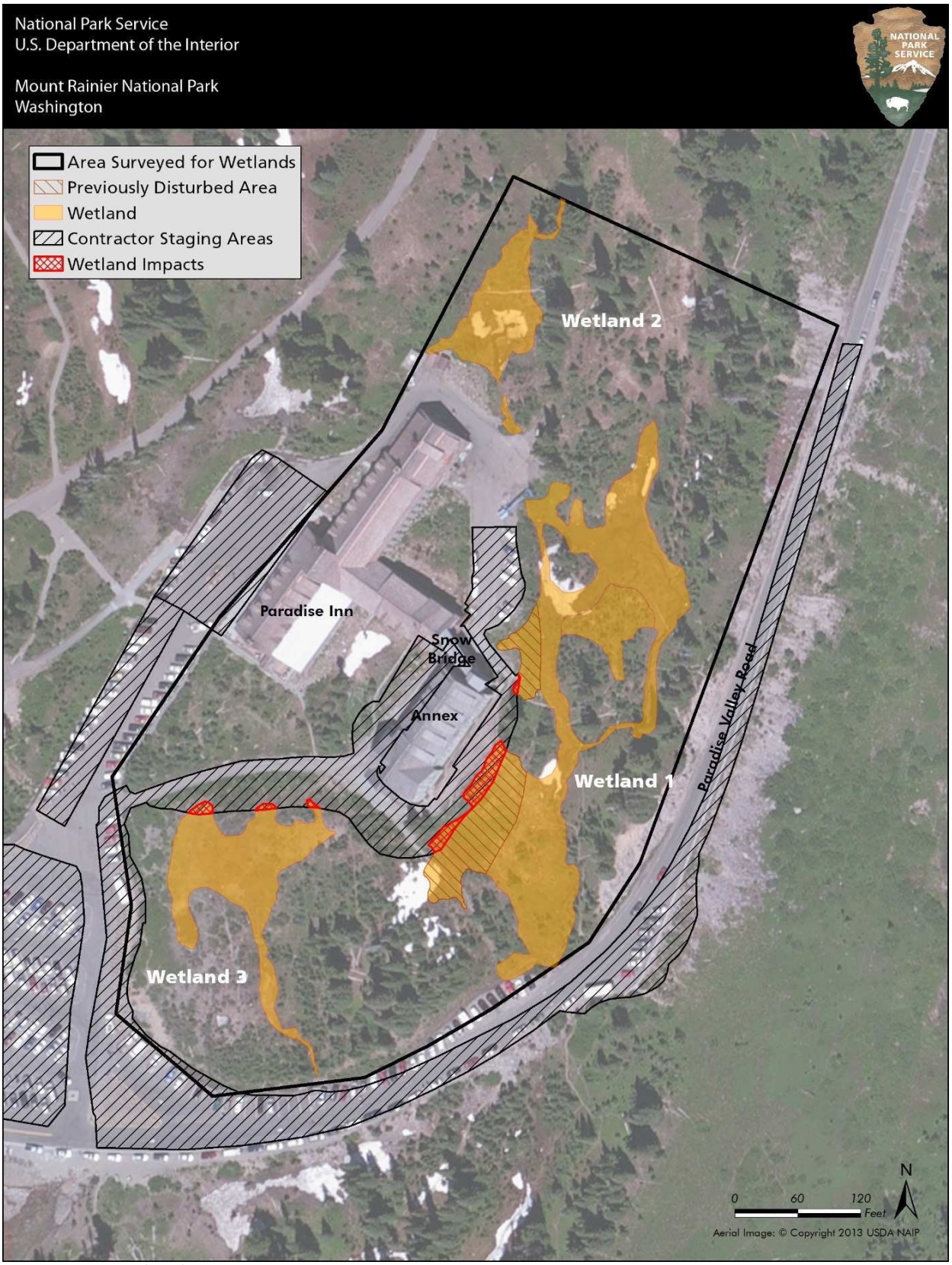


Figure 12. Wetland impacts

Erosion-control BMPs would be used to capture or redirect sediments from entering downslope wetlands during foundation and drainage work. During and after construction, the dispersion trench would disperse point flow from the storm drainage system and maintain the historic flow patterns to wetlands east of the Annex. The volume of flow to the wetlands would likely increase slightly, resulting in possible expansion of the wetland area and benefit to wetland vegetation favoring slightly more saturated conditions. Increases in pollutants (sediment, organic compounds, and metals) entering the wetlands due to the additional stormwater flow are possible, but would likely be negligible due to the filtering effect of the dispersion trench. New wetlands would likely develop below the outfall from the foundation drain. Overall, drainage improvements that reduce sediment and pollutants reaching wetlands downstream from the project area would have beneficial effects on wetlands over the long term.

