

D-215 B

Development Concept Plan
Environmental Assessment

w/ FONSI 11/10/97

Sunrise

MOUNT RAINIER

National Park • Washington

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**Decision Notice
Finding of No Significant Impact
Development Concept Plan
Sunrise
Mount Rainier National Park
Washington**

MORA 315-15

The National Park Service performed an environmental assessment for improving facilities at Sunrise, Mount Rainier National Park, in accordance with the National Environmental Policy Act. The purpose of the assessment was to determine if the proposed action is a major federal action having a significant effect on the human environment and to serve as a planning aid. The assessment identified the impacts of the proposal, two alternatives, and no action.

Proposed Action

The proposed action, Alternative D, includes the following actions:

- Remove the Sunrise Lodge
- Construct a new ranger station and concession facility on the same site
- Restore the former gas station and the former pump cover for interpretive purposes.
- Realign about 200 feet of roadway and redesign the parking lot to provide 214 auto (7 handicapped), 10 pull through recreation vehicle, and 4 bus spaces. Construct 7 auto spaces (1 handicapped) adjacent to the new ranger station for concession and NPS parking. Provide a passenger drop off between the ranger station and former gas station
- Construct a landscaped entrance island with an entry sign and a scenic overlook.
- Establish a formal trail head with interpretive kiosk between the ranger station, visitor center, and picnic area and construct an interpretive kiosk and mountain overlook near the southwest corner of the parking lot.
- Convert parts of the picnic area and stockade service roads to walkway between the ranger station, comfort station, and visitor center. Construct a new walkway between the ranger station and the historic north entrance of the visitor center.

Mitigation

All stipulations of the Memorandum of Agreement, dated September 18, 1996, between the Washington State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the NPS will be implemented (Attached).

Responsible Party
Superintendent
Construction Supervisor

Handicap access will be provided to all buildings and facilities. Access to the picnic area will be provided by allowing those visitors requiring access to use the realigned service road.

Design Team (DSC)

Construction activities will be performed in a manner to prevent water pollution, erosion, and local air quality degradation, according to local and state permit requirements.

Construction Supervisor
Contractor

Vegetation removed for construction (including 50 trees) will be salvaged for revegetation and landscaping at the site. Salvage will directed by the park botanist. Details for salvage will be provided in contract specifications.

Construction Supervisor
Park Botanist

Native species dominating the adjacent plant communities will be used for revegetation. Salvaged plants will be used, as well as any additional plant material needed. Sources and species used will be approved by the park botanist. Revegetation and landscaping will be performed by park staff or a qualified contractor. Park Resource Management Design Team (DSC)

Revegetation will be initiated as soon as possible after disturbance to minimize erosion and colonization by exotic species. Construction Supervisor Park

Trees adjacent to construction activity will be protected by fencing at least 25 feet from the trunk. Construction Supervisor

Review and Comments

The assessment was available for agency and public review between July 12 and September 12, 1992.

Thirty four letters of comment were received on the proposal. Substantive comments were received from the Washington Trust for Historic Preservation, Washington State Historic Preservation Officer (SHPO), the National Trust for Historic Preservation, and the Advisory Council on Historic Preservation (ACHP). The comments indicated the agencies felt that preservation and rehabilitation of Sunrise Lodge would be cost effective and of greater benefit to the character of Mount Rainier than demolition and construction. The NPS consulted with these agencies to resolve conflicts.

A Memorandum of Agreement has been developed that stipulates procedures satisfying the concerns of the SHPO and Advisory Council. The MOA consists of the following provisions:

Until full funding is secured and plans for a new lodge approved, the NPS will maintain lodge in stable condition and protect the building against vandalism, damage, and loss by fire, consistent with Standards for Historic Preservation and carried out in consultation with SHPO .

Provide SHPO and Council with annual assessment of measures to maintain the building in a stable and secure condition at the beginning of each season and no later than July 15, commencing on the anniversary date of signature of the MOA by the Council (September 18, 1997)

Record the building according to the kind and level determined by the Historic American Buildings Survey prior to any action to demolish or substantially alter the lodge (initiated).

Deposit copies of the recordation in the Library of Congress, in the Mount Rainier National Park Archives, and with the SHPO

Interpret the story of Sunrise Lodge for park visitors. Provide SHPO with draft interpretive plan for comment at each stage of development.

Remove any hardware or other material that might be used in preserving other structures in the park. Materials will be properly stored and protected. SHPO will be provided the opportunity to comment on any plans for reuse or disposal of these materials.

The SHPO will be afforded the opportunity to participate in all phases of the design process

SHPO shall submit three names of interested parties from the public from which NPS will select one to represent the public in this process.

NPS will provide the SHPO a formal opportunity to comment on the final design of the replacement building for the lodge and other rehabilitation projects proposed for the Sunrise Historic District, including rehabilitation of the gas station, modification of the parking area, and revegetation, landscape, and trail plans.

FINDING OF NO SIGNIFICANT IMPACT

Negative environmental impacts that could occur are minor and temporary in effect.

There are no adverse impacts to public health or public safety,

No wetlands or ecologically sensitive areas would be affected. One additional acre of subalpine meadow would be developed.

Controversy regarding cultural resources has been mitigated.

The impacts are not highly uncertain and do not involve unique or unknown risks.

The action does not establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration.

The action is not related to other actions that have individually insignificant impacts but cumulatively significant effects.

Sunrise Lodge is a contributing element to the Sunrise National Historic District and a property listed in the National Register of Historic Places. It is also a contributing element to the Mount Rainier National Historic Landmark District, also listed on the National Register. Demolition, as a result, would be adverse. The National Park Service has consulted with the Washington State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP), in accord with the National Historic Preservation Act (section 106) and the Advisory Council's implementation regulations (36 CFR 800)

No adverse social or economic effects will result. There would be a reduction , but no disruption of concession services during construction.

No listed or candidate threatened or endangered species or species of concern will be affected.

Implementation of the action will not violate any federal, state, or local environmental protection law.

DETERMINATION

Based on the information developed during the environmental assessment and mitigation measures included in the proposal, the National Park Service has determined that the proposed project is not a major federal action significantly affecting the quality of the human environment. The proposed action sets no precedent and is not similar to an action that normally requires an environmental impact statement. An environmental impacts statement will not be prepared.

Recommended:

Will J. Buzple
Superintendent, Mount Rainier National Park

10/20/97
Date

Approved:

Will C. Watson
Deputy Regional Director, Pacific West Region

11/10/97
Date

MOUNT RAINIER NATIONAL PARK

MEMORANDUM OF AGREEMENT

WHEREAS, The National Park Service (NPS) has determined that removal and replacement of Sunrise Lodge in Mount Rainier National Park, Washington, as proposed in the draft "Development Concept Plan/Environmental Assessment: Sunrise, Mount Rainier National Park" (August 1993), will have an effect upon a property listed in the National Register of Historic Places and has consulted with the Washington State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f), and Section 110 of the same Act (16 U.S.C. 470-2); and

WHEREAS, the NPS has afforded the public the opportunity to comment upon the undertaking;

NOW, THEREFORE, NPS, SHPO, and the Council agree that replacement and removal of Sunrise Lodge at Mount Rainier National Park shall be implemented in accordance with the following Stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

NPS will ensure that the following measures are carried out:

I. NPS will maintain the lodge in stable condition, and take such steps as are appropriate to protect the building against vandalism, damage and loss by fire. Such measures shall be consistent with the Secretary of the Interior's Standards for Historic Preservation and shall be carried out in consultation with the SHPO. An annual report documenting what measures have been taken to maintain the building in a stable and secure condition will be provided to the SHPO and the Council, commencing on the first anniversary of the date on which this agreement is signed by the Council. Annual assessments of the lodge's condition and the preservation maintenance actions necessary to open and maintain the building in a stable and secure condition will be provided to the SHPO at the beginning of each season, no later than July 15th of each year this agreement is in effect. The SHPO shall have 20 working days to review and comment on any proposed maintenance actions which are not covered under the preservation maintenance and limited rehabilitation provisions of Stipulation IV of the 1995 Programmatic Agreement between the NPS, the National Conference of State Historic Preservation Officers, and the Council.

II. The NPS will cease actions under Stipulation I above and remove the historic lodge only when full funding has been secured for the replacement structure and agreement reached on an acceptable design for the new building.

Agreement on an acceptable design will be achieved through the process outlined in Stipulation VI of this agreement.

III. Prior to replacement and removal of Sunrise Lodge, NPS will request the Historic American Building Survey (HABS) to determine what level and kind of recordation is required for the property. NPS shall ensure that all documentation, including photographs, measured or as-constructed drawings, and historical narrative text, as appropriate, is completed and accepted by HABS prior to any action to demolish or substantially alter the Lodge. NPS shall ensure that copies of this documentation will be deposited in the Library of Congress, in Mount Rainier National Park Archives, and with the SHPO.

IV. NPS shall ensure that the story of Sunrise Lodge will be interpreted for park visitors. NPS shall ensure completion of an interpretive plan that will describe themes and the appropriate media to be used in such interpretation. A draft interpretive plan shall be developed by NPS and provided to the SHPO for comment at each stage of development. If the SHPO does not comment within 20 days after receipt of any drawings, plans, etc., NPS shall presume concurrence.

V. Prior to demolition, NPS will conduct a survey of the building and remove any hardware or other material that might be used in preserving other structures in the park. The cluster and/or park historical architect and curator will provide professional assistance in the survey. All materials selected for preservation or reuse will be properly stored and protected. The SHPO will be provided an opportunity to comment on any future plans for reuse or disposal of these materials.

VI. NPS shall afford the SHPO the opportunity to participate in all phases of the design process. In addition the SHPO shall submit three names of interested parties from the public from which NPS will select one to represent the public in this process. At the conclusion of the design process, NPS will provide the SHPO with a formal opportunity to comment on the final design of the replacement building for the Lodge, and other rehabilitation projects proposed for the Sunrise Historic District, including the rehabilitation of the gas station, the modification of the parking area, and revegetation, landscape and trail plans. The SHPO will have 20 working days to comment. If SHPO does not comment within 20 days after receipt of any drawings, plans, etc., the NPS shall presume concurrence.

VII. The NPS will exercise maximum caution and provide an archeologist who will monitor ground-disturbing activities. If properties are discovered during implementation of the undertaking, the NPS will cease activity affecting the discovery remains and proceed in accordance with 36 CFR 800.11 (b) (2) and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990.

VIII. NPS shall ensure that any burial sites, human remains, funerary objects, sacred objects, and objects of cultural patrimony encountered during construction are treated in a manner consistent with applicable federal law, including, but not limited to, the Native American Graves Protection and Repatriation Act of 1990.

IX. NPS shall ensure that all historical, architectural, and/or archeological work conducted pursuant to this agreement is carried out by or under the direct supervision of a person or persons meeting at a minimum the appropriate qualifications set forth in the Department of the Interior's "Professional Qualifications" (48 FR 44738-9).

X. Failure to carry out the terms of this agreement requires that NPS again request the Council's comments in accordance with 36 CFR 800. If NPS does not carry out the terms of this agreement, it will not take or sanction any action or make any irreversible commitment that would result in an adverse effect to the historic property or would foreclose the Council's consideration of modifications or alternatives to the undertaking.

XI. Should the SHPO or the Council object to any NPS decisions or actions pursuant to any portion of this agreement, the NPS will consult with the objecting party to resolve the objection. If the NPS or the objecting party determines that the objection cannot be resolved, the NPS will forward all documentation relevant to the dispute to the Field Director for further consultation. If the objection still cannot be resolved, the Field Director will forward to the Council relevant documentation not previously furnished to the Council. Within 30 days after receipt of all pertinent documentation, the Council will either:

1. Provide the Field Director with recommendations, which the Field Director will take into account in reaching a final decision regarding the dispute; or
2. Notify the Field Director that it will comment pursuant to 36 CFR Part 800.6(b), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the Field Director with reference to the subject of the dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute. The NPS responsibility to carry out all actions under this agreement that are not the subjects of the dispute will remain unchanged.

XII. At any time during implementation of the measures stipulated in this agreement, should any objection to any such measure or its manner of implementation be raised by a member of the public, the NPS shall take the objection into account and consult as needed with the objecting party, the SHPO or the Council to resolve the objection.

XIII. Any party to this agreement may request that it be amended. The process of amending the agreement shall be the same as that exercised in creating the original agreement.

XIV. This agreement will terminate five years after the date of its acceptance by the Council. The consulting parties will have the option at that time of restructuring the agreement or renewing it annually. Annual renewal of the agreement shall be automatic if the NPS has been funded by Congress for the design and/or construction phases of the new lodge.

Execution of this Memorandum of Agreement and implementation of its terms evidence that the National Park Service has afforded the SHPO and Council a reasonable opportunity to comment on the "Development Concept Plan/Environmental Assessment: Sunrise, Mount Rainier National Park" (Draft: August 1993), which proposes the replacement and removal of Sunrise Lodge at Mount Rainier National Park, and its effects on historic properties and that the National Park Service has taken into account the effects of its undertaking on historic properties.

NATIONAL PARK SERVICE

By: W. J. Bringle

Date: 8/5/96

WASHINGTON HISTORIC PRESERVATION OFFICER

By: Mary Simpson

Date: 8/14/96

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: Robert D. Bush

Date: 9-18-96

Development Concept Plan
Environmental Assessment

Draft
August 1993

Sunrise
MOUNT RAINIER
National Park • Washington

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INTRODUCTION

The National Park Service proposes to provide functional day use facilities at the Sunrise developed area in Mount Rainier National Park while preserving to the greatest extent possible the integrity of the park's cultural and natural resources. The National Park Service has determined that Sunrise should continue to serve its present function – to provide information and be a departure point for hikers and backcountry users, and to serve as a day use destination point from which visitors can learn about and enjoy the natural and cultural features of the east side of the park. Facilities necessary to support visitors' learning about and enjoying park resources include information centers and signs, parking, gift and food service, hiker supplies, first aid, comfort stations, picnicking sites, and interpretive trails. Related NPS and concession services and facilities necessary to provide visitor services include interpretation, law enforcement, maintenance, and employee housing.

Four alternatives are presented in this *Development Concept Plan/Environmental Assessment*: alternative A – no action, in which present level of maintenance continues and an attempt is made to bring the lodge up to applicable building and safety codes; alternative B – rehabilitate lodge and relocate gas station (minimum requirements to bring the structure up to code and solve some of the operational problems); alternative C – construct a new ranger station/concession facility southwest of parking area and remove Sunrise Lodge; and alternative D – remove Sunrise Lodge and construct a new ranger station/concession facility on the same site. The National Park Service is proposing to implement alternative D as its preferred alternative.

Specific details of the plans may be changed in the subsequent design process. Individual elements of different alternatives may be combined into a final design.

PURPOSE AND NEED FOR ACTION

The purpose of this plan is to define and analyze alternatives that would accomplish the objectives of providing required visitor services; reducing annual maintenance costs; assisting in meeting the operational and resource management needs of the Sunrise area and the eastern portion of the park; and meeting federal accessibility standards and other building codes in an aesthetically pleasing manner while minimizing impacts to resources.

The National Park Service needs to provide adequate opportunities for resource enjoyment and adequate services for the public. The existing facilities at Sunrise do not meet these goals and require design attention to correct problems with existing structures and to provide visitor services more efficiently.

