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National Park Service

U.S. Department of the Interior

Waterton- Glacier International Peace Park

Montana



**Avalanche Hazard Reduction by Burlington
Northern Santa Fe Railway in Glacier National Park
and Flathead National Forest, Montana
Record of Decision**

Approved:

Michael D. Snyder

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Intermountain Regional Director

National Park Service

**UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE**

RECORD OF DECISION

**AVALANCHE HAZARD REDUCTION BY BURLINGTON NORTHERN SANTA
FE RAILWAY IN GLACIER NATIONAL PARK AND FLATHEAD NATIONAL
FOREST, MONTANA**

ENVIRONMENTAL IMPACT STATEMENT

Waterton-Glacier International Peace Park

Montana

The Department of the Interior, National Park Service (NPS) has prepared this Record of Decision (ROD) on the *Avalanche Hazard Reduction by Burlington Northern Santa Fe Railway in Glacier National Park and Flathead National Forest, Montana Final Environmental Impact Statement* (EIS). This ROD includes a description of the background, a statement of the decision made, synopses of other alternatives considered, the basis for the decision, findings on impairment of park resources and values, a description of the environmentally preferable alternative, a listing of measures to minimize environmental harm, and an overview of the public and agency involvement in the decision-making process.

BACKGROUND

The purpose of the EIS, begun in May, 2005, was to analyze a request by Burlington Northern Santa Fe Railway (BNSF) to use explosives to trigger avalanches in Glacier National Park (GNP). The request was based on the railroad's need to protect employees, Amtrak train passengers, freight, and equipment and to reduce avalanche caused delays along the southern boundary of GNP in John F. Stevens Canyon. The railroad has a legal right-of-way (ROW) across Flathead National Forest (FNF) lands and lies adjacent to the US Highway 2 corridor and the south boundary of GNP. A six-mile length of the railroad through the canyon is threatened by avalanches originating on GNP lands. Flathead National Forest and Montana Department of Transportation (MDT) are cooperating agencies on the EIS.

On January 28, 2004, the railroad through John F. Stevens Canyon was blocked by several avalanches for 29 hours. After a number of train cars were hit or blocked by avalanches, BNSF requested an emergency special use permit to perform immediate explosive avalanche control on GNP lands. The park considered the request and issued a 3-day emergency permit. However, the snow stabilized naturally and explosive use was not necessary. BNSF then requested a special use permit from GNP for a permanent explosive avalanche hazard reduction program in the park including the use of military artillery. They were informed that an EIS was necessary to consider the proposal.

BNSF contracted with Chugach Adventure Guides, a private company, to analyze the avalanche hazard in the canyon. Their report *Avalanche Risk Analysis John Stevens Canyon, Essex, Montana* (Hamre and Overcast 2004) identifies the avalanche potential for 14 avalanche paths along the railroad corridor. The risk analysis described several alternatives including explosive use, snowshed construction, and a combination of

explosive use and snowshed construction. The report stated that 5,040 feet of new snowsheds, would decrease the avalanche risk most effectively and provide 24-hour protection to the tracks. Explosive avalanche control would be the most cost effective alternative in the short term while snowshed construction was the most expensive alternative.

GNP and the public have serious concerns about the impacts of using explosives on park resources and values, including; winter wildlife habitat, threatened and endangered species, natural sound, and recommended wilderness.

DECISION (SELECTED ACTION)

Under the selected action, GNP will issue a special use permit to BNSF for installation of a weather station and a snow depth sensor on GNP lands. Additionally, if the railroad indicates a desire to install avalanche detection devices within the park, GNP will issue BNSF a special use permit for the system (subject to review and approval). Further NEPA review may be required on these actions depending on what is proposed. GNP will continue to issue BNSF special use permits to perform non-explosive stability testing, avalanche monitoring, and avalanche forecasting within the park. Permanent structures in the park under the selected action may include avalanche detection systems, a weather station, a snow depth sensor, and small portions of snowsheds if constructed, depending on design and location.

Explosive use will not be permitted under the selected action except under emergency extenuating circumstances, in the event that human lives or resources are at risk and after all other options have been exercised by the railroad including delays.

GNP recommends that BNSF construct additional snowsheds and add on to the existing snowsheds in those paths defined by Hamre and Overcast (2004) as having high avalanche hazard. Constructing up to five new snowsheds and extending seven existing snowsheds on the railroad right-of-way would provide complete protection of the tracks through this area of the canyon. The recommendation to build snowsheds is an action that the NPS, FNF, and MDT do not have jurisdiction or authority to require BNSF to follow. Furthermore, while GNP is prepared to issue the railroad special use permits for the above non-explosive avalanche hazard reduction activities, BNSF may decide that it will not pursue any of the actions described in the selected action. BNSF has not committed to building or extending the recommended snowsheds.