NPS Wetland Protection Guidelines, DO #77-1 (NPS 2012c) describes procedures that must be followed for projects with potential adverse effects on wetlands. A Wetland Statement of Findings was not prepared because the drainage improvements proposed under the preferred alternative are considered maintenance, repair, or renovation of currently serviceable facilities, and are excepted from requirements to prepare a Statement of Findings under DO #77-1 because impacts on wetlands would be less than 0.1 acre.

Cumulative Effects – Several past and ongoing projects contributed to cumulative effects on water resources and wetlands. Replacement of the Jackson Visitor Center, rehabilitation of the upper and lower parking areas, and rehabilitation of the Paradise Inn included implementation of stormwater management measures, rerouting of water away from the Inn foundation, and the use of new water-saving technology at the new visitor center. These actions altered stormwater movement in the Paradise area, improved stormwater quality leaving the Paradise area, and reduced water use at the new visitor center. These actions contributed negligible beneficial physical and chemical effects on water resources within the Paradise River watershed. The ongoing Nisqually to Paradise Road project, which is partly within the Paradise River watershed downstream of the project area, had negligible adverse effects on wetlands from temporary disturbance of wetlands to replace culverts. Over the long term, the Nisqually to Paradise Road project would have beneficial effects on water resources and wetlands by increasing the conveyance capacity of drainage structures, improving and restoring hydrologic functions, reducing erosion, and protecting water quality. The Stevens Canyon Road project, a small part of which was in the lower Paradise River watershed, had beneficial effects on water resources within the Paradise River watershed by improving the stormwater drainage system along Stevens Canyon Road, reducing erosion, and slightly reducing stormwater runoff from the road. The Camp Muir Rehabilitation project, which occurred inside the Paradise River watershed, did not affect water resources or wetlands. Overall, past and present actions have had beneficial effects on water resources and wetlands.

The preferred alternative would contribute adverse cumulative effects on water resources during construction, and beneficial chemical and physical effects on water resources after construction, but these impacts would be negligible at the watershed scale. The temporary loss of 0.038 acre of wetlands during construction would have an adverse contribution to cumulative impacts, but because the area affected would be small, the impacted wetlands have been previously disturbed, and impacts would be temporary, there would be a negligible loss of wetland functions at the watershed scale.

When the effects of the preferred alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on water resources and wetlands would continue to be beneficial, with a negligible adverse contribution from the preferred alternative during construction.

Health and Safety

Affected Environment

The Paradise Inn Annex and Snow Bridge have been weakened by excessive snow loading and by seismic events over its 95-year history. The Annex is not structurally fortified to withstand the intensity of a seismic event that could occur in the Paradise area. Some minor stabilization activities were done in the 1930s and 1980s; however, these improvements would be ineffective for supporting the structure in a moderate seismic event.

The Annex and Snow Bridge do not meet best professional standards for structural stability and fire escape routes. The electrical and fire protection systems are aging and the risk of system malfunction poses a threat to visitor and employee health and safety.

A 1996 structural assessment found a general lack of anchorage between primary structural members (AHBL 1996). The Annex needs foundation work, a storm drain and groundwater diversion system to divert groundwater and surface water away from the building, the installation of shear walls and plywood diaphragms throughout the building (for lateral and vertical support), code-compliant plumbing and electrical systems, and updated doors and corridor walls to comply with fire and life/safety codes.

Environmental Consequences

Impacts of Alternative A – No Action

Continued use of the Paradise Inn with no structural stabilization or rehabilitation of the Annex and Snow Bridge would continue to pose a potential safety risk to visitors and staff from the danger of structural failure. The typical maintenance activities for the building would take place on an as-needed basis, until it is no longer safe or practical to do so. The electrical and fire protection systems would be tested and upgraded as legally required in the future. However, existing systems are no longer code-compliant and, therefore, failure to update these systems poses risks to the health and safety of visitors and park personnel. The no action alternative would result in adverse impacts on health and safety over the long term.

