

Winter Use Plans Final Environmental Impact Statement

Yellowstone and Grand Teton National Parks
John D. Rockefeller, Jr. Memorial Parkway



National Park Service

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Winter Use Plans Final Environmental Impact Statement

Yellowstone and Grand Teton National Parks John D. Rockefeller, Jr. Memorial Parkway

Abstract

The purpose of this project or planning effort is to ensure park visitors have a range of winter recreation opportunities that are appropriate to the national park setting, and that these activities do not impair or irreparably harm park resources or values. The need for the project stems from issues surrounding the type, amount, and character of historical winter access and recreation, and their impact on park resources, values and/or other visitors. The fundamental guiding principles for resolving the purpose and need issues and deciding on a winter use plan stem from the National Park Service Organic Act and other laws and mandates. This EIS, and a new plan, are designed to address inadequacies of previous planning efforts for the same purpose, in accordance with recent court decisions.

Seven alternative winter use management plans are evaluated in this EIS; alternative 7 is the NPS preferred alternative. Alternative 1 would put into place the provisions of the temporary winter use plan of August 2004, with some modifications. Alternative 2 would prohibit recreational snowmobiling in the parks in favor of snowcoach access. Alternative 3A would close much of Yellowstone to oversnow travel, leaving the South Entrance to Old Faithful route open. A variation of alternative 3 (3B) is the no action alternative, which closes all routes to motorized oversnow recreation. This would be the outcome of the temporary plan, should no new decision be made. Four other alternatives (4, 5, 6, and 7) would allow varying levels of snowmobile and snowcoach access to continue in the parks. Alternative 6 calls for plowing some roads in Yellowstone to allow wheeled-vehicle access from West Yellowstone and Mammoth to Old Faithful. Alternative 7 is the preferred alternative; it reduces the daily number of snowmobiles (from the number called for in the Draft EIS preferred alternative, 720) to better protect park soundscapes and other resources to 540 snowmobiles per day in Yellowstone and 65 snowmobiles in Grand Teton and the Parkway. In Yellowstone, all snowmobilers would be required to travel with a commercial guide and in both parks, most snowmobiles would be required to use Best Available Technology. Eighty-three snowcoaches would be allowed into Yellowstone daily. All seven alternatives meet the purpose and need for this EIS. However, alternatives 2 and 3 would offer a more limited range of visitor experiences in the winter as compared to the other alternatives. Alternatives 1, 4, 5, and 7 offer a greater range of opportunities for visitors while alternative 6 offers the most varied ways to access the interior of Yellowstone National Park. Use levels and means of access in some alternatives may discourage some winter visitors. The environmentally preferred alternative is alternative 3B.

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Summary of the FEIS

1.0 Introduction

This final Environmental Impact Statement (FEIS) is prepared in accordance with Council of Environmental Quality (CEQ) Regulations at 40 CFR Part 1500 and National Park Service (NPS) policy for implementing the National Environmental Policy Act (NEPA), set out in Directors Order 12 Handbook (DO 12). The necessity for this FEIS derives from the desire to provide visitors with an appropriate range of winter opportunities. This document is also intended to address previous deficiencies identified by court decisions.

Chapter I of the FEIS expresses the purpose and need for action, and provides a brief history and context for the document. Chapter II presents the alternatives whose impacts are considered in this FEIS. The environment that is potentially affected by the alternatives is described in Chapter III of the document; the affected environment provides a context for analysis of alternative impacts as presented in Chapter IV.

2.0 The Purpose of this EIS and Plan

The fundamental purpose for publishing an EIS is to disclose to the public, and for the decision maker, various alternatives for meeting articulated agency goals and the environmental consequences that may be involved with each. The purpose of this winter use plan is to provide a framework for managing winter use activities in the parks. In doing this, the plan is to provide park visitors with a range of appropriate winter recreational opportunities, while ensuring that these activities do not lead to unacceptable impacts or the impairment of park resources and values. This purpose is underpinned by laws, regulations and policies that direct national park management.