Key Actions

- GNP will permit BNSF to install a new weather station and snowdepth sensor on NPS lands in the canyon.
- Avalanche signal wire will continue to be used on the railroad ROW in avalanche paths without snowsheds or in snowshed bypass areas.
- GNP will permit BNSF to install avalanche detection systems such as infrasonic systems, geophones, and/or Doppler radar within or adjacent to unprotected avalanche paths within the park.
- GNP will continue to issue BNSF special use permits to perform non-explosive stability testing, avalanche monitoring, and avalanche forecasting within the park.
- GNP recommends that BNSF build snowsheds in avalanche paths that currently do not have snowsheds. GNP recommends that BNSF lengthen existing snowsheds that do not provide sufficient protection from avalanche activity.
- GNP will not permit explosive use under the selected action. GNP will only permit emergency explosive use by BNSF under emergency extenuating circumstances, after all other options, including railroad delays, have been exercised.

Mitigating Measures/Monitoring

- The weather stations and snow depth sensor will be temporary installations and will be removed in the event that BNSF constructs snowsheds.
- The weather stations, snow depth sensor, and avalanche detection device installations will be painted with natural colored paint to reduce their visibility and intrusion within recommended wilderness.
- In the event that BNSF constructs snowsheds, GNP recommends that they incorporate wildlife crossings into the structures where appropriate. GNP recognizes that BNSF has infrastructure standards that they must meet. Wildlife specialists from GNP, FNF, and USFWS will work closely with BNSF to determine where wildlife crossings would be effective and what type of crossing structure should be incorporated into new snowsheds.
- GNP also recommends that BNSF design historically compatible extensions on the existing historic snowsheds. Cultural Resource Specialists from both GNP and FNF will work closely with BNSF to assist with this effort.

OTHER ALTERNATIVES CONSIDERED

Four alternatives were considered that are described in detail in the Draft EIS. Below is a summary of the alternatives other than the preferred alternative that were analyzed.

Alternative A: No Action

Non-explosive avalanche hazard reduction activities currently employed by BNSF would continue to be used along the railroad. BNSF would continue to maintain eight existing snowsheds. GNP would continue to permit BNSF or their representative to conduct non-explosive stability testing and weather data collection within the park. This information would be used to assess avalanche hazard. During periods of high avalanche hazard, BNSF or their representative would recommend restrictions or delays, based on the hazard assessment, to reduce the possibility of avalanche-caused incidents along the

railroad. Avalanche signal wire would continue to be used and maintained for avalanche detection along the railroad. No new structures would be built on park or forest lands and explosive avalanche hazard reduction would not be permitted in GNP.

Alternative C: Glacier National Park, Flathead National Forest, and Montana Department of Transportation would recommend that BNSF construct or modify snowsheds. Glacier National Park would issue BNSF a 10-year special use permit for explosive avalanche hazard reduction during snowshed construction.

GNP, FNF, and MDT would recommend that BNSF build snowsheds in paths without avalanche protection. A total of 5,040 feet of snowsheds would be constructed if the recommendations were followed from the report *Avalanche Risk Analysis John Stevens Canyon, Essex, Montana* (Hamre and Overcast 2004). Upon receipt of a BNSF commitment to construct snowsheds, GNP would issue a special use permit for up to ten years of explosive use in the park along the US Highway 2 corridor during snowshed construction. The permitted explosive delivery methods would be handcharges, Avalauncher, helicopter delivery, Avalhex type systems, and/or blaster boxes. Military artillery would not be permitted due to incompatibility with park values, shrapnel that would be left in start zones, the large noise footprint from the propellant explosion at the gun mount and ammunition detonation in the start zone, and the possibility for unexploded ordnance to occur. Avalhex type systems and/or blaster boxes would be temporarily installed in high elevation start zones. Traffic would be delayed on US Highway 2 and along the railroad during the explosive use periods. Infrasonic avalanche detection systems or geophone systems would be permitted within GNP or FNF lands. BNSF would fund an extensive resource-monitoring program during the 10 year program to determine the impact of explosive use on wildlife, water, soils, vegetation, natural avalanche processes, and natural sound. The monitoring program would extend 5 years from the end of the program to determine the long-term resource impacts of the program. An interagency technical team would develop monitoring thresholds, which would guide annual permitting and explosive use conditions. The annual permitting and explosive use would be subject to change if impact threshold conditions were exceeded.