Cumulative Effects – Several past and ongoing projects in and near the Paradise area have contributed to cumulative effects on visitor and employee health and safety. These projects include replacement of the Jackson Visitor Center and rehabilitation of the Paradise Inn and upper and lower parking areas, rehabilitation of Camp Muir, repair of Stevens Canyon Road, and restoration and repair of the road between the Nisqually entrance and the Paradise area. These projects have resulted in long-term beneficial impacts on health and safety from repairing and rehabilitating park infrastructure to improve visitor and employee safety. The no action alternative would potentially result in health and safety risks to visitors and park staff over the

long term. When the effects of the no action alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on health and safety would continue to be beneficial, with an adverse contribution from the no action alternative.

Impacts of Alternative B (Preferred) – Rehabilitate Paradise Inn Annex and Snow Bridge

The preferred alternative would include structural stabilization work to bring the Annex and Snow Bridge up to best professional standards and safety compliance. Structural improvements and upgrading fire protection, electrical, mechanical, and plumbing systems would address the deficiencies of the Annex and Snow Bridge, which would improve visitor and employee safety after construction is complete.

Implementing the preferred alternative could produce low levels of safety risk to visitors, staff, and contractors during construction. The use of construction equipment, increased truck traffic, and brief interference with traffic flow could produce potential hazards. Risks would be limited by providing information on the actions to visitors, placing barriers near construction zones, controlling traffic, and following standard construction safety practices. In addition, measures would be implemented for lead and asbestos abatement in order to protect employees and contractors.

Cumulative Effects – As described for the no action alternative, past and ongoing projects in and near the Paradise area have been implemented to improve visitor and employee safety, while protecting park resources, resulting in long-term beneficial effects on health and safety. Over the long term, the cumulative effects on public health and safety associated with the preferred alternative would be beneficial. When the effects of the preferred alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on health and safety would be beneficial.

Visitor Use and Experience

Affected Environment

Located within an hour and a half of Puget Sound and its large metropolitan area, the park had nearly 1.3 million recreation visitors during 2015 (NPS 2016). The Paradise area receives the most visitor use of any area in the park. An estimated 70% of park visitors come to the Paradise area, about 900,000 visitors annually (NPS 2013a). In a typical year, the highest visitation rates occur June-September, peaking during July and August. Figure 13 shows a comparison of total monthly visitation for 2013, 2014, and 2015 (NPS 2016).

With its combination of incomparable mountain views, natural resources, and historic landscapes, Paradise offers the classic national park experience. Visitors can participate in a wide range of educational and recreational experiences, including scenery and wildlife viewing, photography, hiking, climbing, picnicking, wayside exhibits, interpretive talks, and ranger-guided hikes. The Paradise area is characterized by subalpine terrain and a network of hiking trails. According to the 2012 visitor study, 76% of visitor groups in the park hiked developed area trails in Paradise (NPS 2013a).