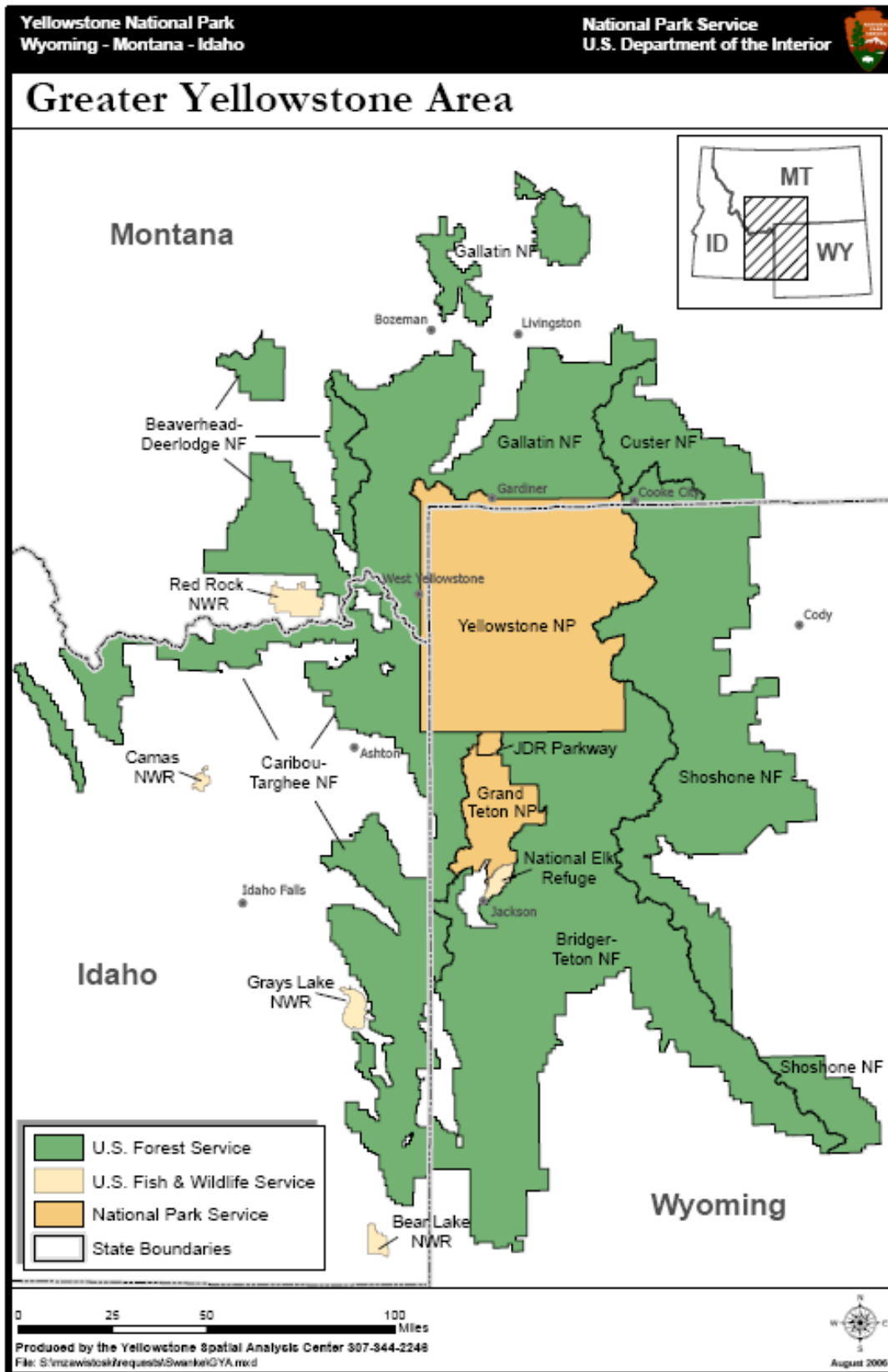
By virtue of court action vacating earlier environmental documents, this FEIS must address the historic conditions that heightened the need to develop and implement a winter use plan. The historic conditions, compared to the desired conditions, illustrate the need for action, or the need for a winter use plan. It is important to note that winter visitation levels and modes of access to Yellowstone and Grand Teton national parks and the John D. Rockefeller, Jr. Memorial Parkway (the parks) have changed since the implementation of managed winter use in 2003. Part of the function of this FEIS is to determine, as well as possible, whether recent conditions (for the winters of 2003–2007) have improved or not, relative to the historic condition.

In response to the D.C. District Court, the FEIS addresses a number of concerns regarding the winter use 2003 Supplemental EIS (SEIS). These include road grooming and bison movement, compliance with NPS mandates, and the effectiveness of mitigation measures. In response to the Wyoming District Court, the FEIS addresses concerns about the 2000 EIS, including snowcoach use, guiding requirements, and public and cooperating agency involvement.