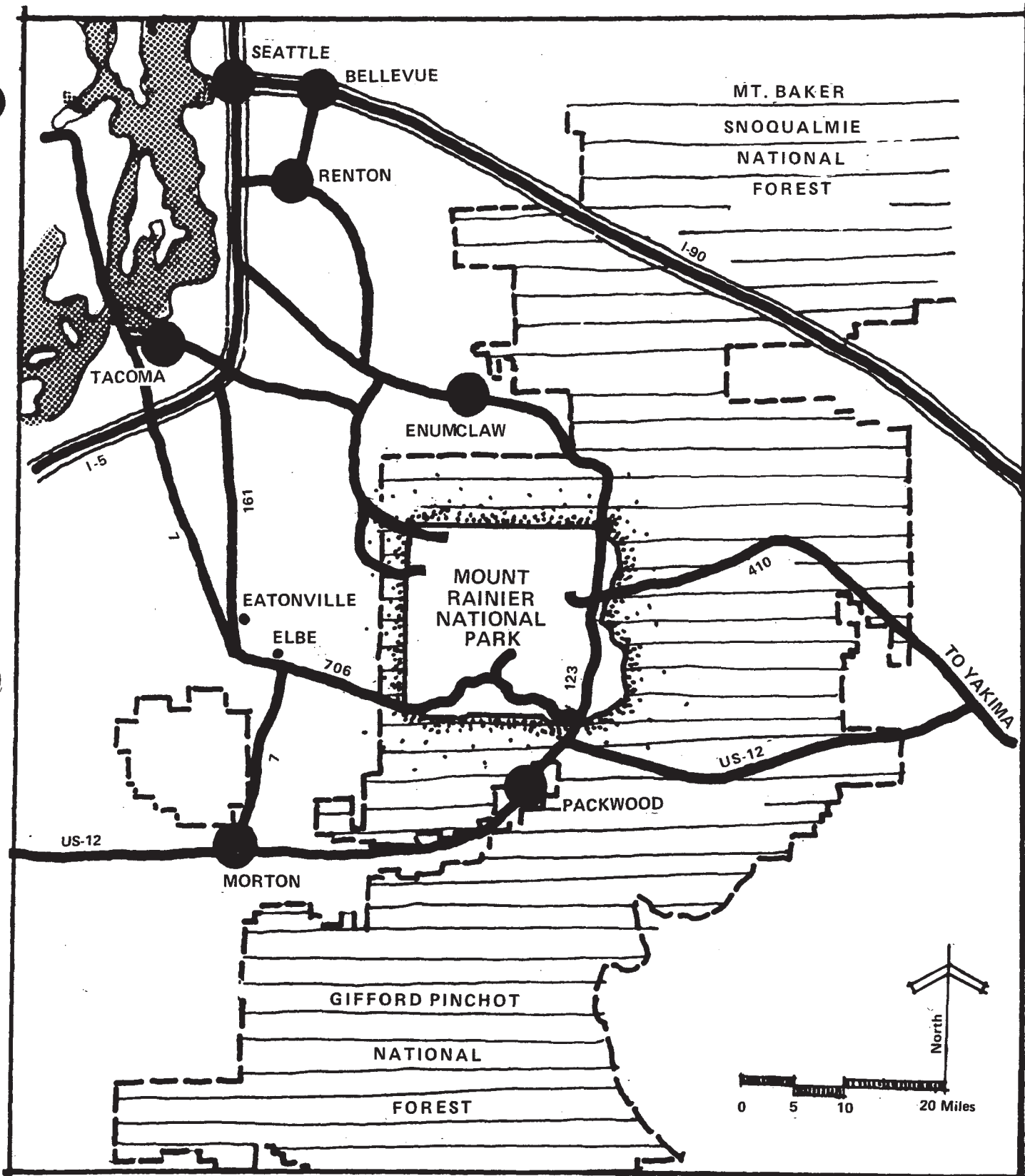
Sunrise Lodge is in a badly deteriorated condition. Water intrusion into the substructure is causing structural instability. Intensive annual maintenance is required to maintain the lodge in an attractive condition in the harsh subalpine environment with heavy snow and ice. The action of these elements destroys portions of the shingle siding which must be replaced yearly.

In addition to the poor physical condition and deficiencies of the lodge, it does not function well at providing the intended services for the public. Sunrise Lodge as it exists today is only a part of what was planned as a much larger structure. The original plan was never completed. The National Park Service and the concessioner are utilizing the "uncompleted" structure. The interior layout of the present lodge does not allow for the most desirable division of space between park and concessioner functions. There is too much space for the gift shop and too little for the ranger station. The space available for the ranger station in the lodge is poorly suited to function well as a first aid station and hiker information center.

The concession facility includes a short-order kitchen, a gift shop, and concessioner housing. The mechanical, electrical and plumbing systems need replacement. The kitchen grille and exhaust need to be replaced to meet fire safety codes. Other kitchen equipment needs to be upgraded. Additional fire protection measures are necessary to meet life safety requirements for employee lodging. The employee housing area does not meet federal handicapped accessibility standards. Appendix A details the minimum corrections necessary to meet applicable building and safety codes.

Sunrise needs a place where visitors can gather for interpretive talks. The ideal location for this function would be between the ranger station and the interpretive facilities. Several trails originate or pass through Sunrise but there is no central trailhead where visitors can be oriented to the trail system.

Other elements of the Sunrise development also require attention. The historic gas station next to the lodge is no longer in service and has been boarded up for weather protection; its condition is rapidly deteriorating. Access for visitors with mobility impairments has not been adequately provided to the visitor center and comfort station. The parking area is an uninterrupted expanse of asphalt (or a sea of vehicles, depending on how many visitors are present), which detracts from the outstanding view when entering Sunrise. There is no formalized entrance area to provide a sense of arrival to Sunrise.



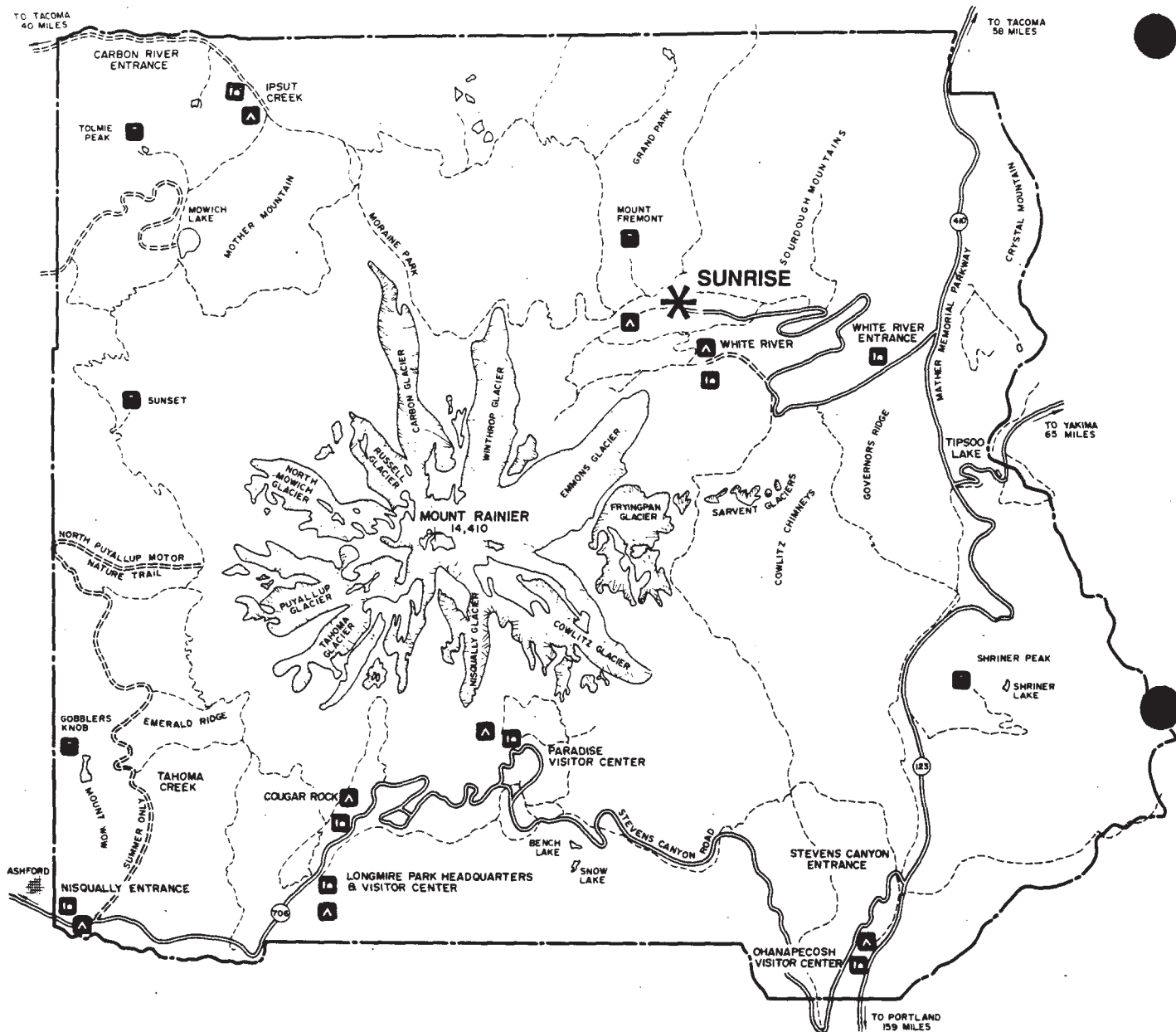
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● Mount Rainier National Park

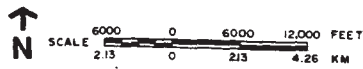
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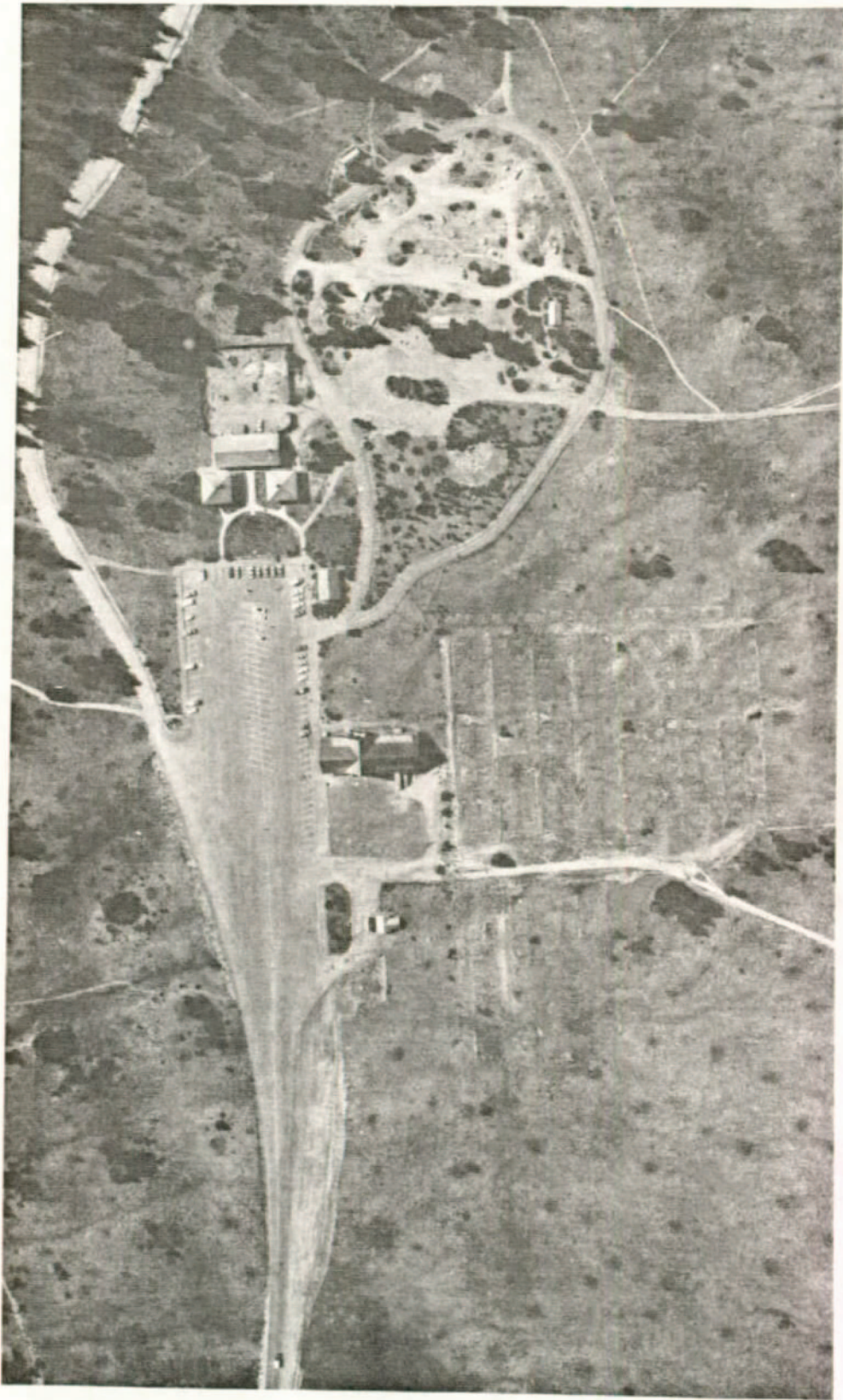
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|--|---------------------------|--|-------------|
| | FIRE LOOKOUT TOWER | | CAMPGROUND |
| | PICNIC AREA | | PAVED ROAD |
| | INFORMATION | | GRADED ROAD |
| | TRAILER SANITARY DUMP STA | | TRAIL |
| | RANGER STATION | | |



LOCATION

SUNRISE
 Mount Rainier National Park
 UNITED STATES DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE
 DSC/JULY 1988/105-40,072

ON MICROFILM



AERIAL PHOTO OF SUNRISE, 1971

North →

AFFECTED ENVIRONMENT

PARK LOCATION AND ACCESS

The Sunrise developed area is in the northeastern section of Mount Rainier National Park. Access to Sunrise is via the White River Road, which extends 14 miles westward from Mather Memorial Parkway (State Route 410 – see Region and Location maps).

PURPOSE OF THE SUNRISE DEVELOPED AREA

The purpose of the Sunrise developed area is to provide information and a departure point for backcountry users and hikers, to provide day use visitors with a destination point from which they can learn about and enjoy the natural features of the east side of the park, and to provide some amenities to assist visitors to enjoy their stay. Information, parking, gift and food service, hiker supplies, first aid, comfort stations, picnicking, and interpretive trails are services that are deemed appropriate to fulfilling the purpose of the developed area. To provide these services, related NPS and concession operations and facilities, such as law enforcement, maintenance, and employee housing, are also required. Overnight guest accommodations are not considered essential at Sunrise. There is lodging inside the park at Paradise and Longmire and outside the park at nearby Crystal Mountain, Enumclaw, Packwood, Yakima, Tacoma, and Seattle.

CULTURAL RESOURCES

Archeology

The preferred site has been previously impacted by construction, and has been previously surveyed. No significant archeological resources were found. Archeological monitoring would be conducted during construction. The likelihood of finding significant archeological resources is very low. If another site is selected other than the preferred site, this archeological methodology would need to be reexamined.

History of Sunrise Development

The development at Sunrise in the 1930s introduced visitors to a spectacular view of Mount Rainier and the beautiful wildflower-covered subalpine meadow with its contrasting dark patches of trees.