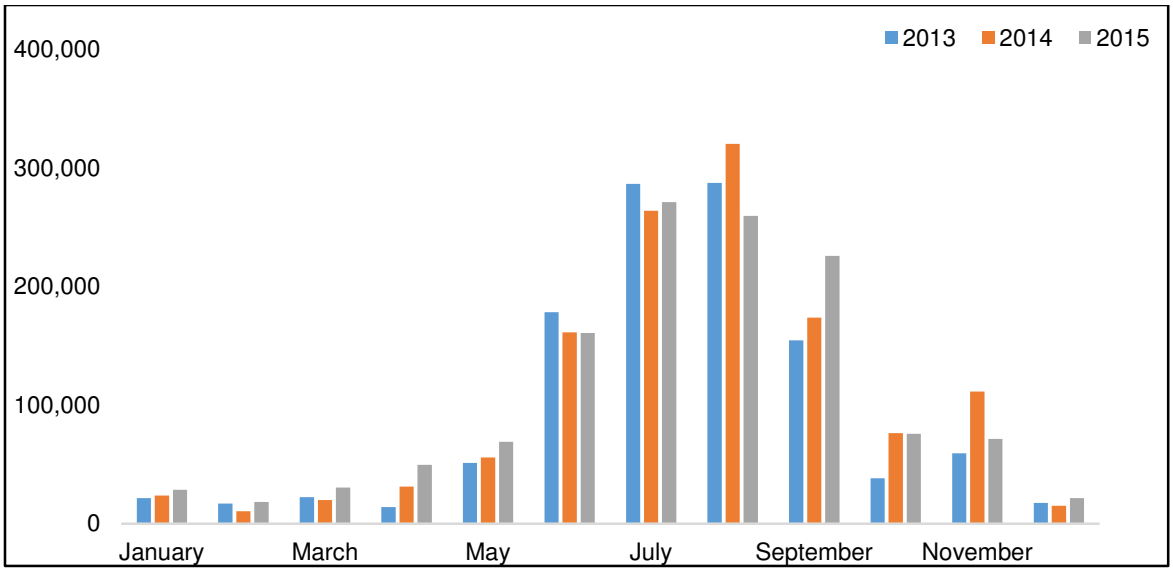


Figure 13. Total monthly park visitation, 2013–2015.

In addition to hiking trails, Paradise has a variety of visitor services, including the Jackson Visitor Center, Paradise Inn (lodging and restaurants), Guide House (hiker/climber information), and picnic areas. According to the 2012 visitor study, the commercial services and facilities most commonly used by visitor groups in the park were 1) food service at Paradise Inn (33%), 2) gift shops at the Jackson Visitor Center (32%), and 3) gift shops at Paradise Inn (30%) (NPS 2013a).

The Jackson Visitor Center is the initial point of contact for visitors to the Paradise area, a place to obtain information on where to go and what to see and do. It is among the top three of information services and facilities most commonly used by visitor groups in the park (NPS 2013a). The Paradise area is the primary park destination for snowplay activities, skiing, and winter hiking and climbing. In the winter, the Jackson Visitor Center is open weekends and holidays, but the Paradise Inn, Paradise Guide House, and Paradise Ranger Station are closed, restricting many visitors to day use activities during this season.

The Paradise Guide House and Paradise Ranger Station serve as the starting point for mountain climbers on the south summit routes. These abundant opportunities mean that the Paradise area attracts high levels of visitation, which, in turn means that visitors can experience a high degree of social interaction while in this area.

The Paradise Inn and Annex provide many necessary amenities for visitors to the Paradise area, including 121 guest rooms, a restaurant, lounge, snack bar, gift shop, and restrooms. The Annex contains the majority of the guest rooms (79). The Inn is the only lodging available in this area of the park and is open only from late spring to early fall. Rooms are usually fully reserved between July and August. Those who stay at this park hotel have the unique experience of spending the night in a historic (nearly 100-year-old) grand lodge within the sanctuary of the park boundaries. The spacious Main Lobby, which provides couches and chairs near the two grand fireplaces, is used by guests of the Inn and other park visitors. Most visitors who stay at the Paradise Inn are in parties of two and stay an average of 2.3 days (NPS 2005). Table 3 shows total monthly overnight stays at the Paradise Inn in 2013, 2014, and 2015.

Table 3. Monthly overnight stays at Paradise Inn, 2013–2015.

Month	2013	2014	2015	3-year Average (rounded)
May	985	1,359	1,906	1,420
June	5,407	5,407	6,567	5,800
July	8,050	8,287	8,044	8,130
August	8,193	8,167	7,881	8,080
September	6,260	6,342	6,761	6,450
October	0	868	792	550
Total	**28,895**	**30,430**	**31,951**	**30,430**

Source: NPS 2016.
Note: The Paradise Inn is closed for the winter season (usually November–April).

The Nisqually entrance is 18 miles to the west of the Paradise Inn and provides the most convenient access to the Paradise area. The Paradise area is accessed from the Nisqually to Paradise Road via a two-way loop road up to the Jackson Visitor Center, continuing up to and past the Paradise Inn/Guide House area. Visitors arrive at the Jackson Visitor Center and park in the adjacent lot. The total public parking available at Paradise is 469 spaces. The adjacent Paradise Picnic Area (70 tables and 4 comfort stations) is open in summer for drive-in picnicking and can accommodate parking for up to 200 cars. The picnic area is used in the winter for cross-country skiing and snowshoeing (NPS 2005).