This EIS evaluates a full range of alternatives for managing winter use in Yellowstone and Grand Teton national parks and the John D. Rockefeller, Jr. Memorial Parkway.

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Figure S-1: Area Map



3.0 National Park Service Mandates

Management of the National Park Service (NPS) is guided by the U.S. Constitution, public laws, treaties, proclamations, Executive Orders, regulations, and directives of the Secretary of the Interior and the Assistant Secretary for Fish and Wildlife and Parks. NPS policies and actions must be consistent with these higher authorities. The most pertinent laws, regulations and policies relating to winter use are presented in Appendix A of the FEIS. In FEIS Chapter III, for each impact topic, there is a section providing a regulatory and policy overview.

4.0 Purpose and Need for Action

The intent of a plan is to achieve, as well as practicable, a set of desired conditions or goals. The desired conditions and goals in this case are derived from NPS mandates and reflected in management policies. The “existing conditions,” for purposes of this planning effort, are the historic conditions that existed prior to the last four winters of managed use. Thus the term “historic conditions” is used to describe the conditions that existed during the nearly 20 years of unmanaged snowmobile use in the parks prior to 2003. Historic, unregulated conditions clearly indicated a need for change. These historic conditions represent the existing condition prior to implementation of the temporary plan.

Desired and historic conditions are compared in the following table. Desired conditions reflect the 2006 Management Policies.

Table S-1: Desired Versus Historic Conditions for Winter Use Planning

Desired Conditions	Historic Conditions
<i>Visitor Access</i>	
Visitors have access to a range of appropriate activities for enjoyment of the park resources and values during the winter. Appropriate winter recreation is that which does not cause unacceptable impacts on unique characteristics of winter settings within the parks, while permitting their enjoyment and protection. Appropriate activities are those which promote understanding of the purposes for which the parks’ resources are being preserved, and those which promote the health and personal fitness of the general public.	Access for personal motorized use via snowmobile increased greatly since the beginnings of the winter program, while access for “quiet” winter use decreased in relation to it. Snowmobile use, in historic numbers, is inconsistent with winter park landscapes that uniquely embody solitude, quiet, undisturbed wildlife, clean air vistas and the enjoyment of these resources by those engaged in non-motorized activities.
<i>Visitor Experience</i>	
Visitors experience high quality winter activities with a sense of appreciation and enjoyment that is consistent with the condition for visitor access. Recreation experiences enhance the enjoyment of park resources and values, while protecting the experiences of other park visitors. Conflicts among user groups are minimal. Reduced oversnow vehicle sound and emission levels enhance the visitor experience. Visitors participate in winter use activities without damaging resources.	A variety of winter use conflicts have been identified involving the relationship between users and among different user groups. Each of these conflicts affects how people experience the parks. At destination facilities and trails open to both motorized and nonmotorized users, the latter express dissatisfaction with the sound, odor, and number of snowmobiles as affecting the solitude, quiet, and clean air that people expect to enjoy in the parks.

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Desired Conditions	Historic Conditions
<i>Health and Safety</i>	
High quality facilities, programs and operations provide a safe and healthful environment for visitors and employees. The safety and health of persons will be ensured by identifying and preventing potential injuries from recognizable threats. Known hazards are reduced or eliminated. Visitors know how to participate safely in winter use activities, and they equip themselves for doing so. Reduced oversnow vehicle sound and emission levels protect the health and welfare of employees and visitors.	The level of snowmobile accidents, unsafe users, inherent winter risks, and conflicts between users is a public safety concern. The parks have documented health hazards from oversnow vehicle emissions and noise for both employees and visitors.
<i>Park Resources and Values</i>	
Park resources and values are protected from impairment by preventing unacceptable impacts. Reduced oversnow vehicle sound and emission levels protect air quality, natural soundscapes, and other resources that are dependent on those qualities. Impacts to wildlife are mitigated, and effective wildlife habitat is protected.	Sound and exhaust emissions from oversnow vehicles affect air quality, visibility, and natural soundscapes. Oversnow vehicle travel causes harassment and other unintended impacts on wildlife, especially at times when wildlife species are highly vulnerable to natural stressors.