Alternative D: Glacier National Park would issue BNSF a special use permit for a permanent explosive avalanche hazard reduction program.

This alternative is the original proposal developed and submitted by BNSF with some additions by GNP. BNSF officials reviewed Alternative D before it was analyzed and released to the public to ensure that their request was accurately reflected. BNSF withdrew their proposal (Alternative D) after the DEIS comment period closed in January 2007 and indicated they would like to submit another proposal for consideration. A new proposal was not received.

GNP would permit a permanent program of explosive avalanche hazard reduction on park lands. Explosive delivery methods would include military artillery, blaster boxes, Avalhex type systems, helicopter delivery, Avalauncher, and handcharges. BNSF would limit explosive use to three events per year with NPS approval required if more than three events occur. Up to four asphalt pads for artillery placement and firing and up to 700 feet of access road would be constructed off the US Highway 2 ROW. Traffic would be delayed on US Highway 2 and along the railroad during the explosive use periods. BNSF would build extensions on Shed 7 (100 feet) and Shed 9 (150 feet). Shed 7 has the highest avalanche hazard and Shed 9 start zones are difficult to see or reach with military artillery.

BASIS FOR DECISION

Factors considered in the decision making process were the park's special status as an internationally recognized natural area, the unique wildlife and resources in the project area, and NPS values. Glacier National Park, together with Waterton Lakes National Park is the world's first international peace park, an international biosphere reserve and a world heritage site. The area of the park in which BNSF has requested to use explosives has federally listed threatened and endangered species present, is within the park's recommended wilderness, provides winter recreation for park visitors and is important winter range for ungulate species. The park lacks sufficient scientific baseline data to measure "impairment" resulting from the implementation of an explosive program for avalanche hazard reduction of this magnitude. However, the potential impacts of explosives on threatened and endangered species, wildlife, natural avalanche processes, recommended wilderness, and natural sound are unacceptable.

Based on the risk analysis conducted by BNSF, the construction of less than one mile of snowsheds offers the most effective avalanche protection for Amtrak passengers, BNSF employees, equipment, and freight while having the least impact on park resources based on the analysis in the railroad's own hazard assessment, Avalanche Risk Analysis in John Stevens Canyon, Essex, Montana (Hamre and Overcast 2004) and the Draft EIS. If the recommended snowsheds were built, the need for operational restrictions or delays along the railroad would be eliminated. Snowsheds would not have the uncertainty or consequence that is inherent with the use of explosives.

Resource considerations combined with the risk of major impacts on park resources and no commitment at this time from BNSF to construct snowsheds led the park to choose Alternative B as the selected action.

FINDINGS ON IMPAIRMENT, UNACCEPTABLE IMPACTS, AND APPROPRIATE USE OF PARK RESOURCES AND VALUES

Sections 1.5 and 8.12 of the NPS Management Policies (2006) underscore the fact that not all uses are allowable or appropriate in units of the National Park system. All of the action alternatives were screened to determine consistency with applicable laws, executive order, regulations, and policies; consistency with existing plans for public use and resource management; actual and potential effects to park resources; total costs to the Park Service; and whether the public interest would be served. The environmental analysis showed that impacts from Alternatives C and D would result in major adverse impacts on natural resources and result in unacceptable impacts. However, the park lacked sufficient data to determine impairment resulting from the use of explosives for avalanche control. The preferred alternative will not result in impairment or unacceptable impacts on park resources and values and will not violate the NPS Organic Act. This conclusion is based on the Superintendent's professional judgment, as guided and informed by the expertise and professional knowledge of NPS and FNF resource specialists, a comprehensive literature review and biological surveys.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferable alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by the Council on Environmental Quality (CEQ). The CEQ provides direction that "the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA § 101. Typically, this means the alternative that causes the least damage to the biological and physical environment. It also means the alternative that best protects, preserves and enhances historic, cultural and natural resources" (Forty Most Asked Questions Concerning Council of Environmental Quality's National Environmental Policy Act Regulations, 1981). As expressed in NEPA (§ 101) it is the continuing responsibility of the Federal Government to:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The Preferred Alternative is the environmentally preferred action as well as the selected action. It fulfills criteria 1, 2, 3, 5, and 6 during and after snowshed extension and construction. This alternative would achieve criteria 4 only if the integrity of historic snowsheds is maintained by BNSF with snowshed extensions.

The selected action fulfills the responsibilities of each generation as trustee of the environment for succeeding generations as snowsheds would last decades and would provide complete protection of trains from avalanche caused spills or derailments that could degrade the quality of the environment in the Bear Creek and Middle Fork of the Flathead River for years or decades. Restrictions and delays would not be necessary after snowshed construction is complete, ensuring protected and continuous interstate commerce and freight transfer through the area.