According to surveys, the ability to get from one place to another within the park contributes greatly to visitors' perception of their experience in the park (NPS 2001). Parking at Paradise often exceeds capacity on peak weekend days, and bus and recreational vehicle spaces are in short supply. Some visitors may drive up the steep winding road only to find no parking, and may have to park along the Paradise Valley Road. Parking problems also make it more difficult for visitors with disabilities to access the facilities at Paradise (NPS 2005).

Environmental Consequences

Impacts of Alternative A – No Action

Visitor experience under the no action alternative would not differ from current conditions as described in the *Affected Environment* section. The Paradise Inn (including the Annex) would continue operating at its current schedule of late spring to early fall, accommodating hotel guests and visitors with the available amenities offered there. In the event of major structural failure or damage so severe that the structure is not safe for human habitation, the Annex would be closed to visitor use and the building would not be repaired. The continued use of the aging facility in a seismically active location and lack of preventive stabilization work could result in the loss of the resource. Loss of the Annex would reduce overnight capacity at the Paradise Inn from 121 to 42 guest rooms, a permanent loss of 65% of available rooms. This loss of overnight capacity would adversely impact visitor use and experience in the Paradise area during the summer months when the Paradise Inn is open. Of the approximately 900,000 visitors to the Paradise area every year, about 30,000, or 3%, stay overnight at the Paradise Inn. A loss of 65%

of the rooms at Paradise would affect about 2% of the visitors to the Paradise area. Day users of the Paradise area would not be affected. Paradise would continue to be the primary winter destination in the park; winter use of the Paradise area would not be affected because the Inn is not open during the winter. In the context of overall year-round use, the loss of 65% of the rooms at the Paradise Inn would be a minor impact on the visitor experience.

Cumulative Effects – Several past and ongoing projects in and near the Paradise area have contributed to cumulative effects on visitor use and experience. These projects include replacement of the Jackson Visitor Center and rehabilitation of the Paradise Inn and upper and lower parking areas, rehabilitation of Camp Muir, repair of Stevens Canyon Road, and restoration and repair of the road between the Nisqually entrance and the Paradise area. These projects have resulted in adverse impacts on visitor use and experience from increased traffic and congestion associated with construction and road closures, as well as limited access to certain areas during construction activities since construction work on the Jackson Visitor Center and Paradise Inn began in 2006. However, the long-term impacts of these projects on visitor use and experience are beneficial because these projects optimize park structures and roads to improve visitor use and access, while protecting park resources. Because there would be no new impacts, unless the Annex were to fail, there would be no cumulative impacts on visitor use and experience under the no action alternative. If the Annex were to experience structural failure, resulting in the loss of 65% of available guest rooms at Paradise, the no action alternative would result in minor adverse cumulative effects on visitor use and experience. When the effects of the no action alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on visitor use and experience would continue to be beneficial, with a minor adverse contribution from the no action alternative if structural failure were to occur.

Impacts of Alternative B (Preferred) – Rehabilitate Paradise Inn Annex and Snow Bridge

Under the preferred alternative, the Annex and Snow Bridge would be closed to visitors from August through October 2017 and from May through October 2018 (the Paradise Inn is normally closed to visitors in the winter from November through April). Although the Inn would remain open during construction, overnight accommodations would be reduced in the summer as the Annex contains the majority of the rooms. For visitors staying in the Inn during the summer months while the Annex is closed, noise disturbance would likely result from project activities. Mitigation measures, including restricting external noise (such as from staging, loading, and unloading) to daylight hours, would minimize impacts on overnight visitors. Noise disturbance and dust from construction activities are anticipated for all Paradise area visitors year-round until construction is completed.

Staging, access, and contractor parking areas would occur at several locations inside and outside of the park. This would limit visitor parking in the Paradise area, resulting in adverse impacts on visitor use and experience during construction. Using the picnic area and lower lot for staging would decrease facilities available for visitors. Some of these areas would only be needed during the winter when the Inn is closed and visitation is low, which could help mitigate some of the adverse effects. In addition, the majority of the Jackson Visitor Center parking area would be reserved for visitor use.

The Paradise Valley Road would be closed to the public periodically during summer (from August through October 2017 and from May through October 2018) to facilitate large deliveries

of construction material. The contractor would notify the NPS 72 hours prior to closures. Closures would only occur Monday through Thursday. In addition, there is some potential for minor road delays related to materials deliveries, transport of excavated soil, and during other project-related activities. To the extent possible, these activities would be identified in advance and conducted during low-use periods. Signs warning visitors of the construction work and potential traffic delays would be posted at the park entrances, visitor centers, and information centers located in gateway communities outside the park.