5.0 Scope of Analysis – Range of Alternatives

The scope of analysis determines the range of alternatives to be considered. The 2000 EIS evaluated seven alternatives for managing winter use. As required by the June 29, 2001, settlement agreement with the International Snowmobile Manufacturing Association and the State of Wyoming, the 2003 SEIS focused on new information and additional public comment. Three additional alternatives allowing continued snowmobile use were considered, as well as an alternative allowing only snowcoaches (the “no action” alternative). The 2004 temporary Environmental Assessment (EA)/ Finding of No Significant Impact (FONSI) focused on analyzing the environmental impacts of six winter use alternatives. This FEIS evaluates a full range of seven alternatives for managing winter use. The scope of analysis is reflected in the decision to be made, the impact topics covered, and the major issues addressed.

5.1 Decision to be Made

The decision to be made is in regard to the type and extent of public recreational access appropriate to the parks during the winter. It will be judged upon the alternative and the associated impacts which best meet all the desired conditions defined in the purpose and need for action (Table S-1). Some desired conditions are not entirely consistent with others; for example motorized recreation runs somewhat counter to an emphasis on natural soundscape preservation. This means that the decision requires optimizing between recreation activities and protection of resources and values, in accordance with NPS policies. The reader may take special note of two NPS policies: avoiding impairment and visitor use (FEIS Appendix A).

Part of the decision to be made includes the type and extent of restrictions on public recreational snowmobile and snowcoach use, if they are allowed. The record of decision based on the FEIS will constitute a plan that provides long-term guidance for winter use management in the parks. The decision to be made from this EIS will consider the conclusions in the 2000 EIS, the 2003 Supplemental EIS and the 2004 EA regarding adverse impacts, and the finding in the November

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2000 ROD and affirmed in the March 2003 ROD and the 2004 FONSI that historically unlimited and unregulated snowmobile use constitutes an impairment of park resources and values.

5.2 Major Issues

The purpose of developing alternatives is to compare different ways of resolving issues and their environmental consequences. Based on need and public comment, the major issues to be addressed in this FEIS are summarized in the following table. Many of these same issues were critical for evaluating and disclosing impacts in the earlier EIS, the Supplemental EIS, and the Temporary EA. Resources and values associated with major issues are addressed as impact topics in Chapter IV of this FEIS.

Table S-2: Major Issues

Issue	Issue Description
Social and Economic Concerns	The potential economic impacts of various winter use elements on local businesses and economies are at issue. Comments range from statements that protection of park resources is paramount, to the social and economic benefits of various access options. Affordable access, diversification of gateway community economies, protection of local business opportunities, and a need for additional socioeconomic surveys were all raised as issues during scoping, as was the potential closure or allocation changes at some entrances. These issues are addressed in this EIS.
Human Health and Safety	Three primary health and safety issues regarding winter visitor use were identified that affect different areas of the three NPS units to a varying extent: the effect of motorized vehicular emissions and noise on employees and visitors; avalanche hazards; and safety problems where different modes of winter transport are used in close proximity. These issues are addressed in this EIS.
Wildlife	The impact of snowmobiles, snowcoaches, and snow road grooming on wildlife is addressed, including the topic of ungulate use of groomed roads. The issue of whether or not groomed roadways affect bison movements, habitats, and population distribution has played a crucial role in the history of winter use planning and associated litigation.
Air Quality	The impact of recreational snowmobile and snowcoach travel on air quality, including emissions, visibility, and air quality-related values, is addressed. The issue is a question of how much pollution emitted by oversnow vehicles is acceptable relative to laws and policies governing national park units. Air quality is a key resource in itself as well as a highly prized (and expected) element of the park visitor experience.
Natural Soundscapes	The impact of noise from recreational snowmobile and snowcoach travel on the natural soundscape is addressed. The issue is a question of whether the character and amount of sound emitted by oversnow vehicles is acceptable relative to laws and policies governing national park units. Soundscapes are a key resource, as well as a highly prized (and expected) element of the park visitor experience.
Visitor Access and Circulation	Various user groups contend that the parks offer either too much or not enough of various types of use. Those who advocate for snowmobile use indicate that there is a right to personal (individual) access to the parks for this use. Those who advocate for snowcoach-only access indicate that snowmobile technology does not adequately protect park resources. Others advocate that any motorized use is inappropriate during the winter season.
Visitor Experience	Expectations for quality winter recreation experiences vary among user groups. This creates conflict between those for whom the expectation of quiet, solitude, and clean air contrasts with the impacts of oversnow vehicles, especially when facilities for these different groups are in close proximity. At issue is the nature of visitor enjoyment and its relationship to the management and conservation of park resources and values.