The selected action assures safe, healthful, productive, and esthetically and culturally pleasing surrounds. This is the safest alternative as it has been determined to reduce avalanche risk in the canyon more than all the other alternatives (Hamre and Overcast 2004). Snowsheds will protect the railroad tracks continuously in the canyon, providing a continuously safe environment for Amtrak passengers, BNSF employees, freight and trains traveling through the canyon. Human health and safety criteria would be met more efficiently if BNSF begins construction as soon as possible on those snowsheds that have the highest avalanche risk. Human health and safety criteria would improve as more sheds are constructed. The snowsheds would last for several decades- the historic snowsheds have lasted for a century. The reduction in the potential for a hazardous spill would protect

people downstream of the project area to Flathead Lake. The new snowsheds, weather stations, and avalanche detection devices will be visible features on the landscape. This new feature may not be esthetically pleasing to some people, while others may find the new railroad infrastructure both pleasing and culturally interesting.

The selected action attains the widest range of beneficial uses of the environment by limiting snowsheds to the railroad right-of-way. The surrounding park lands will be available for human winter recreation and wildlife use. The weather station and avalanche detection devices will not limit use of the park lands for visitors or wildlife. The weather station will provide weather data for GNP, FNF and MDT.

The selected action preserves the cultural heritage of snowsheds if BNSF constructs snowshed extensions that preserve the integrity of the historic sheds built in the early 1900s. The historic snowsheds will not be removed or changed, thus the historic structures would be preserved. Natural avalanche processes in the park will be allowed to continue unaffected by human actions. These natural processes will continue to support a diverse wildlife community in important wintering habitat. Recreational use of the area will not be limited by human activity. Recommended wilderness in GNP and designated wilderness in FNF will remain intact.

The selected action achieves a balance between population and resource use by providing the highest protection for park and forest resources while ultimately protecting Amtrak passengers, BNSF employees, and equipment. The selected action will strike a balance between growing interstate commerce and freight transport along the railroad and protection of resources. Snowshed construction along the railroad would limit avalanche hazard reduction activities to the railroad right-of-way and allow natural processes to continue unaffected by human activity. Snowshed construction will allow trains to travel through the canyon without delays or restrictions, ensuring efficient winter travel conditions for goods transport. This would allow high standards of living for people depending on reliable goods transport and for recreationists who want to use the canyon. Amtrak passengers and BNSF employees will benefit from snowshed safety and the ability to travel safely in the canyon under high avalanche hazard conditions. The probability of an avalanche caused spill or derailment will be greatly diminished allowing for a high standard of life for wildlife in the area.

The selected action will allow natural processes to continue ensuring the quality of renewable resources to be the highest possible. If snowsheds are constructed by BNSF, they would decrease delays and restrictions on the railroad and allow for the most efficient use of fuel and depletable resources along the transportation route. Snowsheds would cover the tracks in the avalanche hazard area decreasing the amount of fuel and equipment needed to clear the tracks of avalanche debris that has accumulated on the tracks. Fuel would be conserved after snowsheds are built, as trains would not idle while waiting to cross the canyon.

PUBLIC AND AGENCY INVOLVEMENT

Scoping

The public involvement process began with a scoping letter sent on May 17, 2005 to the GNP and FNF mailing list and with publication of a Notice of Intent (NOI) in the Federal Register on June 21, 2005 (Volume 70, #118). Public open houses were held May 25th in Essex, Montana and May 26th in Kalispell, Montana. Seven people attended the Essex meeting and four people attended the Kalispell meeting. GNP received 954 written comments during the scoping process in addition to the comments made at the public

meetings. Comment letters were received from the following groups and agencies: Swan View Coalition, Great Bear Foundation, US Environmental Protection Agency, the Blackfeet Tribe and the National Parks Conservation Association. Concerns voiced included winter wildlife habitat, threatened and endangered species, natural sound, recommended wilderness, explosive use, restricted recreational use, and public safety. The deadline for receipt of scoping comments was extended from July 1 to July 22, 2005 due to an unexpected delay in publishing the Federal Register notice. The FNF and MDT agreed to participate as cooperating agencies. The Blackfeet Tribe requested to be included in the consultation process.