The Annex would reopen in summer 2019 and some elements of the restoration work would be evident in the architecture and interiors. The Annex would be structurally stabilized and able to withstand the snow loading and seismic activity typical of the Paradise area. The rehabilitation work would ensure the integrity of the historic resource and assure a safe, authentic visitor experience for future generations. Installing insulation and acoustic-resilient channels would improve the visitor experience over the long term by reducing noise between rooms. In addition, rehabilitating the drafty windows would improve visitor comfort over the long term.

Overall, rehabilitation and temporary closure of the Annex would create adverse effects on visitor use and experience from traffic and parking congestion, noise, dust related to construction, and loss of overnight capacity. These effects would be limited to the Paradise area and would be temporary, ending after completion of construction. However, the complete rehabilitation of the Inn for its enduring structural stability and the architectural upgrades to return its original historic character would result in beneficial effects expected to last for another century or longer.

Cumulative Effects – As described for the no action alternative, past and ongoing projects in and near the Paradise area have been implemented to improve park infrastructure and protect park resources, resulting in temporary adverse effects on visitor use and experience during construction. With implementation of the preferred alternative, construction would occur in the Paradise area and along the Nisqually to Paradise Road during most years since the projects to replace the Jackson Visitor Center and rehabilitate the Paradise Inn began in 2006. Once the preferred alternative and Nisqually to Paradise Road project are complete, no additional major construction projects are anticipated for several decades that would adversely impact the visitor experience. When added to the existing cumulative effects, the preferred alternative would contribute slightly to adverse cumulative effects during construction, with substantial benefits to visitor use and experience when rehabilitation is completed. When the effects of the preferred alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on visitor use and experience would be beneficial over the life of the building.

Socioeconomics

Affected Environment

The socioeconomic study area for this analysis includes the gateway communities within the Nisqually entrance region to the park, where lodging and guest services are available for park visitors, and social and economic effects from activities within the park may be observed. The study area includes Pierce County, Washington. Communities within the study area include

Ashford, Elbe, and Eatonville, Washington, all located within 30 miles of the Nisqually entrance. The socioeconomic environment includes the population dynamics, workforce characteristics, income, and employment within the Nisqually entrance region. Also included in the socioeconomics analysis is the lodging and concessioners inside the park, where effects on employment and revenues may be felt.

Major industries within the gateway communities include tourism-related services such as retail trade and arts, entertainment, recreation, accommodation, and food services. About 40% of Ashford's population is employed in the service sector and 39% of the businesses can be classified as tourism services and accommodation. These employment sectors and industries represent the largest proportion of Ashford's economy. Eatonville is located further from the Nisqually entrance and is less dependent on tourism. About 17% of Eatonville's population is employed in the service sectors, and about 5% of its businesses are tourism-related. Eatonville has a diversified economy, with no one employment or industry sector greatly overshadowing another. Management and business, and sales and office occupations together make up about 45% of Eatonville's employment sectors, while education and construction together represent about 40% of its industries.

The park represents an important economic resource in the Nisqually entrance region (NPS 2013b, NPS 2016). In 2015 more than 1.2 million recreation visitors to Mount Rainier National Park spent $45.7M in communities surrounding the park with a net impact to the economy of approximately $58.3M. This spending supported approximately 596 jobs in the local area, not including the 100-105 permanent and 175-185 seasonal staff working directly for the park and another 450-500 commercial concessions service employees working in or near the park (NPS 2016). The park anticipates another year of high visitation due in part to the celebrations and events associated with the NPS Centennial, including several weeks of fee-free days throughout 2016.

The NPS issues commercial licenses and concession contracts to operators of commercial activities within national parks under the Concessions Management Improvement Act of 1998. Within the Nisqually entrance area of the park, the Paradise Inn is operated by Rainier Guest Services, Inc. (RGS). Paradise Inn, including the Annex has a total of 121 rooms. The Annex has 79 rooms, which is 65% of rooms available at Paradise, and more than half of lodging available in the park.In 2012, visitors to the park spent an estimated $2.2 million on lodging within the park. Overall, about $13.9 million was spent by visitors inside the park. Lodging represents the largest proportion of visitor spending in the park. In 2012, visitors spent an estimated $2.2 million on lodging within the park, representing approximately 16% of total expenditures within the park (NPS 2013b). .