6.0 Public Comments

The public scoping period for this EIS was June 24 – September 1, 2005. The NPS received 33,365 documents commenting on the scope of the EIS. Of these, about 90% were form letters of various kinds, and about 1% contained unique or substantive comments rather than, or in addition to, opinion statements. Comments were received from persons in all U.S. states and territories, and from other countries.

A detailed report of the public scoping comments is available on the NPS website: <http://www.nps.gov/yell/parkmgmt/winterusetechnicaldocuments.htm>. Chapter V of the FEIS contains a summary of public involvement during this process.

Nearly 60 meetings were held with cooperating agencies and interest groups during all phases of the EIS preparation, including scoping and alternative development. Draft monitoring and modeling reports were made available for review and posted on the winter planning website.

The Draft EIS was on public review from March 27 – June 5, 2007. The NPS received approximately 120,000 documents commenting on the DEIS. Four public meetings were held during the EIS comment period: Cody, Wyoming; West Yellowstone, Montana; St. Paul, Minnesota; and Lakewood, Colorado. A summary of comments and responses is found in Appendix I of the FEIS. A detailed comment analysis report is available at the above web site.

7.0 Alternatives Considered

Chapter II in the FEIS explains each alternative in detail, including actions and assumptions common to all, important definitions, mitigation, monitoring, and actions that are specific to the different park units. This summary refers the reader to those sections; the alternatives are listed below, and the following table describes the salient features of each.

- Alternative 1: Continued Temporary Plan
- Alternative 2: Snowcoaches Only
- Alternative 3: Most Road Grooming Eliminated and No Action
- Alternative 4: Expanded Recreational Use
- Alternative 5: New Management Tools and Improved BAT
- Alternative 6: Mixed Use
- Alternative 7: Revised Preferred Alternative

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Table S-3: Summary and Comparison of Alternatives

	Alternative 1: Continued Temporary Plan	Alternative 2: Snowcoaches Only	Alternative 3: 3A: Most Road Grooming Eliminated 3B: Oversnow Roads Closed (No Action)	Alternative 4: Expanded Recreational Use	Alternative 5: New Management Tools and Improved BAT	Alternative 6: Mixed Use	Alternative 7: Revised Preferred Alternative
General Description	Allows for nearly historic levels of snowmobile use but requires commercial guides. This alternative mimics the temporary winter use plan with three primary changes: 1) snowcoaches must meet Best Available Technology (BAT) standards; 2) daily limit on snowcoaches; and 3) Sylvan Pass would be closed to through travel.	Emphasizes snowcoach access; prohibits recreational snowmobiling. Road grooming would continue. Sylvan Pass would be closed to through travel.	3A: Prohibits road grooming or packing on most road segments in Yellowstone National Park. The road from the South Entrance to Old Faithful would be the only oversnow motorized access route in Yellowstone. 3B: Recreational oversnow vehicle access would cease in all three parks.	Allows for increased snowmobile use, relative to historic numbers. Commercial guides would be required for most snowmobilers; some could also visit the park after completing a non-commercial or unguided guide training course. Sylvan Pass would be open to through travel.	Balances snowmobile and snowcoach access and accommodates some visitors who wish to have an unguided snowmobile experience. Features a seasonal limit as well as a flexible daily limit. Sylvan Pass would be open to through travel.	Emphasizes plowing Yellowstone's mid-elevation, west-side roads to allow wheeled commercial vehicle access. Continues to allow oversnow vehicle access through the South Entrance and on the east side of the park. Sylvan Pass would be closed to through travel.	Combines elements of Alternatives 1, 5, and others to balance snowmobile and snowcoach access. Protects park soundscapes better by reducing snowmobile numbers; protects wildlife better and enhances visitor experience by retaining 100% commercial guiding; and improves employee and visitor health and safety by closing Sylvan Pass to motorized travel.
Daily Snowmobile Limits in Yellowstone National Park (YNP)	720 snowmobiles per day West - 424 South - 256 North - 20 East - 0 Old Faithful - 20 Cave Falls Road - 50 (no BAT or guiding)	Snowmobiles prohibited Cave Falls Road closed to snowmobiles	3A: South - 250 snowmobiles per day Cave Falls Road closed to snowmobiles 3B: No recreational motorized oversnow access	1,025 snowmobiles per day West - 600 South - 250 North - 25 East - 100 Old Faithful - 50 Cave Falls Road - 75 (no BAT or guiding)	540 snowmobiles per day West - 290 South - 145 East - 40 North - 40 Old Faithful - 25 Cave Falls Road - 50 (no BAT or guiding) Seasonal entry limit implemented.	350 snowmobiles per day South - 250 Old Faithful/Norris - 100 100 commercial wheeled vehicles Cave Falls Road - 50 (no BAT or guiding)	540 snowmobiles per day West - 300 South - 185 North - 35 East - 0 Old Faithful - 20 Cave Falls Road - 50 (no BAT or guiding)