Draft EIS

The *Avalanche Hazard Reduction by Burlington Northern Santa Fe Railway in Glacier National Park and Flathead National Forest, Montana Draft Environmental Impact Statement* was released October 23, 2006 for a 60-day public comment period. The NPS extended the comment period for an additional 30 days after receiving a request from BNSF for a 120 day extension. The public comment period ended January 29, 2007. Two public hearings were held December 5, 2006 at Kalispell, Montana and December 6, 2006 at West Glacier, Montana. Approximately 20 people attended the public meetings. The NPS received over 13,000 comment letters, including the hearing testimonies. Six form letters comprised about 11,000 comments. Over 2000 original letters were received. Letters received from 23 countries showed the broad global interest on this issue. The overwhelming majority of the comments was in support of the preferred alternative and specifically spoke to concerns of using explosives for avalanche hazard reduction in GNP and potential adverse impacts on park resources and values.

BNSF sent a letter during the comment period withdrawing their proposal described as Alternative D and asked that the EIS process cease. However, the NPS believed this issue would recur and that the park needed to complete the EIS in order to provide guidance in the event of future explosive use requests.

Final EIS

A draft of the abbreviated Final EIS was prepared in 2007 and sent to the cooperating agencies for their review. After permission to print was received, a courtesy copy was sent to BNSF just prior to printing. In June, 2007, BNSF sent a 63-page comment letter to the park. The BNSF letter stated that GNP should prepare a supplemental EIS with detailed analysis on the scientific data that BNSF felt was lacking in the EIS.

GNP maintains that there is no additional data on explosive avalanche hazard control programs that would change the professional analysis of the specialists who prepared the EIS. There was no new information in the BNSF comment letter to add to the Final EIS. Most of the BNSF comments in the letter had been raised in previous comment letters by the railroad. Responses to the BNSF comments are in the Final EIS and in the administrative record. On March 14, 2008 a meeting was held with BNSF to discuss their concerns with the Final EIS. Minor changes and updates were made to the abbreviated Final EIS and it was reprinted.

The abbreviated Final EIS was released to the public July 16, 2008. Three comment letters were received; one from the US Environmental Protection Agency, one from American Wildlands and one from a member of the public. All three letters support the park's preferred alternative.

Consultation

Agency consultation was accomplished through correspondence, telephone

communication, and review of project-related materials. Letters were sent to the US Fish and Wildlife Service, US Environmental Protection Agency, US Army Corps of Engineers, US Geological Survey, Flathead National Forest, Lewis and Clark National Forest, Montana State Historic Preservation Office, Montana Department of Environmental Quality, Montana Department of Natural Resources, Montana Department of Fish and Wildlife, the Confederated Salish Kootenai Tribe, the Blackfoot Tribe, and Waterton Lakes National Park in Canada.

The Blackfeet and the Confederated Salish and Kootenai Tribes of Montana were identified as tribal groups concerned with the management of heritage resources in GNP and on the FNF. The tribes were contacted in the initial planning stages of the EIS in order to establish lines of communication between the parties, to advise them on the scope of the undertaking including potential effects, and to make their resource concerns an official part of the EIS file. A letter from the Blackfeet Tribal Historic Preservation Officer (June 1, 2005) requested participation in the consultation process for the EIS. The Confederated Salish and Kootenai Tribe did not send correspondence. A letter from the Blackfeet Tribal Historic Preservation Officer (May 26, 2006) stated that the Blackfeet Tribe is opposed to explosive use in the park and would like to see BNSF build snowsheds instead of using explosives. This letter also stated that the tribe was concerned that explosive use would be "disruptive and detrimental to the cultural and natural environment."

GNP has determined that the preferred alternative does not constitute a federal action for the purposes of consultation under Section 7 of the Endangered Species Act (ESA) and Section 106 of the National Historic Preservation Act (NHPA). The snowsheds would not be built with federal funds. GNP would not issue a special use permit for the construction of snowsheds since the sheds would be constructed by BNSF on their ROW across US Forest Service land. According to the FNF, the ROW agreement with BNSF does not require that the National Forest Service issue any permits for operation or maintenance activities taking place within the railroad ROW. The US Fish and Wildlife Service and the State Historic Preservation Office have concurred with the NPS that the preferred alternative does not require further consultation under the ESA or NHPA and that consultation under these laws has been completed.

CONCLUSION

All practical means to avoid or minimize environmental harm from the selected alternative have been adopted. Because there will be no major adverse impacts to resources whose conservation is (1) necessary to fulfill specific purposes in the establishing legislation for GNP; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in relevant NPS planning documents, there will be no impairment of the park's resources or values. After a review of these effects, the actions selected for implementation will not impair park resources or values and will not violate the NPS Organic Act. Both Section 7 of the ESA and Section 106 of the NHPA have been completed.