Sunrise Lodge is the result of the first major effort to provide comprehensive planning for future development in Mount Rainier National Park. Planning for the area then known as Yakima Park was a joint effort by the National Park Service and the privately owned Rainier National Park Company. This undertaking was sparked by the road construction that opened the east side of Mount Rainier National Park to auto traffic in 1929. NPS facilities were designed by the National Park Service's Branch of Plans and Design in San Francisco to represent the blockhouses and stockades used by the settlers of Washington Territory. Two blockhouses that would serve as administrative-residential structures (completed in 1930 and 1939), a large stone and log comfort station (1932), a vertical-log stockade (1939), and a museum (1943) were located at the west end of a large receiving (parking) plaza. The stockade complex was designed to serve as a buffer between the developed area and the natural beauty of Mount Rainier.

For its part the concessioner undertook construction of what promised to be a large mountain hotel on the longest (north) side of the plaza in 1931. This structure would have been the central feature of a much larger hotel complex that would have extended into the northwest and southeast meadows surrounding the plaza. By July of 1931, the concessioner had completed the shell on the first (west) wing, laid the foundation for the later central lobby and east wing, and constructed a gasoline service station that was a classic example of the rustic style that dominated architecture in the western national parks. The west wing, which would eventually be called Sunrise Lodge, was a two-story rectangular frame building (50 feet by 136 feet) with a steeply pitched, cedar-shingled roof. Portions of the east and west facades were left void of architectural detail in anticipation of future construction to complete the hotel. Essentially a service facility, the building contained a dining room or cafeteria, kitchen, employees' dining room, employee bedrooms, and toilet facilities.

Financial difficulties had plagued the Rainier National Park Company for some time. The lodge they intended to build at Yakima Park in 1931 was a considerably scaled-down version of their original plans. Even that proved to be beyond their capabilities, however. The west wing would be the only part of the Yakima Park hotel ever built. Instead, the company constructed some 215 small housekeeping cabins similar to those that existed at Paradise; the completed portion of the hotel functioned as a cafeteria, gift shop, service building, and dormitory for concession employees.

The cabins, which proved from the first to be as unpopular at Yakima Park as they had elsewhere in the park, were removed in the 1940s. Although the function of the area itself changed, becoming one of day use rather than overnight use, the west wing continued to function in much the same manner. As the function remained little changed through the years, the building itself remains relatively unaltered including the unfinished east and west facades, except for removal of the lobby and east-wing foundations, relocation of the gift shop to the first floor, placement of the ranger/first-aid station in the former gift shop area, and improvements in life safety, including the installation of fire safety devices. On May 28, 1987, the Yakima Park stockade group - north and south blockhouses, museum, and stockade - were placed on the National Register of Historic Places and designated a National Historic Landmark because of their importance as examples of architecture in the national parks. Sunrise Lodge, together with the blockhouses, museum (now serving as the visitor center), comfort station, and gas station was entered in the National Register on March 13, 1991 as the Sunrise Historic District for its "association with the first comprehensive planning effort for facilities development in Mount Rainier National Park and in the visual unity achieved by the consistent use of design element of the rustic tradition to integrate the complex with its natural setting."

Physical Condition of Historic Structures

The lodge has a major subsurface drainage problem according to a soils report prepared by a geotechnical engineer in the Denver Service Center (NPS 1987). A natural watercourse appears to flow directly under the building and seasonally through parts of the foundation. The result is reduced bearing capacity of foundation soils, and subsequent uneven settling of support columns and foundation walls. These conditions have caused the building frame to shift out-of-plumb, stressing structural members and cracking foundation walls, and the ranger station floor and walls to rot from water penetration.

Many of the original lodge utilities are deteriorating and becoming unsafe, including the original electrical wiring, unit heaters and piping, hot water heaters, antiquated kitchen equipment, and a kitchen grille without adequate fire protection. These conditions are summarized in appendix A. Some corrective measures have been taken to minimize safety problems, but rehabilitation is required to replace obsolete systems and materials and to complete life safety improvements.

Heavy winter snowfall and subsequent spring thawing and freezing cause excessive wear and breakage of the sidewall shingles. Annual replacement of missing shingles is time-consuming and creates an additional expense on a limited maintenance budget.

The gas station (480 square feet) is no longer in service, and the windows are boarded for winter protection. This building is deteriorating which detracts from the overall visual quality of the Sunrise area.

The museum/visitor center structure has remained virtually unaltered since minor improvements were made in 1952. The building serves as an interpretive center and naturalist office. Access to the visitor center does not meet federal accessibility standards and requires improvements to accommodate visitors who are handicapped.

NATURAL RESOURCES

The topics discussed in this section include only the most relevant natural resource issues that either affect development in the Sunrise area, such as climate, or could be affected by any of the alternatives, such as soils/topography and the subalpine forest/meadow community. There are no known federally listed or proposed threatened or endangered species and no surface streams or floodplains in the project area.

Climate

Mount Rainier, west of Sunrise, has a significant effect on weather patterns in the Sunrise developed area. Sunrise lies at 6,400 feet above sea level. Southwesterly winds bear much of the moisture, creating a rain shadow so that Sunrise is considered to be relatively dry in comparison with other locations to the south and west of the mountain. Nevertheless, snow depths are appreciable. No precipitation data are available for the area, but generally June is cool and rainy and July through September is clear about 50 percent of the time. In most years, snow accumulation begins in late October and remains through early July. Snow depths of 12 to 15 feet on the roofs of the buildings have been observed. Road snowplowing is required in June to open the area to visitors in early July. Winds are from the west during the winter, resulting in snowdrifts to the east of structures. Average summer high temperatures are in the high 60s and low 70s (°F); lows are in the high 30s. The mean daytime temperature is in the low 60s.

Soils and Topography

Soils in the lodge/parking area vicinity are composed of sand, silt, cobble, and angular fragments that have been deposited by glacial meltwater (NPS 1987). Soils are generally of low organic content and drain very quickly. During spring thaw, however, groundwater rises within inches of the ground surface in the lodge vicinity and flows directly into and through the foundation area of the lodge structure, reducing the bearing capacity of the foundation soils.

Soils in the Sunrise area, when exposed or disturbed, are highly susceptible to erosion by wind and water, especially on sloped terrain. Abundant snowmelt water has a high erosive potential; the volume is great, and little is absorbed by the soil because it is still frozen. Soil development is slow at this subalpine location, and places where vegetation is removed are slow to recover naturally without soil supplements.

Topography in the Sunrise developed area is primarily flat (0 to 5 percent slopes). Slopes in the picnic area and immediately to the north and south of the lodge and visitor center range from

5 to 15 percent. Steep slopes rise to the north to Sourdough Ridge and descend to the south to the White River, approximately 3,000 feet below.

Vegetation

The subalpine parklands at Sunrise are characterized by extensive meadows with scattered groups of subalpine fir and whitebark pine. Some of the more common meadow plants include green fescue, lupine, bistort, spreading phlox, sedges, red heather, white heather, purple aster, and paintbrush. A botanical survey conducted by the park determined that the obscure Indian paintbrush (*Castilleja cryptantha*), a state-listed threatened plant and a federal category 2 candidate threatened/endangered species; tongue-leaf luina (*Luina stricta*), a state-listed monitor species; and Mount Rainier lousewort (*Pedicularis rainierensis*), a state-listed monitor species, do not occur in any of the areas that would be affected by construction.

Subalpine meadows are fragile, particularly when disturbed by repeated trampling, such as "social trails," or other types of disturbance. Once disturbed, meadows are slow to naturally revegetate due to the short growing season, strong winds, summer dry spells, fall frost action, and nutrient-deficient, rapidly drained soils. Soil compaction also increases revegetation time. For example, scars from the construction of cabins that were removed in the 1940s are still visible almost 50 years later.

Current revegetation efforts by the park staff have been successful in subalpine areas, with a 95 percent survival rate for greenhouse transplants on abandoned trails. Results from trail projects and recent revegetation work along the Sunrise waterline in 1985 have been helpful in developing revegetation techniques that could reduce the visibility of a development scar to about 20 to 25 years in the Sunrise area. If weather conditions are not ideal, scars would be visible longer. These techniques include transplanting seedlings and plant mats salvaged from other construction projects, seeding and mulching, as well as planting greenhouse-grown plants. Revegetation efforts in the Sunrise picnic area and on the abandoned trails will begin following completion of construction for this project. Vegetation disturbed within the proposed work area, including tree clumps, will be salvaged for revegetation transplanting.

Tree groups in the subalpine parklands of Sunrise follow a distinct successional sequence (Franklin and Dyrness 1973). Hardy subalpine tree species invade the meadow and create a microclimate characterized by earlier snowmelt and longer growing seasons than the adjacent meadow. Additional trees become established on the group periphery by branch layering and seed germination. As a result, trees in the center of these groups are older than those at the edges. Tree clumps were cored recently near the visitor center at Sunrise and ranged in age from 175 years to 300 years. Tree clumps can be transplanted successfully.

Wetlands

Based on the presence of mottled soils, facultative hydrophilic plant species, and the fact that the water table is close to the soil surface during the spring season, the subalpine meadow surrounding Sunrise may contain jurisdictional wetlands.

Wildlife

Commonly seen animal species include Clark's nutcrackers, gray jays, common ravens, mountain chickadees, Townsend chipmunks, golden-mantled ground squirrels, and yellow-bellied marmots. Mountain goats in the vicinity do not use any of the areas proposed for development. While elk and blacktail deer occasionally wander through the area, there is such heavy visitor use that they do not stay long or use the developed area as an important part of their range.

VISITOR USE AND FACILITIES

Visitor Use

The visitor use season at Sunrise is regulated by the extensive snow depth and snowmelt rates. Generally three months long, the season begins in early July and ends in early October. Even during this time, weather is a limiting factor due to fog, rain, snow, hail, and high winds. An average of 1,200 people per day visit Sunrise in the three-month season. On an average weekday, rangers counted 115 vehicles at Sunrise (vehicle counts made between 1983 and 1989). An average weekend day sees 296 vehicles at Sunrise. Visitation peaks on weekends if clear weather prevails. On sunny weekend days, an average range of 400-500 vehicles may be present. The current parking lot contains designated spaces for 236 cars, 6 RVs or buses, and 4 handicapped spaces. In addition to the designated spaces on the paved parking area, overflow parking occurs on the graveled areas adjacent to the main lot, along the road shoulders, and around the historic gas station.

The park notifies visitors at the White River Entrance when the Sunrise parking area is full. However, visitors are not prohibited from driving to Sunrise even when the lot is full. Consequently, vehicles not accommodated in the lot queue up waiting for a parking space, which creates traffic congestion.

Typical visitors are families with young children who stay an average of four hours. Over 98 percent of the visitors arrive in private vehicles; buses and recreational vehicles (RVs) comprise 2 percent of vehicular use. Most visitors use trails, the food service or picnic area, the comfort station, and the visitor center.

Because of its location, the lodge is currently the initial stop for information about the Sunrise area. As originally planned, this function was appropriate here because the lodge was intended to be the focal point of a much larger development than is present today. The present lodge is no longer intended to be the visitor destination point originally envisioned. The visual dominance of Sunrise Lodge conveys a sense that the lodge is more important than resource interpretation at the visitor center. The park would prefer to have the initial contact point be in the visitor center rather than the ranger station. Only one employee is required to staff the visitor center information desk, and the rangers are often absent from the ranger station to perform patrol functions.

The ranger station is located in the basement of the lodge, an area initially designed to be the gift shop. The space is too small and does not function well for its intended purpose.

Visitor Services and Facilities

Visitor facilities include the lodge, parking area, visitor center, public restrooms, and picnic area (see Aerial Photograph, 1971). Upon arrival in the developed area, visitors see the large asphalt parking area. This expanse of bare asphalt interrupts the vista of the meadow and detracts from the natural beauty of the Sunrise area.

Several trails originate from or pass through the Sunrise area. These include the Wonderland Trail, the Sourdough Ridge trail, the Huckleberry Creek trail, and trails to Burroughs Mountain and Mount Fremont. There is a walk-in campground about 1 mile from the developed area.

The picnic area northwest of the lodge is adequate in capacity. It features outstanding views of Mount Rainier on clear days.

Guest Services, Inc., operates the Sunrise Lodge concession, which contain the following facilities:

- 2,000-square-foot fast-food cafeteria seating 80 people
- 3,300-square-foot kitchen
- 1,500-square-foot gift and camping supply shop
- 16-room employee housing facility (second floor)

The comfort station west of the lodge is in good condition, although improvements in handicap-accessibility are required to meet federal standards.

PARK MANAGEMENT AND CONCESSION OPERATIONS

There is no year-round staff at Sunrise. Maintenance crews begin snow removal in late May or June to open the area to concession staff and visitors in late June or early July, depending on snow conditions. During the summer season, NPS staff includes visitor protection rangers, naturalists, and maintenance workers. Staff functions include visitor contact and interpretation, first aid, patrol, issuing camping permits, registering overnight hikers, and maintaining facilities. Visitor contact occurs primarily at the visitor center and at the ranger station in the basement of the lodge.

NPS employees are housed in two 1,024-square-foot structures known as the blockhouses, which are contributing structures to the Yakima Stockade National Historic Landmark. The blockhouses were remodeled in 1980-82 to accommodate up to 19 NPS employees.

The maintenance stockade is located behind the visitor center and is used for maintenance vehicle and equipment storage. There is also a new water treatment building in the stockade. Although the stockade adjoins the visitor center, the high surrounding walls prevent visitors from seeing maintenance activities.

Guest Services, Inc., currently operates the food/gift shop concession at the Sunrise Lodge. Typically, 10-14 employees are hired, with employees residing at the lodge during the summer season.

ALTERNATIVES

INTRODUCTION

An interdisciplinary team from the Denver Service Center, in consultation with park and regional office staff, developed alternatives for the Sunrise area. The treatment of the lodge in particular received much attention because of its historic significance. The goals of the Sunrise area and the deficiencies of the existing development were among the factors considered in the development of alternatives and are described in the **Introduction** and the **Purpose and Need for Action**. How well the alternatives meet these goals, correct the deficiencies, and comply with applicable laws, policies, and guidelines are described in the **Environmental Consequences**. In summary, Sunrise Lodge is deteriorating and has structural problems due to site conditions. The building requires extensive annual maintenance to maintain an attractive appearance that does not detract from the overall appearance of the adjacent National Historic Landmark. The maintenance work requires levels of funding and manpower that strain park resources. The lodge does not meet safety codes or handicapped accessibility standards. The floorplan of the lodge does not serve the needs of either the NPS or the concessioner efficiently or effectively, and thus the needs of the visitor are not met. The old lodge was not designed to be energy-efficient. Based on these deficiencies, removal of the lodge and replacement with a design suited for the present park and concession requirements is considered a reasonable alternative. Impacts to natural resources were a final factor considered during development of alternatives. Extensive new disturbance of the subalpine meadow surrounding the Sunrise area is not acceptable, so new construction had to be confined to previously disturbed areas.

A no action alternative, a minimum requirements alternative and two alternatives involving new construction to improve visitor facilities at Sunrise have been evaluated. Other alternatives considered are also described. No improvement to facilities at Sunrise was not considered to be a viable alternative because the National Park Service would be forced to close Sunrise Lodge to protect the health and safety of visitors and employees. Closure, or "mothballing", of the building would result in accelerated deterioration. Furthermore, functions determined to be essential to the purpose of Sunrise - food service, gifts, and hiker supplies - would no longer be provided.