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	Alternative 1: Continued Temporary Plan	Alternative 2: Snowcoaches Only	Alternative 3: 3A: Most Road Grooming Eliminated 3B: Oversnow Roads Closed (No Action)	Alternative 4: Expanded Recreational Use	Alternative 5: New Management Tools and Improved BAT	Alternative 6: Mixed Use	Alternative 7: Revised Preferred Alternative
Daily Snowmobile Limits in Grand Teton National Park (GTNP) and the John D. Rockefeller, Jr., Parkway (the Parkway)	140 snowmobiles per day Grassy Lake Road: -50 Continental Divide Snowmobile Trail (CDST) - 50 Jackson Lake - 40	Snowmobiles prohibited	3A: Grassy Lake Road - 50 CDST - Closed Jackson Lake -Closed 3B: No recreational oversnow vehicle access	250 snowmobiles per day Grassy Lake Road - 75 CDST - 75 Jackson Lake - 100	140 snowmobiles per day Grassy Lake Road - 50 CDST - 50 Jackson Lake - 40	90 snowmobiles per day Grassy Lake Road - 50 CDST - Closed Jackson Lake - 40	65 snowmobiles per day Grassy Lake Road – 25, BAT not required CDST – Converted to trailed route Jackson Lake - 40
Snowmobile Guide Requirements	YNP: 100% commercially guided GTNP and Parkway: Guides allowed, but not required	N/A	3A: YNP: 100% commercially guided GTNP and Parkway: Guides allowed, but not required 3B: No recreational oversnow vehicle access.	YNP: 75% commercially guided; 25% either unguided or non-commercially guided GTNP and Parkway: CDST - 50 commercially guided; 25 unguided Jackson Lake and Grassy Lake Road - unguided	YNP: 80% commercially guided 20% unguided, with brief training Unguided snowmobiles would be required to enter YNP prior to 10:30 a.m. GTNP and Parkway: Guides allowed, but not required	100% commercially guided for both oversnow and wheeled vehicles GTNP and Parkway: Guides allowed, but not required	YNP: 100% commercially guided GTNP and Parkway: Guides allowed, but not required
Best Available Technology (BAT) Requirements for Snowmobiles	YNP: All BAT GTNP and Parkway: All BAT, except snowmobiles originating on Targhee National Forest (NF) using Grassy Lake Road	N/A	3A: YNP: All BAT GTNP/Parkway: All BAT, except snowmobiles originating on Targhee NF using Grassy Lake Road 3B: No recreational oversnow vehicle access	YNP: all BAT GTNP/Parkway: Jackson Lake: All BAT Grassy Lake Road: BAT not required CDST - 50 commercially guided BAT; 25 unguided 2006 models or newer	Improved BAT for snowmobiles (95% reduction in HC and 75% reduction in CO; not to exceed 72 dBA), except snowmobiles originating on Targhee NF using Grassy Lake Road	YNP: All BAT GTNP and Parkway: All BAT, except snowmobiles originating on Targhee NF using Grassy Lake Road	YNP: all BAT GTNP and Parkway: Jackson Lake: All BAT Grassy Lake Road: BAT not required