Environmental Consequences

Impacts of Alternative A – No Action

The socioeconomic environment under the no action alternative would not differ from current conditions. This alternative would not affect population dynamics, workforce characteristics, or income and employment in the Nisqually entrance region or in the park unless other actions are taken to change these trends.

The gateway communities of Ashford and Eatonville would experience continued economic benefits from the park and visitors. In Ashford, tourism represents a substantial part of the local economy, while tourism represents a lesser part of the economy in Eatonville. Park visitors would continue to visit these locations and access services such as lodging, food, gas, and souvenirs. If the Snow Bridge and Annex were to experience structural failure and become uninhabitable for visitors, the loss of revenue from lodging would affect RGS and would potentially lead to a shortage of rooms during peak travel times, thus leading to a loss in revenue for the gateway communities. The continued use of the aging facility in a seismically active location, lack of preventive stabilization work, and potential loss of the resource would result in long-term adverse effects on socioeconomics by adversely affecting the concessioners within the park and gateway communities.

Cumulative Effects – Several past and ongoing projects in and near the Paradise area have contributed to cumulative effects on socioeconomics. These projects include replacement of the Jackson Visitor Center and rehabilitation of the Paradise Inn and upper and lower parking areas, rehabilitation of Camp Muir, repair of Stevens Canyon Road, and restoration and repair of the road between the Nisqually entrance and the Paradise area. These projects have had a long-term beneficial effect on the regional economy from improving visitor use and access, thus potentially increasing visitor spending within the park and the Nisqually entrance region. When the effects of the no action alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on socioeconomics would continue to be beneficial with an adverse contribution from taking no action.

Impacts of Alternative B (Preferred) – Rehabilitate Paradise Inn Annex and Snow Bridge

Under the preferred alternative, the Annex and Snow Bridge would be closed to visitors from August 2017 through spring 2019. This would result in 79 fewer rooms at the Paradise Inn during the closure, resulting in lost revenue for RGS, and reduced franchise fees for the NPS. The Paradise Inn would have 42 remaining rooms, and the closure of the Annex would represent a 65% loss of guest rooms for the two seasons it would be closed for renovation. The financial impacts of the rehabilitation project were considered in the current contract, awarded to RGS in 2014. Mitigation for the loss in revenue includes an extension of the contract from 10 to 15 years.

Hotels and motels outside of the park would absorb the guests that would otherwise stay at the Annex, although a shortage of rooms in the Nisqually entrance region, and as far out as Morton and Eatonville, is possible during peak tourist season. A shortage of rooms in the peak season could lead to increased business during shoulder seasons. The short-term effects from the closure would be adverse in that there would be fewer rooms for visitors within the park and beneficial in that more visitors would stay in the gateway communities, thus possibly increasing spending outside of the park and dispersing the revenues throughout the gateway communities. No direct impacts on population dynamics are likely to be experienced from the temporary closure, nor are there anticipated effects on employment or workforce characteristics in either the short term or long term, both within and outside of the park. There may be a short-term indirect beneficial effect from construction activities to the local economy from spending, jobs, and revenues generated from the construction work itself.

There is some potential for minor road delays related to materials deliveries, transport of excavated soil, and other project-related activities. To the extent possible, these activities would

be identified in advance and conducted during low-use periods. The Annex and Snow Bridge would reopen in 2019 at full capacity, and would be able to withstand snow loading and seismic activity into the foreseeable future. Economic effects from the preferred alternative would be beneficial over the long term because the need for unforeseen closures for maintenance and repairs would be diminished.

Cumulative Effects – As described for the no action alternative, past and ongoing projects in and near the Paradise area have been implemented to improve park infrastructure and protect park resources, resulting in long-term beneficial effects on socioeconomics. When the effects of the preferred alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on socioeconomics would be beneficial over the life of the Inn.