The alternatives focus on correcting the maintenance and structural problems with the lodge; adaptively reusing the gas station; improving the ranger station/concession facility, the entry area, and the parking area; and bringing the visitor center and comfort station into compliance with handicapped accessibility codes. The National Park Service has determined that no major improvements to the blockhouses, museum/visitor center, stockade, or comfort stations will be required as part of this project. Employee housing will remain as is, with NPS employees residing in the blockhouses and GSI employees in the lodge structure. Alternatives A and B, and C as presently designed, will require an elevator to meet handicapped accessibility codes.

The following actions common to all alternatives been suggested through the project review process. Service roads north and west of the developed area would be removed, except as necessary for handicapped and emergency access, including the service road to the walk-in campground, and the road to the generator site. Consideration would be given to purchasing a new, less noisy generator that could be moved to within the stockade. The picnic area would be enhanced through selective revegetation of trampled areas.

All alternatives include revegetation of disturbed areas following construction. The amount of revegetation required varies with each alternative and is given in the section detailing environmental consequences of the alternatives.

Available parking would be reduced under all alternatives because of the requirements to provide a more formalized entrance and to screen the expanse of asphalt from the view of approaching visitors. Because parking demand will exceed supply, the park would consider establishing a carrying capacity for the Sunrise area. Use limitations would be based on parking capacity and are necessary to protect the fragile meadows from encroachment by overflow parking. The park has not prepared a strategy yet but has suggested the following options: turn visitors away at the White River Entrance; provide a parking area at the White River Wye as a holding area; and implement a mass transit system. The issue of transportation and use limitation is beyond the scope of this document and will be examined in a broader parkwide context in the upcoming revision of the General Management Plan. General impacts on visitors of traffic management at Sunrise are discussed under **Impacts Common to All Alternatives**.

ALTERNATIVE A - NO ACTION

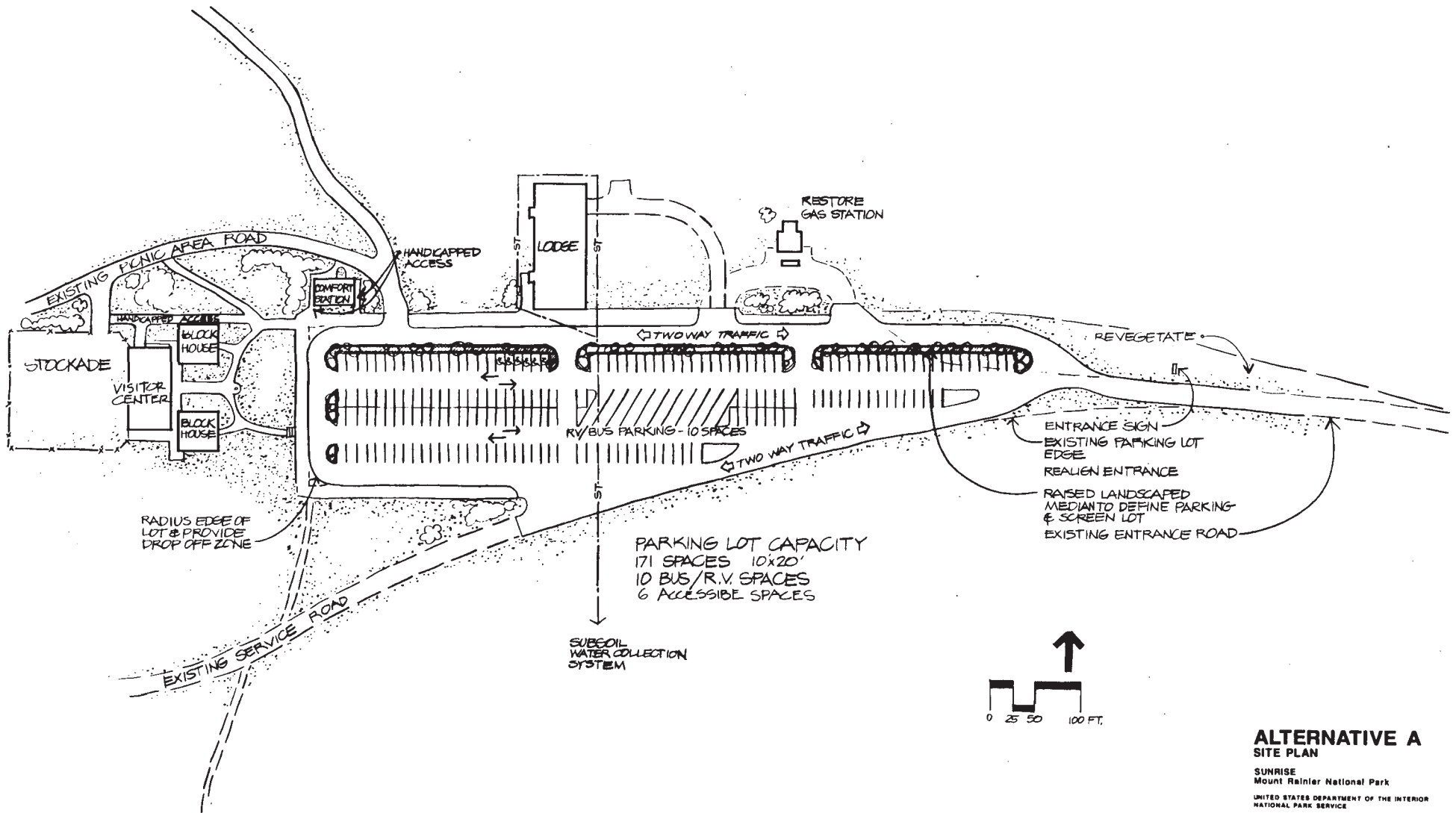
Under this alternative, all existing uses and facilities would be retained at their present size and location but improved to meet current life safety, health, building, and access codes (see appendix A). Facilities that do not currently meet these codes include the lodge, gas station, and trails to the visitor center and comfort station. Aesthetic and circulation improvements would be made by adding landscaped islands to the parking area. Improvements to existing facilities would be accomplished by contract or through routine maintenance when funding is available.

Sunrise Lodge

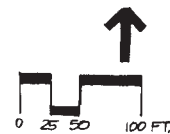
The lodge would be brought up to code by completing fire-rated walls and ceilings on the first floor and by installing fire detection and sprinkler systems. Electrical wiring and plumbing systems would be replaced, and a new heating pipe system and heaters would be installed. The kitchen would be improved to meet fire and health codes by replacing some kitchen equipment. All exterior finishes, windows, and doors would be removed and replaced in historic configurations. The ranger station and first-aid rooms would also be reconstructed to meet codes (see Alternative A - Sunrise Lodge Site Plan).

The lodge would remain at the existing size of 16,466 square feet total in two stories and a basement. The footprint would remain at 6,800 square feet (0.16 acre).

A subsoil water collection pipe and distribution system would be constructed to eliminate spring flooding in the basement and subsequent settling of the building foundation. This would entail excavating around the building foundation and through the parking area to lay drainage piping. Water would be drained south of the parking area through a 100-foot-long perforated pipe. Construction would involve excavating a 10-foot-wide area within a 40-foot construction zone around the building to lay drainage pipes a minimum of 7 feet deep, building a new spread footing foundation and structural piers, and leveling the building. The fuel oil tank, located 100 feet east of the lodge, would be excavated and replaced, requiring about a 200-square-foot excavation area.



PARKING LOT CAPACITY
 171 SPACES 10x20'
 10 BUS/R.V. SPACES
 6 ACCESSIBLE SPACES



**ALTERNATIVE A
 SITE PLAN**

SUNRISE
 Mount Rainier National Park
 UNITED STATES DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE
 DEC/AUGUST 1988/105-40.082

ON MICROFILM

Gas Station

Under this alternative, the gas station would be restored according to *The Secretary of the Interior's Standards for Rehabilitation with Guidelines for Rehabilitating Historic Buildings*. Existing materials and original techniques would be used for restoring the structure to its original condition. Where existing materials cannot be used because of their deteriorated condition, they would be replaced in kind. Because of the accelerated decline of the building, almost all features would require restoration work. It is unlikely that the building would again be used as a gas station since demand for gas is not high at Sunrise. The future use of the building would be determined by the park.

Restoration work would not cause site impacts beyond existing disturbed areas around the building.

Entry, Parking, and Roads

Under this alternative, minimal improvements would be made to the parking area. Vehicular circulation would be improved by realigning the entrance road. Landscaped medians would be added to screen the parking area from lodge and visitor center. The parking area would be restriped to provide 177-car and 10-bus/RV spaces.

Trails and Access for Handicapped Persons

The current trail configuration does not meet handicap-accessibility codes because access to the visitor center and blockhouses is too steep. This alternative would add a formalized access route at appropriate grades for people in wheelchairs to reach the north entrance to the visitor center from the parking area. The comfort station door threshold and walk would also be modified to provide access for handicapped persons.

Construction Schedule

Construction would require two summer seasons. The lodge would be closed for renovation during this period.

Visitor Services

Visitor services associated with the lodge – food, gifts, and camper/hiker supplies – would not be available during the construction period. Ranger and first-aid services would continue from temporary facilities in a modular structure to be located in the stockade area.

Costs

Estimated project and life cycle costs for bringing the lodge up to code, restoring the gas station, providing access for handicapped persons, and revegetating construction scars would total \$4,413,318. Specific costs are detailed and compared for all alternatives in appendix B.

ALTERNATIVE B - REHABILITATE LODGE AND RELOCATE GAS STATION (MINIMUM REQUIREMENTS)

Under this alternative the lodge would be rehabilitated and improved to a greater extent than under alternative A. The gas station would be relocated west of the lodge and adaptively reused as a ranger/first-aid station. The entry and parking sequence would be enhanced by landscaped islands.

Sunrise Lodge

This alternative is the same as alternative A, except that additional functional and aesthetic improvements would be made beyond those necessary to meet codes. A new kitchen, a gift shop, and restrooms would be constructed. Fire egress would be improved on the second floor of the lodge, and a new west entry porch would be added to improve access for visitors who are handicapped. The ranger/first-aid station would be removed from the basement and placed in the relocated gas station (see Alternative B - Sunrise Lodge Site Plan). The interior size of the rehabilitated lodge would be smaller than the existing lodge, because of alterations to the basement to provide drainage. The rehabilitated lodge would contain 15,256 square feet in two stories and a basement. The footprint would be 7,100 square feet (0.16 acre), slightly larger than the footprint of the existing lodge because of the addition of an entrance porch.

Gas Station

The gas station would be restored for adaptive reuse at a new location between the lodge and the comfort station. Existing historic materials would be salvaged and reused to the greatest extent possible, as under alternative A. Methods of relocation and restoration would be in accordance with NPS-28, *Cultural Resource Management Guidelines*. In its new location next to the north trail, the building would serve as a ranger/first-aid station as well as a hiker information center and trailhead. A 1,200-square-foot plaza that incorporates the gas pump shelter as an interpretive display would be connected to the picnic area road and lodge and provide a setting for interpretive talks. The gas station would be moved in a manner that would cause the least damage to the structure.

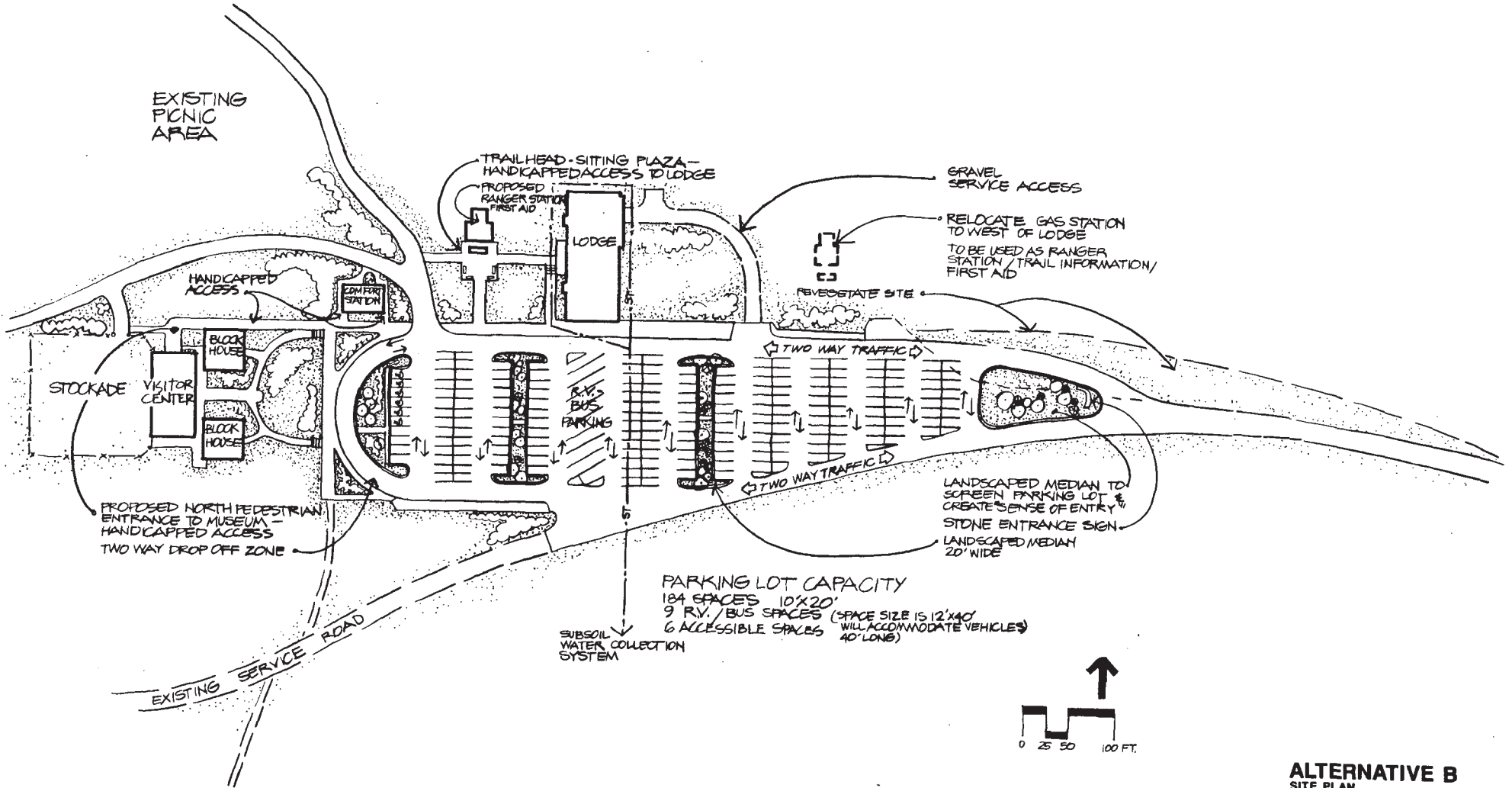
Entry, Parking, and Roads

Under this alternative, a landscaped median featuring a stone entrance sign would be designed for the parking area entry to create a sense of arrival. The parking area would be restriped to provide 190-car and 9-bus/RV spaces and would include three landscaped medians and a drop-off lane in front of the stockade/visitor center. All improvements would take place in previously paved or graveled areas. The gravel service road to the lodge would be formalized and regraveled.