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	Alternative 1: Continued Temporary Plan	Alternative 2: Snowcoaches Only	Alternative 3: 3A: Most Road Grooming Eliminated 3B: Oversnow Roads Closed (No Action)	Alternative 4: Expanded Recreational Use	Alternative 5: New Management Tools and Improved BAT	Alternative 6: Mixed Use	Alternative 7: Revised Preferred Alternative
Maximum Group Size	8 with one guide; 17 with 2 guides	N/A	3A: 11 with one guide 3B: 0	11 with one guide	11 with one guide	8 with one guide; 17 with 2 guides	11 with one guide
Use of YNP Side Roads by Snowmobiles	Washburn Overlook and Freight Road: snowcoach only. Firehole Canyon Drive, Canyon North Rim Drive and Riverside Drive: open in <u>afternoon</u> to snowmobiles. Lake Butte and Canyon South Rim: open to snowmobiles. Virginia Cascades: non-motorized only.	Virginia Cascades: non- motorized only All other side roads: snowcoach only	3A and 3B: All closed (there are none on the road from South Entrance to Old Faithful under 3A)	All side roads open to snowmobiles Virginia Cascades: non-motorized only	Same as Alternative 1	Canyon North and South Rim Drives, Lake Butte: open to snowmobiles Firehole Canyon, Riverside Drive, Fountain Freight Road, Washburn Hot Springs: Snowcoach only Virginia Cascades: non-motorized only	Same as Alternative 1
Daily Snowcoach Limits in YNP and Snowcoach BAT	78 snowcoaches per day West - 34 South - 13 North - 13 East - 0 Old Faithful/ Parkwide - 18 All must meet snowcoach BAT	120 snowcoaches per day West - 55 South - 25 North - 17 East - 0 Old Faithful/ Parkwide - 23 All must meet snowcoach BAT	3A: South - 20 All meet snowcoach BAT 3B: 0	115 snowcoaches per day West - 46 South - 15 North - 5 East - 4 Old Faithful/ Parkwide - 35 Private - 10 All must meet snowcoach BAT	83 snowcoaches per day West - 34 South - 10 North - 3 East - 2 Old Faithful/ Parkwide - 34 All must meet snowcoach BAT Seasonal entry limit	40 snowcoaches per day South - 10 Old Faithful/Norris - 30 All must meet snowcoach BAT 100 wheeled commercial vehicles on west side	83 snowcoaches per day West - 37 South - 12 North - 15 East - 0 Old Faithful/ Parkwide - 19 All must meet snowcoach BAT

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	Alternative 1: Continued Temporary Plan	Alternative 2: Snowcoaches Only	Alternative 3: 3A: Most Road Grooming Eliminated 3B: Oversnow Roads Closed (No Action)	Alternative 4: Expanded Recreational Use	Alternative 5: New Management Tools and Improved BAT	Alternative 6: Mixed Use	Alternative 7: Revised Preferred Alternative
Road Grooming	Continue road grooming, except Sylvan Pass would be closed.	Continue road grooming, except Sylvan Pass would be closed.	3A: Only groom South to Old Faithful. All other segments ungroomed and closed to all travel. 3B: No roads groomed for recreational access	Continue road grooming	Continue road grooming	Plow Mammoth to West Yellowstone to Old Faithful. Groom Old Faithful to South to Lake to Canyon to Norris. Sylvan Pass would be closed.	Continue road grooming, except Sylvan Pass would be closed beginning in 2008. The Madison to Norris road may be closed, depending on the bison-road experiment.
Non- motorized Use in YNP (no changes planned for GTNP)	Allowed subject to Winter Severity Index; increased use on South and East Entrance roads during the spring opening shoulder season.	Same as for alternative 1	3A: Limited to groomed ski routes and boardwalks. Majority of park closed to non- motorized travel. 3B: Allowed subject to Winter Severity Index	Same as for alternative 1	Same as for alternative 1	Same as for alternative 1	Same as for alternative 1
Estimated maximum number of daily vehicle passengers in YNP	Snowmobile passengers - 936 Snowcoach passengers - 624 Total - 1560	Snowmobile passengers - 0 Snowcoach passengers - 960 Total - 960	Snowmobile passengers - 325 Snowcoach passengers - 160 Total - 485	Snowmobile passengers - 1333 Snowcoach passengers - 920 Total - 2253	Snowmobile passengers - 702 Snowcoach passengers - 664 Total - 1366	Snowmobile passengers - 455 Snowcoach passengers - 320 Wheeled vehicle passengers - 2000 Total - 2775	Snowmobile passengers - 702 Snowcoach passengers - 664 Total - 1366

Note that historically, a peak of 2,140 visitors toured Yellowstone daily, and that currently, an average of 570 tour it daily.