CONSULTATION AND COORDINATION

Scoping

The NPS received 11 letters during the public review period for the original Jackson Visitor Center and Rehabilitate the Paradise Inn EA released for public comment in May 2005. Most comments were related to parking design. Internal scoping was conducted by an interdisciplinary team of professionals from the park, Denver Service Center staff, and consultants. During the scoping process, the park also held discussions with the concessioner that operates the Inn, Rainier Guest Services. Internal scoping included value analysis workshops held on March 16-17, 2011 and October 13, 2015. Team members met multiple times from 2011 through 2015 to discuss the purpose and need for the project, various alternatives, potential environmental impacts, reasonably foreseeable actions that may have cumulative effects, and resource protection measures. Over the course of the project, team members have conducted numerous individual site visits to view and evaluate the proposed construction site.

Agencies and Persons Consulted

The following agencies were contacted and invited to participate in the planning process:

- Advisory Council on Historic Preservation
- State Historic Preservation Office, Washington Office of Archeology and Historic Preservation
- U.S. Fish and Wildlife Service

The following American Indian tribes were also contacted and were invited to participate in the planning process:

- Cowlitz Indian Tribe
- Muckleshoot Indian Tribe
- Nisqually Indian Tribe
- Puyallup Tribe of Indians
- Squaxin Island Tribe
- Yakama Nation

The park received responses from the Nisqually Indian Tribe and the Squaxin Island Tribe. Both tribes expressed no current concerns related to cultural resources, and requested that the NPS monitor excavation work and to be notified if archaeological resources are encountered. A letter was received from the Washington State Historic Preservation Officer (SHPO) December 15, 2015 to formally initiate consultation, which has been ongoing. A letter was sent to the SHPO and the six American Indian tribes with release of this EA requesting concurrence with the NPS's determination of no adverse effect.

Environmental Assessment Review

This EA is subject to a 30-day public comment period. To inform the public of the availability of the EA, the NPS will publish and distribute a letter to various agencies, tribes, the park's mailing list, and local newspapers and media outlets. The EA will be available for review and comment on the PEPC website at http://parkplanning.nps.gov/mora. The EA also will be available at the following libraries, in addition to visitor center locations in the park: Buckley Library, Eatonville Library, Enumclaw City Library, Tacoma Public Library (Tacoma Branch), and Yakima Valley Regional Library. During the 30-day public review period, the public is encouraged to submit their written comments to the NPS, as described in the instructions at the beginning of this EA. Following the close of the comment period, all comments will be reviewed and analyzed prior to the release of a decision document. The NPS will issue responses to substantive comments received during the public comment period and will make appropriate changes to the EA, as needed.

List of Preparers

The following persons assisted with the preparation of this EA.

National Park Service, Mount Rainier National Park
- Randy King, Superintendent
- Tracy Swartout, Deputy Superintendent
- Karen Thompson, Environmental Coordinator
- Jared Infanger, Historical Architect
- Julie Hover, Restoration Specialist/Environmental Protection Specialist
- Arnie Peterson, Plant Ecologist
- Saylor Moss, Historical Landscape Architect
- Benjamin Diaz, Archaeologist
- Greg Burtchard, Tribal Liaison
- Scott Anderson, Biological Technician (Amphibians)
- Rebecca Lofgren, Aquatic Ecologist
- Ben Wright, Biological Technician (Fisheries)
- Darin Swinney, Acting Chief of Natural and Cultural Resources
- Roger Andrascik, Chief of Natural and Cultural Resources
- Kathy Steichen, Chief of Interpretation
- Jim Ziolkowski, Roads and Trails Supervisor
- Ian Bailey, Civil Engineer

National Park Service, Denver Service Center
- Andrea Vaughn, Project Manager
- Rexford Canady, Project Specialist
- Elaine Rideout, Natural Resource Specialist
- Greg Cody, Cultural Resource Specialist

National Park Service, Pacific West Region
- Alan Schmierer, Regional Environmental Coordinator
- Karen Cantwell, Environmental Protection Specialist

ERO Resources Corporation

Steve Butler, Project Manager
Mark DeHaven, NEPA Specialist
Barbara Galloway, Hydrologist
Sean Larmore Archaeologist
Lia Jenkins, Natural Resource Specialist
Emily Thorn, Social Scientist
Dave Hesker, Graphic Designer
Kay Wall, Technical Editor

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As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS MORA 105/132362 Printed on recycled paper

National Park Service
U.S. Department of the Interior

Mount Rainier National Park
55210 238th Avenue East
Ashford, WA 98304