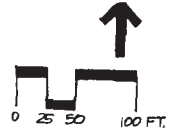
Trails and Access for Handicapped Persons

The handicap-accessible trail from the parking area to the visitor center described under alternative A would also be constructed under this alternative. In addition, trails would connect the relocated gas station/ranger station with the lodge, picnic area access road, and parking area. Access to the comfort station would be improved, as described under alternative A.

EXISTING
PICNIC
AREA



PARKING LOT CAPACITY
184 SPACES 10'X20'
9 R.V. / BUS SPACES (SPACE SIZE IS 12'X40'
6 ACCESSIBLE SPACES (WILL ACCOMMODATE VEHICLES
40' LONG)



ALTERNATIVE B
SITE PLAN
SUNRISE
Mount Rainier National Park
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DEC/AUGUST 1988/105-40,083

ON MICROFILM

Construction Schedule

The construction schedule would be the same as under alternative A; work would be done through two visitor use seasons. The lodge would be closed for renovation during this period.

Visitor Services

Visitor services associated with the lodge – food, gifts, and camper/hiker supplies – would not be available during the construction period. Ranger and first-aid services would continue from temporary facilities in a modular structure to be located in the stockade area.

Costs

Estimated project and life cycle costs for rehabilitating the lodge, restoring and relocating the gas station, improving the entrance and parking areas, providing access for handicapped persons, and revegetating construction scars would total \$4,943,653. Specific costs are detailed and compared for all alternatives in appendix B.

ALTERNATIVE C - CONSTRUCT NEW RANGER STATION/CONCESSION FACILITY SOUTHWEST OF PARKING AREA

Under this alternative, the existing lodge would be removed, and all current functions would be located in a new ranger station/concession facility. The gas station would be restored at its present location and adaptively reused as a resource management shop; the pump structure would be used for interpretation of the revegetation activity at Sunrise. Parking and trails would be redesigned to accommodate the new building locations.

Ranger Station/Concession Facility

The new ranger station/concession facility would be located on the southwest side of the parking area. This site was selected since it was extensively altered by grading in 1930 to construct the parking plaza. The new facility would be low in profile and placed in front of taller trees to minimize the effect on views from the plaza or the stockade group. Because outdoor interpretation is needed, an interpretive plaza would be constructed adjacent to the building. From the plaza, Mount Rainier would be viewed without the distraction of the parking lot. The view corridor from the facility to Mount Rainier would not require vista clearing.

The new facility would contain 10,150 square feet in one story and a basement. The footprint would be 6,218 square feet (0.14 acre).

About 680 feet of new paved service road would be aligned to the south and screened by existing trees. The new building would straddle a portion of the existing service road. The remainder of the road would be removed and revegetated.

The concession portion of the facility would provide food service and a gift and hiker supply shop, as well as employee housing. The building would contain a modern kitchen to support a cafeteria and dining room. The ranger station portion would incorporate visitor and hiker information, a trailhead, first aid, and storage for mountain rescue equipment (see Alternative C - New Ranger Station/Concession Facility Site Plan). The new design would meet all current codes. The entrance and restrooms would be accessible to handicapped persons.

EXISTING
PICNIC
AREA

REMOVE EXISTING
LODGE -
DELITERATE FOUNDATIONS
RESGRADE & REVEGETATE
WITH NATIVE PLANT MATERIAL

ADAPTIVELY RESTORE
GAS STATION FOR
RESOURCE MANAGEMENT SHOP

HANDICAPPED ACCESS

COMPOST
STATION

STOCKADE

VISITOR
CENTER

BUCK
HOUSE

BUCK
HOUSE

DROP OFF
ZONE

TWO WAY TRAFFIC

REVEGETATE

BUS-
RV
PARKING

TWO WAY TRAFFIC

HANDICAPPED ACCESS

PAVED TERRACE

STONE "SITTING" WALLS

PROPOSED ROAD

ALIGNMENT 14' WIDE PAVED

700'±

REVEGETATE OBLITERATED

ROAD WITH NATIVE PLANT

MATERIAL

RANGER STATION/
CONCESSION
FACILITY

PARKING LOT CAPACITY

169 SPACES 10'X20'

7 BUS/RV SPACES

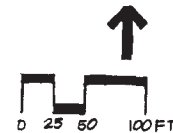
6 ACCESSIBLE SPACES

ENTRANCE SIGN
LANDSCAPED MEDIAN
REALIGN ENTRANCE
REVEGETATE DISTURBED
AREAS

TRAIL

EXISTING VEGETATION
TREE CLUMPS

EXISTING TRAIL
TO OVERLOOK



ALTERNATIVE C SITE PLAN

SUNRISE
Mount Rainier National Park

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

DSC/AUGUST 1988/105-40,004

ON MICROFILM

Once the new facility was operable, the existing lodge would be removed. The old lodge site would be restored and revegetated.

Gas Station

The gas station would be restored in the same manner as under alternative A, and would serve as the resource management shop for the revegetation efforts. The pump cover would include an interpretive panel informing visitors of ongoing revegetation activities at Sunrise.

Entry, Parking, and Roads

Under this alternative a landscaped island and entry sign would be placed at the same location as under alternative B. This would require realignment of about 200 feet of roadway to the graveled area north of the existing road that is currently used as overflow parking. The parking area would be restriped to provide 175 auto and 7 bus/RV spaces. A drop-off zone, separated from the parking area by a landscaped island, would provide a place for buses to unload visitors. A new 680-foot paved service road would be constructed to the south, and the new facility placed over part of the old road scar.

Trails and Access for Handicapped Persons

Trail configurations would remain the same as under alternative A, with the addition of a handicap-accessible path from the visitor center to the plaza west of the new concession facility.

Construction Schedule

Construction would take two seasons. Unlike alternatives A and B, the existing lodge would remain open during the construction period and would be removed after the new facility was constructed.

Visitor Services

Unlike the other alternatives, no visitor services would be interrupted during the construction period.

Costs

Estimated project and life cycle costs for removing the lodge, siting and constructing a new facility, restoring the gas station, improving parking and entry features, providing access for handicapped persons, and revegetating construction scars would total \$4,743,212. Specific costs are detailed and compared for all alternatives in appendix B.

ALTERNATIVE D - CONSTRUCT NEW RANGER STATION/CONCESSION FACILITY NORTHWEST OF EXISTING LODGE (PREFERRED)

This alternative differs from alternative C in the location of the proposed new facility; in the pedestrian walkway and trail configurations; and in the redesign of the parking lot. As under alternative C, the existing lodge would be removed, and all current functions would be located in a new ranger station/concession facility. As under alternatives A and C, the gas station would be restored and adaptively reused as a resource management shop, with the pump structure used for interpretation of the revegetation activity underway at Sunrise. Roads, parking, and trails would be redesigned to accommodate the new building locations; to improve visitor circulation; and to enhance visitor appreciation of the scenic resources. The subsurface drainage problem at the lodge site would be corrected.

Ranger Station/Concession Facility

Sunrise Lodge would be removed. The new ranger station/concession facility site would be constructed on the approximate site of the existing lodge. This site was selected because it would retain the historic site layout and has been disturbed by previous construction. The surrounding area has not revegetated well because of constant pedestrian traffic between the lodge, the trails, the picnic area, and the visitor center. The new building would be designed to complement the historic structures nearby. The west side of the building would have an outdoor plaza with a view of Mount Rainier.

The new facility would contain 11,192 square feet in two stories. The footprint would be 9,932 square feet (0.23 acre).

The concession portion of the facility would provide food service, a gift and hiker supply shop, and employee housing. The building would contain a dining room and a modern kitchen. The plaza would have space available for outdoor tables. The ranger station would provide visitor and hiker information, first aid, and storage for mountain rescue equipment (see Alternative D - New Ranger Station/Concession Facility Site Plan). The new design would meet all current codes. The facility would be accessible to handicapped persons.

Approximately 50 subalpine fir trees (including both clumps and individuals) would be salvaged and transplanted for revegetation.

Gas Station

The gas station would be restored in the same manner as under alternatives A and C and would serve as the resource management shop for the revegetation efforts. The pump cover would contain an interpretive panel informing visitors of ongoing revegetation activities at Sunrise.

Entry, Parking, and Roads

The parking lot would be redesigned. This would require realignment of about 200 feet of roadway onto the graveled area currently used as overflow parking. A landscaped entrance island and entry sign would be added as under alternatives B and C, with a scenic overlook turnout provided near the sign. There would be a passenger dropoff zone between the new facility and the gas station. The ranger station would be emphasized by placing removable bollards on a semicircular bulge of the walkway in front of the entrance.

Space would be provided for 214 autos, including 7 handicapped spaces. There would be 10 pull-through RV spaces. NPS and concession employee parking (6 spaces plus one handicapped space) would be provided behind the new facility. Parking for 4 buses would be constructed near the gas station.

About 560 feet of service road north and west of the new facility would be realigned and paved. The service road for the new facility would run behind it to the north using the old cabin area road scar. The new service road would connect with the existing service roads to both the picnic ground and the stockade northwest of the new facility. The service road access between the comfort station and Sunrise Lodge would be removed. Sections of the old service road would be removed, restored, and revegetated if they are not incorporated into pedestrian routes. The service road would be screened by new plantings and transplanted tree clumps salvaged from the construction site.

Trails and Access for Handicapped Persons

A formal trailhead with an interpretive kiosk would be established between the new facility, the visitor center, and the picnic area. A second interpretive kiosk and mountain overlook would be added beyond the southwest corner of the parking lot. Parts of the existing picnic area and stockade service roads would be converted to pedestrian walkways between the new facility, the comfort station, and the visitor center. One new walkway between the new facility and the visitor center would lead visitors into the historic vestibule (north) entrance of the visitor center. All walkways would be handicapped accessible.

Handicap access to the north entrance of the visitor center and to the comfort station would be provided as part of the trail system that connects new facility, the comfort station, and the visitor center. Handicapped access to the picnic ground would be provided by allowing vehicles with handicapped occupants to use the newly realigned service road.

Construction Schedule

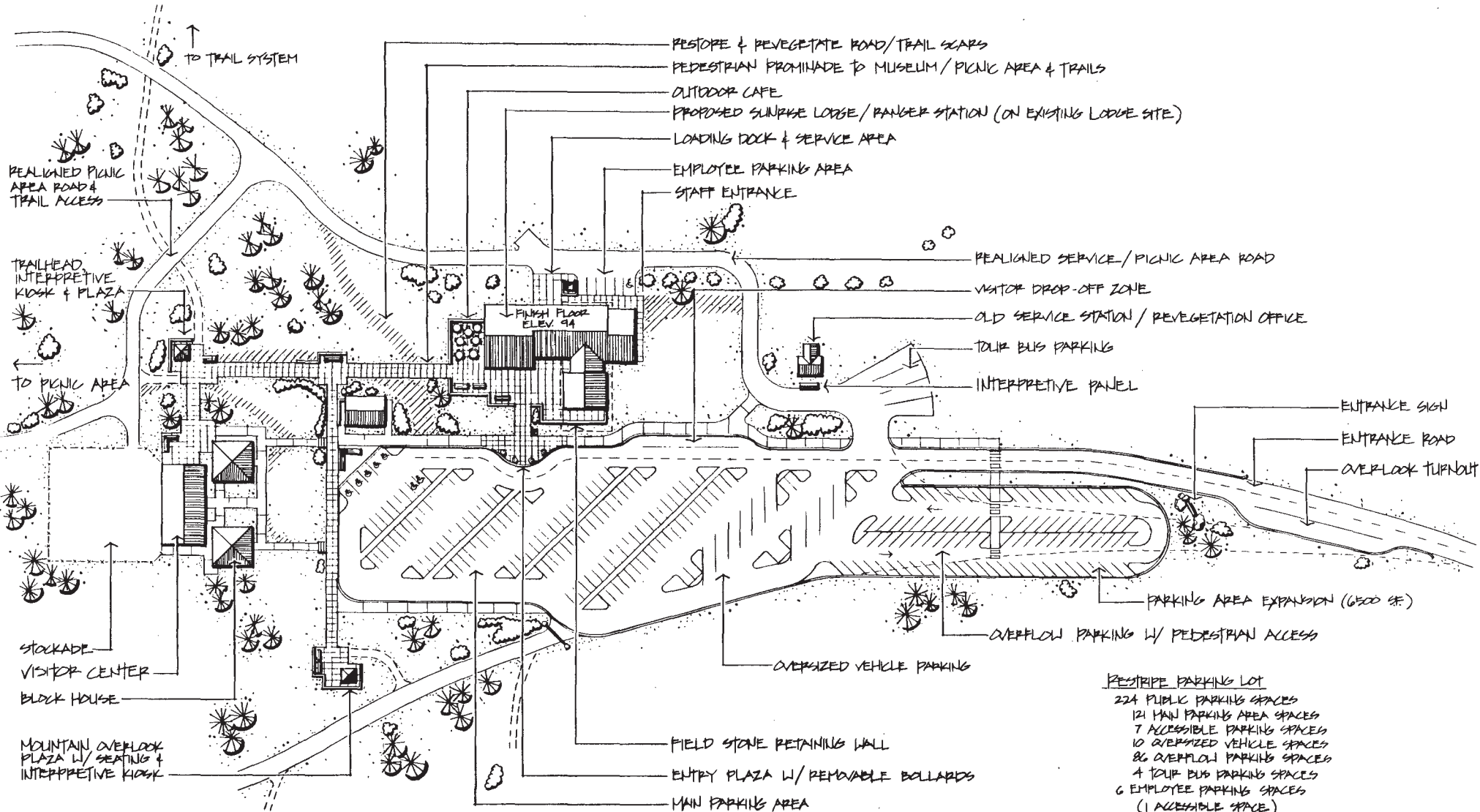
Construction would continue for two seasons, as under other alternatives. Sunrise Lodge would be removed first, followed by site preparation and new construction.

Visitor Services

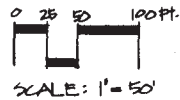
There would be a decrease in the level of visitor services that are provided by the concessioner during demolition of the old lodge and construction of a new facility. Limited food and gift service would be available from a temporary mobile facility located in the parking lot. Ranger and first-aid services would continue from temporary facilities in a modular structure to be located in the stockade area.

Costs

Estimated project and life cycle costs for removing the lodge, siting and constructing a new facility, restoring the gas station, improving parking and entry features, providing access for handicapped persons, and revegetating construction scars would total \$4,240,133. Specific costs are detailed and compared for all alternatives in appendix B.



NOTE: ALL PROPOSED PEDESTRIAN WALKS WILL BE ACCESSIBLE (LESS THAN 8% SLOPE)



- RESTRIPE PARKING LOT**
- 224 PUBLIC PARKING SPACES
 - 121 MAIN PARKING AREA SPACES
 - 7 ACCESSIBLE PARKING SPACES
 - 10 OVERSIZED VEHICLE SPACES
 - 86 OVERFLOW PARKING SPACES
 - 4 TOUR BUS PARKING SPACES
 - 6 EMPLOYEE PARKING SPACES
 - (1 ACCESSIBLE SPACE)

ALTERNATIVE D
SITE PLAN

SUNRISE
Mount Rainier National Park
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DSC/AUGUST 1989/105-40,089

ON MICROFILM

OTHER ALTERNATIVES CONSIDERED

Several alternatives for redesign of the Sunrise complex that have been suggested during the planning process, in addition to the major alternatives presented by the NPS, are described here. The first four alternatives were presented as brief descriptions in letters to the Regional Director following review of earlier versions of this document. They are presented here with only minor editorial changes. These alternatives deal with the basic issue of treatment of Sunrise Lodge but they were not presented at the same level of detail used to describe the NPS alternatives.

The Washington state historic preservation officer, in a letter dated October 16, 1989, suggested an alternative which would use the site planning of alternative D but would retain the lodge. Under this alternative, a new but much smaller ranger station would be constructed adjacent to the lodge to the west. The lodge would be rehabilitated as under alternatives A and B, and the interior upgraded for continued use as a dining facility and gift shop. The second floor would be "mothballed" until the space was needed, funds become available, and less intrusive methods for code-related upgrading are developed. Concession housing would be relocated to the redesigned basement of the lodge or into the new ranger station as in alternative D. The lodge exterior would be restored and a terrace or deck would be added on the west side for the viewing of Mount Rainier. This alternative was rejected because neither the annual maintenance problems of the lodge nor the visitor orientation problem would be resolved. Also, the cost of this alternative would be much greater than other alternatives because new construction would be required in addition to rehabilitation costs.

The following alternatives were suggested by the Advisory Council for Historic Preservation (ACHP) in a letter dated September 6, 1988. They are presented in order of most to least preferred. (At the time these alternatives were suggested, the Sunrise plan contained only alternatives A, B, and C.)

The ACHP's most preferred alternative is a combination of alternatives A and B. Under this alternative, the lodge interior would be redesigned and the lodge would be rehabilitated and restored to a high level as in alternative B. The gas station would remain in its historic location, possibly for use as a ranger station. This alternative would leave the historic scene unchanged, reduce costs of energy, concession operations, site work, and restoration. The main benefit would be that historic properties are preserved intact. This alternative was rejected because annual maintenance problems with the old lodge would not be resolved. There would continue to be a problem with visitor orientation.

The ACHP's second preference would be to build any new required facility on the site of or immediately adjacent to the lodge site. This alternative would retain the visual interrelationship of historic developments at Sunrise. (This suggestion was adapted into alternative D.)

The ACHP's least preferred alternative was a modification of alternative C. This alternative would move the new concessioner facility further east, away from the National Historic Landmark stockade group. This alternative would permit the use of trees to visually screen new buildings from the views from the National Historic Landmark. This alternative was rejected because it would result in new disturbance to soils and vegetation, and would alter the historic site layout.

An alternative presented in an earlier draft of this document would remove the lodge following construction of a new facility between the existing lodge and the comfort station. This alternative would not require construction of a drainage system at the lodge site and would allow visitor services to continue with less interruption during construction. This was rejected because the original site planning would be altered. In addition, the comfort station would be in the immediate foreground of the view of Mount Rainier from the new facility.

The following alternatives were considered early in the planning process but rejected by the NPS for various reasons. An alternative to remove the lodge and construct a new facility with guest lodging was rejected because of the proximity of other lodging outside the park; because a lodging concession would not be cost effective over the short season; and because additional employee housing would be necessary for employees to operate the lodge. The same reasons were the basis for rejection of another alternative which would have included a guest hostel at Sunrise. An alternative to remove the lodge and relocate all concession and NPS services to the stockade buildings was rejected because there is insufficient space available in the blockhouses for both housing and other services. An alternative for removal of the lodge without replacement of concession facilities was rejected because the existing level of concessioner service was deemed to be necessary and appropriate. An alternative in which concession and NPS housing would be relocated near the White River entrance station was rejected because it would increase the travel time between residences and the workplace and perhaps result in morale problems. In addition, utilities at White River entrance are inadequate for housing facilities. An alternative to construct employee housing near the generator building at Sunrise was rejected because of the noise from the generator and because additional meadow would be disturbed.

ENVIRONMENTAL CONSEQUENCES OF MAJOR ALTERNATIVES

Only those categories of resources and operations that could be affected by proposals in the alternatives are discussed in this section. These include cultural resources, soils and vegetation, visitor experience, and park and concessions operations. There are no floodplains in the developed area. There would be no long-term adverse impacts to air or water quality from any of the alternatives. No designated wilderness would be affected.

The U.S. Fish and Wildlife Service has concurred with the determination that there are no currently listed, proposed, or candidate threatened or endangered plant or animal species or critical habitat that would be adversely impacted by any of the proposed actions.

Quantities used in this assessment are estimates and would be further refined during preliminary design. Under all alternatives, construction activities would be carefully monitored, and impacts on natural and cultural resources would be minimized to the greatest extent possible.

A summary comparison of impacts that differ among the alternatives is included at the end of this section.

IMPACTS COMMON TO ALL ALTERNATIVES

None of the alternatives studied would have impacts on known archeological resources. An archeological survey would be conducted prior to any ground-disturbing construction activities. If any archeological resources are uncovered, every effort would be made to avoid impacts to them. If such impacts were unavoidable, actions acceptable to the Washington state historic preservation officer would be taken to mitigate those impacts. Actions would take into account the Advisory Council on Historic Preservation's *Treatment of Archeological Properties: A Handbook* and NPS policies and guidelines.

Recovery of historical archeological data is not a high priority. Mount Rainier National Park has as-built drawings of the Sunrise area and the site is well-documented. Funding would be required to conduct a literature search and evaluation of ethnographic resources, along with consultations where warranted during the design phase of the project.

All alternatives would have impacts on Sunrise Lodge and the Sunrise gas station, both of which are on the park's List of Classified Structures and are listed in the National Register of Historic Places as contributing to the significance of the Sunrise Historic District. Because all proposed activities would take place near the boundary of the Yakima Park Stockade Group National Historic Landmark, they would have an effect on the visual aspects of the landmark as well as the historic district. Rehabilitation and/or preservation treatments would include the maximum retention of cultural values possible, would be designed by qualified historical architects, and would be based on requirements of *The Secretary of the Interior's Standards for Rehabilitation with Guidelines for Rehabilitating Historic Buildings*, NPS policies, and NPS-28, *Cultural Resource Management Guidelines*. In accordance with the requirements of the National Historic Preservation Act, as amended, the NPS would conduct full consultations with the Washington state historic preservation officer and Advisory Council on Historic Preservation prior to project implementation. The consultation would be based on previous comments provided by the Washington state historic preservation officer and would be conducted during the preliminary design phase of the project. If an alternative is chosen that involves demolition of the building, required mitigation would include Historic American Building Survey (HABS) documentation. Under alternatives C and D that involve removal of the old lodge, any salvage value of timbers

and other items from the old lodge would be identified in the design phase of the project, and those materials would be held for use during new construction. Use of salvaged items in new construction would assist in meeting sustainable design goals.

Soil types, plant species present, and a seasonally high water table indicate that wetlands may be present. The NPS Water Resources Division recommends that a definitive wetlands determination of the site be made. If wetlands would be affected by the proposal, a permit under section 404 of the Clean Water Act may be required and would be obtained from the U.S. Army Corps of Engineers prior to ground disturbance. Because the proposal involves alterations on previously disturbed sites, the amount of new disturbance would be very small and no problems are anticipated in obtaining a 404 permit. The proposed method of draining the basement of the existing lodge or the new facility constructed on the same site would route the water under the parking lot, where it would continue to drain downslope towards the White River. The natural and beneficial wetland values of the site would be unchanged by any of the proposals.

Orienting the first-time visitor towards the intended initial contact point in the visitor center is difficult, given the historic site layout that places the lodge as the first major structure encountered by the arriving visitor. This layout is retained under alternatives A, B, and D. Retention of the lodge would not solve the orientation problem. A new facility, as proposed under alternatives C and D, would also draw visitors. To partially mitigate the orientation problem, the ranger station portion of the new facility proposed under alternative C or D would offer signs and information directing visitors to the visitor center. The increased prominence of the new ranger station would draw visitors' attention more than the present ranger station in the basement of the lodge or in the relocated gas station, as proposed under alternative B.

All alternatives propose to rehabilitate the comfort station to make it accessible to handicapped persons. The additions for handicap access would have no effect on the characteristics that make the building eligible for the National Register.

Redesign and landscaping of the parking area and provision of an entrance sign are common to all alternatives. The addition of landscaping to the Sunrise entrance and parking area would reduce the adverse impact of the large asphalt area on the scenic quality of the complex.

All alternatives call for redesign of the existing parking lot. Part of the graveled overflow area would be incorporated into the entrance area and part would be revegetated. While this would enhance the appearance of the Sunrise entrance, it would reduce the available designated parking from the current 246 spaces. (The number of parking spaces remaining after redesign varies from 182 to 226 in the four alternatives, including handicapped and oversize vehicle spaces.) Use of the graveled overflow parking as part of the redesigned lot would reduce the area available for overflow parking on those sunny weekend days, holidays, and other peak use days when the main paved lot is full. This would frustrate up to several hundred visitors who are unable to find a parking space. As construction at Sunrise commences, the full complement of overflow parking will be used as long as sensitive resources are protected, visitor safety can be assured, and planned construction proceeds unimpeded.

Park transportation issues, including access to the Sunrise area, will be addressed more comprehensively in the revision of the General Management Plan (GMP) scheduled to begin in 1993. Any mitigation measures that are needed to resolve vehicle access issues at Sunrise will be identified as a part of the transportation section of the GMP. Until the parking issue can be resolved through the GMP process, all environmentally feasible overflow parking spaces will be used at Sunrise.

Potential impacts of a traffic management plan on visitors would depend on the approach used. If visitors are not allowed to drive a private vehicle to Sunrise when the area is at its full

capacity, they may choose to disperse to other areas of the park, which would subsequently increase crowding at other areas such as Paradise.

IMPACTS ON CULTURAL RESOURCES

Alternative A

Sunrise Lodge. This alternative, which proposes to take all actions necessary to meet current health, life safety, and building safety codes and preserve the lodge from continued deterioration, would alter structural characteristics of the building. However, under the revised regulations of the Advisory Council on Historic Preservation's "Protection of Historic Properties" (36 CFR 800.9), this effect would not be adverse because it would maintain and protect the characteristics that make the building eligible for the National Register.

Gas Station. This alternative proposes to restore the exterior of the gas station; interior treatment and use would be determined at a later date. Implementation of this alternative would affect the building's significant characteristics. However, under the Advisory Council's revised regulations, the effect would not be adverse because it would maintain and protect the characteristics that make the building eligible for the National Register.

Alternative B

Sunrise Lodge. This alternative proposes to rehabilitate the lodge as in alternative A, with additional work to improve functions and circulation. The additional work – construction of a new entrance and porch, for example – would significantly and permanently affect the building's external appearance, as well as structural characteristics. However, adaptive rehabilitation would preserve the building from continued deterioration. As under alternative A, this effect would not be adverse.

Gas Station. This alternative proposes to restore the exterior of the building as in alternative A. The interior would be rehabilitated and the building reused as a ranger/first-aid station. The gas pump cover would house an interpretive panel. The building and pump cover would be moved to the west side of the lodge to provide better trailhead orientation, to enhance opportunities for outdoor interpretation and to allow handicapped access. The impacts from restoration and rehabilitation of the gas station would be the same as in alternative A. Although isolation of the building from its historic setting would constitute an adverse effect, under the provisions of the Advisory Council's "Protection of Historic Properties" (36 CFR 800.9), restoration and adaptive reuse of the structure would be a beneficial effect. The National Park Service would consult with the Washington state historic preservation officer and the Advisory Council to develop appropriate mitigating measures for any adverse effects. These measures might include production of drawings and photographs that show the building in its original setting and an interpretive program that depicts that setting and explains the reasons for the building's relocation.

Alternative C

Sunrise Lodge. The removal of Sunrise Lodge under this alternative would be an adverse effect on the building. Implementation of this alternative would require extensive consultations between the National Park Service, Washington state historic preservation officer, and Advisory Council as specified in the Advisory Council's regulations.

The new ranger station/concession facility would be designed to complement the architectural style featured in the adjacent Yakima Park Stockade Group National Historic Landmark.

Gas Station. The impacts would be the same as in alternative A. This alternative proposes to restore the exterior of the gas station and adapt the interior for reuse as a resource management shop. Implementation of this alternative would affect the building's significant characteristics. However, under the Advisory Council's revised regulations, the effect would not be adverse because it would maintain and protect the characteristics that make the building eligible for the National Register.

Alternative D

Sunrise Lodge. This alternative, like alternative C, would have an adverse impact on Sunrise Lodge because of removal of the building. Implementation of this alternative would require extensive consultations between the National Park Service, the Washington state historic preservation officer, and the Advisory Council on Historic Preservation as specified in the Advisory Council's regulations.

The placement of the new structure on the site of the old lodge would maintain the historic site layout of the Sunrise area. The new ranger station/concession facility would be designed to complement the architectural style featured in the adjacent Yakima Park Stockade Group National Historic Landmark.

Gas Station. The impacts would be the same as under alternatives A and C in which the exterior of the gas station would be restored and the interior adaptively reused as a resource management shop. Implementation would affect the building's significant characteristics. However, under the Advisory Council's revised regulations, the effect would not be adverse because it would maintain and protect the characteristics that make the building eligible for the National Register.

Roads and Trails. Transplanted trees and other revegetation and landscaping materials would screen the service road from the stockade complex and from the parking area and entrance road. Portions of the existing service roads would be converted into pedestrian trails or restored and revegetated. Moving the service road away from the boundary of the historic landmark would improve the appearance of the area, a beneficial effect on the historic stockade group.

IMPACTS ON SOILS AND VEGETATION

The impacts on soils and vegetation would involve site grading for all alternatives and excavation to provide drainage (alternatives A, B, and D) or foundations (alternatives C and D). Under all of the alternatives, the area of subalpine vegetation disturbed would be small compared to the total area of subalpine vegetation at Sunrise. The design would be adjusted to avoid trees wherever possible. Any trees disturbed by proposed construction would be transplanted as part of the revegetation prescription. The park staff would be responsible for tree salvage.

Revegetation would be required for disturbed areas under all alternatives. Disturbed areas include actual construction disturbance as well as indirect disturbance caused by trampling and presence of heavy equipment. Construction fencing would be used where possible to limit the area of indirect impacts. Trees that are to be saved would be fenced. If possible, fencing should allow 25 feet of space around tree stems to protect root systems. The exact amount of revegetation required cannot be calculated precisely until a final design is approved. Revegetation amounts given here are minimum estimates and will be further refined during the design process.

Revegetation activities would proceed under the direction of the park staff. Vegetation removed during construction would be salvaged to the greatest extent possible for use in restoring areas disturbed by this project. To protect the genetic integrity of park stocks, species used in revegetation would be endemic to the park. Seed sources and species used would be approved by the park staff. Revegetation activities would proceed as quickly as possible to minimize erosion of disturbed soils and time available for colonization by exotic species. Temporary erosion control measures such as natural fiber matting might be necessary until revegetation started to occur. Soil supplements may be necessary to improve growing conditions for new plantings.

Alternative A

Improvements at the lodge to meet building and life safety codes and replacement of the oil tank would disturb a maximum of 13,000 square feet (0.30 acre) of soils and meadow vegetation, most of which has been previously disturbed by lodge construction and repairs. Two groups of trees within the 40-foot-wide construction zone around the building would be protected from construction impacts. Revegetation activities around the building perimeter would restore vegetation, which should become fully established within 20-25 years. Improving drainage from the building foundation would entail piping water under the parking area and then draining it into a subsoil drainage system downslope from the area. A 100-foot-long by 1-foot-wide trench would be excavated to lay the perforated drainage pipe south of the parking area, affecting about 1,200 square feet (0.03 acre).

Restoration of the gas station would affect about 600 square feet of previously disturbed soils and vegetation.

Constructing a handicapped accessible path from the parking area to the visitor center's north entrance and making the comfort station accessible would affect about 2,400 square feet (0.06 acre) of soils and vegetation, most of which was previously disturbed. Following construction, 1,080 square feet (0.02 acre) would be restored and revegetated.

The addition of landscaped islands in the parking lot and restoration of the entrance road realignment would require about 32,650 square feet of revegetation.

The construction impacts on soils and vegetation under this alternative would affect 14,800 square feet (0.34 acre). About 15,880 square feet (0.36 acre) would be restored and revegetated following construction. Parking lot and entrance road revegetation are not included in this amount.

Alternative B

Lodge construction impacts on soils and vegetation would be the same as under alternative A, except that a west entry porch would be added to provide access for handicapped persons, requiring 340 square feet less revegetation work following construction.

Relocating the gas station between the lodge and comfort station and constructing a new plaza and connecting trails would affect a maximum of 18,200 square feet (0.41 acre) of meadow vegetation, of which 13,800 square feet (0.32 acre) would be restored. Restoring the gas station area, including the vehicle drive-through, area would restore 12,500 square feet (0.29 acre).

Building a handicap-accessible trail to the visitor center and making the comfort station accessible would affect 2,400 square feet (0.06 acre), as under alternative A. Following construction, 1,080 square feet (0.02 acre) would be restored and revegetated.

The addition of landscaped islands to the parking area and restoration of the entrance realignment would require 38,935 square feet (0.89 acre) of revegetation.

A total of 34,800 square feet (0.80 acre) of meadow vegetation would be affected, and approximately 41,320 square feet (0.95 acre) would be restored under this alternative (not including parking lot revegetation).

Alternative C

Constructing a new ranger station/concession facility and interpretive plaza and relocating 700 feet of the service road would affect 28,540 square feet (0.65 acre) of existing meadow vegetation. Approximately six isolated trees would also be affected by building construction, but these trees are not part of the older clumps south of the blockhouses. Because these trees are younger, they would be salvaged for use in revegetation and landscaping. Older tree clumps would be fenced off to prevent inadvertent construction damage. Meadow vegetation from the disturbed areas would be salvaged and transplanted. Removing the lodge would involve restoring the lodge site and service access road, totaling approximately 23,760 square feet (0.55 acre).

Restoring the gas station would affect about 600 square feet of previously disturbed soils and vegetation, as under alternative A. Revegetation of disturbed meadow and the margin of the access road following restoration of the gas station would restore 1,560 square feet (0.04 acre).

New handicap-accessible trails would affect 3,450 square feet (0.08 acre) of soils and vegetation under this alternative.

The addition of landscaped island to the parking lot and restoration of the entrance road realignment would require 34,900 square feet (0.80 acre) of revegetation.

The total area of new disturbance under this alternative would be 45,590 square feet (1.05 acres), with 51,640 square feet (1.18 acres) of previously disturbed area restored (not including parking lot revegetation).

Alternative D

Constructing a new ranger station/concession facility and adding 560 feet of new service road would affect 29,040 square feet (0.67 acre) of soils and meadow vegetation. Building construction would affect several isolated subalpine fir clumps. One clump of 5 trees would be removed for construction of the new service road. The tallest trees in this clump are about 4 feet high and are probably 60-70 years old. Several trees adjacent to the comfort station would be removed for placement of a pedestrian walkway. The total number of trees to be removed is estimated at 50. All trees would be salvaged if possible for later revegetation and transplanted for landscaping the parking islands or for restoring disturbed areas. Meadow vegetation that would be disturbed by construction would also be salvaged and used for site restoration and revegetation. An adequate subsurface system to alleviate the drainage problem would be incorporated as under alternative A.

Restoring the gas station would affect 800 square feet. Adding 4 tour bus parking spaces at the gas station would disturb an additional 5,200 square feet. The disturbance would total 6,000 square feet (0.14 acre). Most of the soils were previously disturbed. Restoration and revegetation of the gas station and associated parking would total 800 square feet (0.01 acre).

Construction of pedestrian walkways, trails, and the interpretive kiosks would impact about 22,305 square feet (0.51 acre), most of which is already disturbed. Following construction, about 2,240 square feet (0.05 acre) would be restored and revegetated.

Redesign of the parking lot entrance would impact about 9,500 square feet (0.22 acre) of soils and vegetation on the south side of the entrance road. Some of this area has been impacted by overflow parking but some is undisturbed. Following construction, about 10,400 square feet (0.24 acre) would be restored and revegetated. The revegetation includes landscaping of the new entrance area. Landscaping would include salvaged materials or would be endemic species approved by the park.

The construction impacts on soils and vegetation under this alternative would affect 66,845 square feet (1.53 acres). About 25,340 square feet (0.58 acre) would be restored following construction.

IMPACTS ON VISITOR USE AND EXPERIENCE

Alternative A

Sunrise Lodge. Visitor safety would be greatly improved because of actions to bring the lodge up to building and life safety codes and accessibility standards. The appearance of the building itself would be slightly improved by replacing deteriorating exterior finishes, doors, and windows. No change would be made to the east side of the lodge, so that the "uncompleted" architectural character would be perpetuated. Shingle siding would continue to deteriorate rapidly due to harsh weather and would require repeated maintenance to avoid an unsightly appearance.

Building sizes and scales would continue to vary considerably, creating two major focal points and several smaller ones. Visitor orientation, especially for first-time visitors, would continue to be directed toward concession services because of the dominance of the lodge, rather than toward interpretation of resources at the visitor center.

Gas Station. Restoring the gas station for a future use might contribute another visitor use facility to the Sunrise area, depending on the future designated use. The primary benefits to visitors from restoring the gas station would be aesthetic.

Entry, Parking, and Roads. The minor realignment of the entrance road would slightly improve the visitor's sense of entry into the Sunrise developed area. The use of landscaped medians would screen the parking area from the buildings, improving the aesthetic appearance of the area.

Trails and Access for Handicapped Persons. Visitor orientation to trails would remain poor because there would be no centrally located trailhead to offer information about trails. Providing a handicap-accessible path to the visitor center and ramps to the comfort station would improve access for elderly and handicapped persons and meet accessibility codes.

Revegetation Activities. Revegetating areas disturbed by construction – 48,530 square feet (1.11 acres) total – would eventually reduce visual impacts. Color contrasts between natural vegetation and hydroseeded or mulched areas would be marked during the early stages of revegetation.

Alternative B

Sunrise Lodge. Visitor services would be improved to a greater extent under this alternative than under alternative A, because construction of a new gift shop and dining room would allow the opportunity to design for functional efficiency. An entrance porch would provide handicapped access that blends in with the architectural character of the lodge. Visitors would no longer contact rangers in the basement of the lodge because ranger functions would be in the relocated gas station. Other orientation problems from maintaining the existing lodge at its present location would be the same as under alternative A.

Gas Station. Relocating, restoring, and adaptively reusing the gas station in its new location between the comfort station and lodge would result in a consolidated visitor services area. At the new location, the ranger station would include an interpretive plaza and trailhead and would be more effective in providing information to visitors than the existing ranger station in the lodge basement. Hiker orientation would be improved by locating the ranger information station adjacent to the trailhead and formalizing the trailhead. Opportunities for outdoor interpretation would be enhanced by the addition of the interpretive plaza.

Entry, Parking, and Roads. Formalizing the entrance and providing an entrance sign would enhance visitors' sense of arrival. Landscaped parking islands and the pedestrian drop-off zone in front of the blockhouse complex would provide a more logical sequence of arrival than under alternative A.

Trails and Access for Handicapped Persons. Handicapped access to the visitor center and comfort station would be the same as under alternative A. Handicapped access to the lodge would be improved by constructing an entrance porch. Locating the trailhead near the new ranger station would improve visitor orientation to trails.

Revegetation Activities. As under alternative A, revegetating disturbed areas – 80,255 square feet (1.84 acres) total – would eventually reduce the visual impacts of construction once meadow vegetation was reestablished.

Alternative C

Ranger Station/Concession Facility. This alternative would provide more efficient visitor services than alternatives A and B because all new construction would be designed specifically to meet current visitor needs. The interpretive plaza would provide a view of Mount Rainier and an outdoor site for interpretive talks. Under this alternative, the new building would be in the foreground of the view of Mount Rainier from the parking lot and the lower meadow but the view of the mountain from the building would be uninterrupted by other development.

The new building would be designed to be complementary to the rustic style of the stockade complex. Facilities would meet all codes and be fully accessible and energy efficient.

Gas Station. Restoring the gas station would retain and preserve this historic structure. It would be used as a resource management shop and for interpretation of revegetation activities at Sunrise.

Entry, Parking, and Roads. Improvements would be similar to those of alternative B. Removal of the lodge would provide an uninterrupted vista of the subalpine meadow from the new building site.

Trails and Access for Handicapped Persons. Visitor orientation to trails would be improved by providing trailhead information at the new ranger station. The improvement would not be as great as under alternatives B and D where a formal trailhead is added.

Accessibility improvements would be the same as in alternative A, with the addition of an accessible trail from the south blockhouse to the new interpretive plaza.

Revegetation Activities. Removing the lodge and making other improvements would require restoring an 86,540-square-foot area (1.99 acres). Revegetation activities would have the same effects as under other alternatives.

Alternative D

Ranger Station/Concession Facility. Under this alternative, most new development would be clustered on a previously disturbed site. The impacts on soils and vegetation from visitor use would be reduced by connecting all visitor use areas with a system of walkways. Compared to alternative C, the facility would provide better orientation to most of the trails and the picnic area. First-time visitor orientation would be improved by increasing the prominence of the ranger contact facility compared to the concession facility.

As under alternative C, this alternative would provide more effective visitor services and greater aesthetic improvements than alternatives A and B. Alternative D would provide more efficient use of previously disturbed areas than would alternative C because it would use the old lodge site and incorporate old road scars and current service roads as trails.

The outdoor seating area would provide views of Mount Rainier. Provision of two interpretive kiosks would increase the opportunities for interpretation. The kiosks would provide an outdoor site for interpretive talks that would be convenient to the ranger contact facility, the visitor center, and trails.

Visitors would be inconvenienced during construction by the presence of construction machinery and personnel, particularly during parking lot work. The reduction in gift, supply, and food service until the new facility is completed would inconvenience some visitors.

The proposed building would complement the rustic architectural style of the stockade complex, the comfort station, and the gas station. Facilities would meet all codes and be fully accessible and designed for energy efficiency.

Gas Station. Restoring the gas station would preserve and retain this historic structure. As under alternative C, it would be used as a resource management shop and for interpretation of revegetation activities at Sunrise.

Entry, Parking, and Roads. The scenic overlook turnout near the entrance sign would provide an additional opportunity for visitor photography.

The passenger dropoff area in front of the lodge would allow buses to pick up and drop off passengers without having to stop and back up to negotiate the turn. A dropoff area and a distinct entrance with bollards would reduce visitor confusion by orienting them towards the ranger contact facility.

Moving the picnic area service road to the edge of the developed area would improve the overall aesthetic appearance of the area. Converting the existing service roads to pedestrian trails would eliminate pedestrian/vehicle conflicts in the center of the development.

Trails and Access for Handicapped Persons. Visitor orientation to trails would be improved by providing a formal trailhead with interpretive kiosk. Developing walkways from the former service roads and restoring the scars would improve the appearance of the area. Walkways would unify the site by tying the new facility directly to the historic north entrance of the visitor center and enhancing pedestrian circulation.

Access improvements at the visitor center and comfort station would be the same as under alternative A. Sitting benches would be provided along the walkways so that visitors may rest while enjoying the views of Mount Rainier and the subalpine meadows.

Revegetation Activities. Removing the lodge, constructing a new ranger station/concession facility, and making other improvements would require restoring an area of 25,340 square feet (0.58 acre). The effects of revegetation activities would be the same as under the other alternatives.

IMPACTS ON PARK MANAGEMENT AND CONCESSION OPERATIONS

Alternative A

Bringing the lodge up to code would provide safer working conditions for NPS and concession employees. This alternative would not improve visitor orientation problems, so that park and concession staff would continue to spend extra time answering orientation questions. Maintenance problems due to the effects of the harsh climate on the lodge shingle siding would continue. The subsurface drainage problem would be corrected.

The lodge would be closed during the two-season construction period, resulting in staff disruption, loss of concessioner revenue, and fixture and equipment storage costs. Use of a temporary modular structure in the stockade would mitigate loss of space in the lodge for ranger and first aid functions. Because the building would remain untailed to current functions, operations would be inefficient, and energy, seasonal opening/closing costs, annual shingle repair costs, and general maintenance costs would remain high.

Landscaped islands would increase time required for snow removal from the parking area.

Alternative B

Ranger services would be improved under this alternative because these functions would be centrally located and more conspicuous than in the existing basement location. Interpretive functions would also improve with the addition of the plaza in front of the relocated gas station. Because the ranger station/plaza would also serve as a trailhead, visitor orientation to trails would improve.

Concession operations would benefit from new floor layouts that would improve operation and service efficiency. Concession employees would benefit under this alternative because fire egress would be improved from the second floor.

Seasonal opening and closing and overall energy costs would be reduced. Annual shingle repair and general maintenance costs would remain high. Maintenance problems due to the effects of harsh conditions on the lodge shingle siding would continue. The subsurface drainage problem would be corrected.

As in alternative A, the lodge would be closed during the two-season construction period, resulting in staffing disruption, loss of revenue, and fixture and equipment storage costs. Use of a temporary modular structure in the stockade would mitigate loss of space in the lodge for ranger and first aid functions.

Landscaped islands would increase time required for snow removal from the parking area. Time would be comparable to that required under alternative A.

Alternative C

Ranger services would be more prominent and therefore more effective in reaching visitors than from the basement of the lodge. Ranger and concession operations would be more efficient because the new facility would be designed to meet specific requirements. Energy, opening and closing, and general maintenance costs would be lower than under the first two alternatives. Annual shingle repair costs would be eliminated.

Temporarily relocating ranger services or closing down concession operations for the two-season construction cycle would not occur since the existing lodge would remain open while the new facility was under construction. This would not disrupt ranger operations to as great an extent as moving the operation to temporary quarters.

Time required for snow removal around parking islands would be greater than under existing conditions but would be less than under alternative A and B.

Alternative D

As in alternative C, ranger services would be more effective in reaching visitors because of their increased prominence. The location of the trailhead and pedestrian walkways between the ranger contact facility and the interpretive facilities would enhance the physical and visual presence of NPS rangers in the Sunrise area. Greater ranger presence would enhance the opportunities for resource interpretation and preservation.

As under alternative C, ranger and concession operations would be more efficient because the new facility would be designed to meet specific requirements. Energy, opening and closing, and

general maintenance costs would be lower than under the first two alternatives and comparable to costs under alternative C. Annual shingle repair costs would be eliminated, as under alternative C. The subsurface drainage problems would be alleviated.

Use of a temporary modular structure in the stockade would mitigate loss of space in the lodge for ranger and first aid functions.

The concessioner would probably lose some revenues during the time that reduced services are available but costs would be lower because less employees would be required to run a reduced operation.

Time required for snow removal from the parking area would be less than under other alternatives because there would be no islands.

Summary of Impacts by Alternative

	Alternative A – No Action	Alternative B – Rehabilitate Lodge and Relocate Gas Station (Minimum Requirements)	Alternative C – Construct New Ranger Station/Concession Facility Southwest of Parking Area	Alternative D – Construct New Ranger Station/Concession Facility Northwest of Existing Lodge (Preferred)
IMPACTS				
Cultural Resources	Rehabilitating the lodge would protect and maintain the structure's significant characteristics.	Improving functions and circulation at the lodge would affect historical appearance of the building.	Removing the lodge would be an adverse effect.	Same as alternative C.
	Restoring the exterior of the gas station would protect and maintain the structure's significant characteristics.	Moving the gas station from its historic location would be an adverse effect, but restoration would be beneficial.	Same as alternative A.	Same as alternative A.
	Providing accessibility to the comfort station would not affect the structure's significant characteristics.	Same as alternative A.	Same as alternative A.	Same as alternative A.
	Providing accessible trails would not affect the NHL's significant characteristics.	Same as alternative A.	Same as alternative A.	Same as alternative A.
	Improvements to the historic road and parking area would be beneficial by improving upon an unsightly area on boundary of national historic landmark and within the historic district.	Same as alternative A.	Same as alternative A. Relocation of service road behind new facility would enhance aesthetics. Historic site layout would be altered.	Same as alternative A. Converting service roads to pedestrian trails would improve an unsightly area on the boundary of the historic landmark. The location of the new facility would maintain the historic site layout.
	All activities would be preceded by archeological clearance.	Same as alternative A.	Same as alternative A.	Same as alternative A.

	Alternative A – No Action	Alternative B – Rehabilitate Lodge and Relocate Gas Station (Minimum Requirements)	Alternative C – Construct New Ranger Station/Concession Facility Southwest of Parking Area	Alternative D – Construct New Ranger Station/Concession Facility Northwest of Existing Lodge (Preferred)
Soils and Vegetation	<p>The existing lodge contains 16,466 sq ft in 2 stories and a basement. The footprint is 6,800 sq ft (0.16 acre).</p> <p>Improvements would affect 14,800 sq ft (0.34 acre) of soils and vegetation, most of which are previously disturbed. Approximately 48,530, sq ft (1.11 acres) would be revegetated in areas disturbed by construction and in entry/parking islands.</p> <p>Revegetation plan would be formulated to reclaim disturbed areas.</p>	<p>The rehabilitated lodge would contain 15,256 sq ft in 2 stories and a basement. The footprint would be 7,100 sq ft due to the addition of an entrance porch (0.16 acre).</p> <p>Rehabilitation of lodge and relocation of gas station would affect 34,800 sq ft (0.80 acre). Approximately 80,255 sq ft (1.84 acres) would be revegetated in disturbed areas and in entry/parking areas.</p> <p>Same as alternative A.</p>	<p>The new facility would contain 10,150 sq ft in 1 story and a basement. The footprint would be 6,218 sq ft (0.14 acre).</p> <p>Constructing a new facility would affect 45,950 sq ft (1.05 acres). Approximately 86,540 sq ft (1.99 acres) would be revegetated.</p> <p>Same as alternative A, including salvaging meadow vegetation and tree clumps.</p>	<p>The new facility would contain 11,192 sq ft in 2 stories. The footprint would be 9,932 sq ft (0.23 acre).</p> <p>Constructing a new facility would affect 66,845 sq ft (1.53 acres). Approximately 25,340 sq ft (0.58 acre) would be revegetated.</p> <p>Same as alternative C.</p>
Visitor Experience and Aesthetics	<p>Bringing the lodge up to code would improve visitor and employee safety, but would not correct operational inefficiencies or reduce high energy and maintenance costs. Visitor orientation would remain directed toward concession services rather than resource interpretation.</p> <p>Restoration of the gas station would improve appearance.</p>	<p>Rehabilitating lodge would improve visitor services to a greater extent than alternative A. Providing new lodge entrance would improve visitor circulation and aesthetics. Overall orientation problems from maintaining lodge at existing location would be the same as alternative A.</p> <p>Consolidating visitor services in the relocated and restored gas station between the comfort station and lodge would improve visitor orientation and access to information.</p>	<p>Visitor services would be improved by facilities better tailored to current uses than under either alternative A or B. Scale of building would be aesthetically pleasing and smaller. The facility would feature unencumbered views of Mount Rainier.</p> <p>Same as alternative A. Also, the structure would serve as a resource management shop with interpretation of the ongoing revegetation activities at Sunrise.</p>	<p>Visitor services would be improved as under alternative C. The new building would have views of Mount Rainier. Visitor orientation would be improved by increasing the prominence of the ranger contact facility.</p> <p>Same as alternative C.</p>

Alternative A – No Action

The addition of parking islands would improve appearance of parking area. Parking for 177 cars and 10 buses/RVs.

Access to the visitor center and comfort station would be improved for handicapped persons. A trailhead would not be provided, which would perpetuate orientation problems for visitors.

Alternative B – Rehabilitate Lodge and Relocate Gas Station (Minimum Requirements)

A formalized entrance would provide a greater sense of arrival and welcome. Parking medians and dropoff would improve appearance of asphalt area and eliminate driver confusion. Parking for 190 cars and 9 buses/RVs.

Same as alternative A, with the addition of a trailhead at the relocated gas station.

Alternative C – Construct New Ranger Station/Concession Facility Southwest of Parking Area

Same as alternative B. Parking for 175 cars and 7 buses/RVs.

Same as alternative B, with the addition of a trail accessible to handicapped persons from the visitor center/blockhouse to new ranger station/concession facility and interpretive plaza.

Alternative D – Construct New Ranger Station/Concession Facility Northwest of Existing Lodge (Preferred)

A formalized entrance would provide a sense of arrival and welcome. A passenger drop-off zone would orient visitors to the ranger contact facility and improve bus circulation. Parking for 214 cars, including 7 handicapped spaces, 10 RVs and 4 buses.

Access to the visitor center and comfort station would be improved for handicapped persons. An accessible walkway would be provided from the new facility to the historic north entrance vestibule of the visitor center. A trailhead would improve visitor orientation. Conversion of the service road to pedestrian trail would unify development and enhance pedestrian circulation among the buildings, picnic area, and trails. Removal of access road from center to edge of development improves aesthetics, further eliminates driver confusion, and reduces pedestrian/vehicle conflicts.

Alternative A - No Action

There would be no formal outdoor viewing or interpretive areas.

Visitor confusion about the initial contact facility would continue to focus at the lodge where this service is not available.

Alternative B - Rehabilitate Lodge and Relocate Gas Station (Minimum Requirements)

Outdoor interpretation would be provided at the ranger station plaza. The view of Mount Rainier would be over the stockade complex.

Same as alternative A.

Alternative C - Construct New Ranger Station/Concession Facility Southwest of Parking Area

The outdoor terrace would provide areas for dining and interpretation with unimpaired views of Mount Rainier.

Visitor attention would be focused on the new facility but orientation would be accomplished through informational signs when rangers are not present.

Alternative D - Construct New Ranger Station/Concession Facility Northwest of Existing Lodge (Preferred)

The view of Mount Rainier from the outdoor seating area would be interrupted by the stockade group and parking area. The two kiosks would increase the opportunities for interpretation and provide an outdoor area to gather groups for interpretive talks.

As visitors enter the parking area, the circulation pattern and passenger dropoff zone would direct visitors' attention to the new facility. Orientation would be accomplished through informational signs when rangers are not present.

	Alternative A – No Action	Alternative B – Rehabilitate Lodge and Relocate Gas Station (Minimum Requirements)	Alternative C – Construct New Ranger Station/Concession Facility Southwest of Parking Area	Alternative D – Construct New Ranger Station/Concession Facility Northwest of Existing Lodge (Preferred)
Park Management and Concession Operations	<p>Safer working conditions for NPS and concession employees would be provided by bringing lodge up to code. Locating ranger station in lodge basement would remain less than optimal situation.</p>	<p>Working conditions for NPS and concessions employees would be greatly improved over alternative A by rehabilitating the lodge and restoring/reusing the gas station for public contact.</p>	<p>Ranger and concession operations would be more efficient because facilities would be designed specifically for the operations. New facility would be less expensive to operate.</p>	<p>Centralizing pedestrian trails between major facilities provides a greater physical and visual ranger presence, enhancing opportunities for resource interpretation and preservation. Ranger and concession operation efficiency and facility operations costs same as for alternative C.</p>
	<p>Closing the lodge during the two-season construction period would result in concession staffing disruption, loss of revenue, and fixture storage costs. Ranger activities would continue from temporary structure in the stockade.</p>	<p>Same as alternative A.</p>	<p>Closing the lodge would not be required so that staffing disruption, revenue loss, and fixture storage costs would not occur. Ranger activities would continue without interruption.</p>	<p>Impacts from removal of lodge would result in concession staffing disruption. Revenue loss would be partially offset by temporary provision of limited food and gift service from mobile unit. Impact on ranger activities same as alternative A.</p>
	<p>Winter-damaged wall shingles would need replacement annually.</p>	<p>Same as alternative A.</p>	<p>Use of board siding would reduce winter damage.</p>	<p>Same as alternative C.</p>
	<p>Parking islands would increase snow removal time.</p>	<p>Parking area snow removal time would be about the same as alternative A.</p>	<p>Parking area snow removal time would be less than under alternatives A & B.</p>	<p>Parking area snow removal time less than under other alternatives because parking area has no islands.</p>

Alternative A – No Action

Alternative B – Rehabilitate Lodge and Relocate Gas Station (Minimum Requirements)

Alternative C – Construct New Ranger Station/Concession Facility Southwest of Parking Area

Alternative D – Construct New Ranger Station/Concession Facility Northwest of Existing Lodge (Preferred)

COSTS

Development	Major expenditure for minimal improvement at lowest cost.	Cost is 13 percent greater than alternative A.	Major improvement in facilities and visitor services at a cost 15 percent greater than alternative A.	Major improvement in facilities and visitor services at a cost 6 percent greater than alternative A.
Energy	No improvement	47 percent reduction	61 percent reduction	50 percent reduction.
Construction Cost	\$3,797,447	\$4,377,775	\$4,455,174	\$4,020,171
30-Year Life Cycle Cost	\$615,871- most expensive	\$565,878- 8 percent reduction over alternative A	\$288,038- 53 percent reduction over alternative A	\$220,062- 31 percent reduction over alternative A
Total	\$4,413,318 – expenditure over 30 years	\$4,943,653 – most expensive	\$4,743,212 – 7 percent more than minimal improvement for alternative A	\$4,240,133 - construction cost is greater than alternative A but provides major improvement in facilities and visitor services, and corrects site deficiencies noted in Purpose and Need for Action.

APPENDIX A: SUNRISE LODGE CONDITION SUMMARY AND CODE COMPLIANCE

CODE COMPLIANCE

The Sunrise Lodge was constructed in 1931 and has had minimal alteration in its life. Because of age and deterioration, major repair is required. To ensure maximum life and benefit from this effort, the structure will be repaired to comply with the latest codes. These include the Uniform Building, Mechanical, Plumbing, and the National Electrical Code, Life Safety Code (NFPA 101, National Fire Protection Association), the Uniform Federal Accessibility Standards (UFAS), and Public Health Service Standards.

CURRENT CONDITION OF THE SUNRISE LODGE

Fire suppression and egress capabilities are minimal. Fire-rated wall surfaces and doors on the second floor, one fire escape, and a fire detection system have recently been installed.

The kitchen grille is without a fire-rated enclosure, hood, and suppression system. Kitchen equipment is for the most part antiquated.

Wiring for the structure is primarily knob and tube, but it is deteriorating and needs replacement.

New hot water boilers have been added, but the unit heaters and piping system still need to be installed. The domestic and kitchen water heaters need to be replaced.

Underground water has seriously affected the foundation walls and interior pier footings (NPS 1986). Foundation walls are cracking and the piers are settling, causing structural stress of the building frame and an unlevel structure. The wood floor in the southeast basement corner of the ranger/first-aid station is rotted and there is stud wall decay.

MINIMUM CORRECTIONS REQUIRED

The following minimum corrections are required:

Improve life and fire safety and egress through installation of a fire sprinkler system in the second floor corridors, stairway, recreation room, and first floor kitchen. Replace kitchen grille with a new grille, exhaust hood, and venting system with a built-in fire suppression system.

Improve or replace kitchen equipment to meet current Public Health Service requirements.

Completely rewire the structure.

Replace room unit heaters and replumb heating supply line.

Install a new underground fuel oil tank.

Install a groundwater interceptor drain.

Install fire-rated wall and ceiling assemblies on the first floor.

Construct a new foundation and foundation wall and new pier footings; level building.

Remove rotted floor and stud walls in the ranger/first-aid station.

APPENDIX B: COSTS OF ALTERNATIVES

Item	Alternative A	Alternative B	Alternative C	Alternative D
Lodge	\$2,336,917	\$2,466,917	\$2,204,870	\$2,299,464
Lodge removal	0	0	203,377	203,377
Fixture storage	37,662	37,662	0	0
Gas station restoration	170,321	206,293	170,321	170,321
Site construction	306,948	406,988	549,010	579,236
Site revegetation	<u>339,284</u>	<u>560,993</u>	<u>616,266</u>	<u>125,823</u>
FY 92 Gross Construction Cost	3,191,132	3,678,853	3,743,844	3,378,211
Construction Planning	<u>606,315</u>	<u>698,922</u>	<u>711,330</u>	<u>641,860</u>
Total Cost	\$3,797,447	\$4,377,775	\$4,455,174	\$4,020,071

SUMMARY OF ANNUAL COSTS FOR 30-YEAR LIFE CYCLE COSTS

Costs	Alternative A	Alternative B	Alternative C	Alternative D
Energy	\$4,455.08	\$2,343.76	\$1,731.58	\$2,007.62
Other services	<u>3,322.74</u>	<u>3,322.74</u>	<u>3,322.74</u>	<u>3,322.74</u>
Total Energy & Operation	\$7,777.82	\$5,666.50	\$5,054.32	\$5,330.36

30-YEAR LIFE CYCLE COSTING - LODGE ONLY

Based on FY 1991 costs except annual operation and maintenance costs which are actual 1987 expenses. Equal alternative cost items are excluded; only variable quantity items for each alternative are listed for comparison.

	Alternative A	Alternative B	Alternative C	Alternative D
Roofing	\$201,903	\$210,779	\$ 84,417	\$ 0
Exterior wall finishes	38,235	29,808	8,930	6,012
Trim	10,867	10,867	0	0
Exterior painting	22,025	18,462	14,575	13,604
Interior painting	42,662	40,404	26,297	29,002
Annual shingle repair (wall)	18,695	19,024	0	0
Annual general maintenance	95,368	87,476	56,928	62,773
Annual opening and closing	102,826	99,143	64,518	71,137
Energy	<u>83,290</u>	<u>49,915</u>	<u>32,373</u>	<u>33,534</u>
Life Cycle Totals	\$615,871	\$565,878	\$288,038	\$220,062

PROJECT TOTAL COSTS

Construction Cost	\$3,797,447	\$4,377,775	\$4,455,174	\$4,020,071
30-Year Life Cycle Cost	<u>615,871</u>	<u>565,878</u>	<u>288,038</u>	<u>220,062</u>
Total	\$4,413,318	\$4,943,653	\$4,743,212	\$4,240,133

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