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Table S-4: Summary and Comparison of Impacts by Resource¹

Alternative 1	Alternative 2	Alternative 3A/B	Alternative 4	Alternative 5	Alternative 6	Alternative 7
Air Quality and Air Quality Related Values						
Emissions: moderate, long-term and adverse impacts due to CO emissions (6% of historic CO emissions). Visibility: negligible impact	Emissions: negligible, long-term and adverse impacts due to CO emissions (1.2% of historic CO emissions). Visibility: negligible impact	Emissions for 3A: minor, long-term and adverse impacts due to CO emissions (1.9% of historic CO emissions). Visibility for 3A: negligible impact 3B: No emissions or visibility impacts	Emissions: major, long-term and adverse, impacts due to CO emissions (8.9% of historic CO emissions). Visibility: negligible impact	Emissions: negligible to minor, long-term, and adverse impacts due to CO emissions (1.6% of historic CO emissions). Visibility: negligible impact	Emissions: moderate, long-term, and adverse impacts due to CO emissions (3.4% of historic CO emissions). Visibility: moderate, short-term, localize, and adverse impacts due to road sanding operations.	Emissions: moderate, long-term, and adverse impacts due to CO emissions (4.4% of historic CO emissions). Visibility: negligible impact
Health and Safety						
Minor to moderate, short-term, and adverse impacts due to 1) closure of Sylvan Pass; 2) continued use of BAT and guiding requirements; and 3) snowcoach BAT requirements	Minor to moderate, short-term, and adverse impacts due to 1) closure of Sylvan Pass; 2) elimination of snowmobile use; and 3) snowcoach BAT requirements	3A: Minor, adverse and short-term impacts due to 1) closure of Sylvan Pass; 2) continued use of BAT and guiding requirements; 3) snowcoach BAT requirements; and 4) closure of most park roads to OSVs. 3B: minor to moderate, adverse, and short to long-term due to travel on infrequently groomed roads.	Major, long-term and adverse impacts due to 1) continued avalanche control on Sylvan Pass; 2) increase in snowmobile numbers; 3) provision for possible unguided snowmobile use; 4) use of some two-stroke machines in GTNP; and 5) use of BAT snowmobiles and snowcoaches.	Major, long-term and adverse impacts due to 1) continued avalanche control on Sylvan Pass; 2) provision for unguided snowmobile use; and 3) use of BAT snowmobiles and snowcoaches.	Minor to moderate, short-term and adverse impacts due to 1) closure of Sylvan Pass; 2) continued use of BAT and guiding requirements; 3) snowcoach BAT requirements; and 4) plowing of some roads and concomitant reductions in exposure to air toxics, noise, and unsafe touring behavior.	Minor to moderate, short-term, and adverse impacts due to 1) closure of Sylvan Pass; 2) continued use of BAT and guiding requirements; and 3) snowcoach BAT requirements
Wildlife						
Bison and Elk: negligible to moderate, adverse and short-term impacts due to displacement and behavioral/physiological effects. Wolves: negligible to	Bison and Elk: negligible to moderate, adverse and short-term impacts due to displacement and behavioral/physiological effects. Wolves: negligible to	Bison and Elk: negligible to minor, adverse and short-term impacts due to behavioral/physiological effects. Wolves: effects would be negligible, adverse and short-	Bison and Elk: minor to moderate, adverse and short-term impacts due to vehicle-caused mortality, displacement, behavioral/physiological and	Bison and Elk: negligible to moderate, adverse and short-term impacts due to displacement and behavioral/physiological effects. Wolves: negligible to	Bison and Elk: negligible to moderate, adverse and short-term impacts due to vehicle-caused mortality, displacement, and behavioral/	Bison and Elk: negligible to moderate, adverse and short-term impacts due to displacement and behavioral/physiological effects. Wolves: negligible to

¹ Impacts displayed in Table 2-13 are summarized here from the impact topic definitions and analyses in Chapter IV.

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Alternative 1	Alternative 2	Alternative 3A/B	Alternative 4	Alternative 5	Alternative 6	Alternative 7
<p>moderate, adverse and short-term impacts due to displacement, behavioral, and physiological effects. Lynx and Wolverines: negligible, adverse and short-term impacts due to closure of Sylvan Pass. Coyotes and Ravens: negligible, short-term and adverse effects due to provisions for 100% guiding. Bald Eagles and Swans: negligible to moderate, adverse and short-term impacts due to displacement, behavioral, physiological, and demographic effects.</p>	<p>moderate, adverse and short-term impacts due to displacement, behavioral, and physiological effects. Lynx and Wolverines: negligible, adverse and short-term impacts due to closure of Sylvan Pass. Coyotes and Ravens: negligible, short-term adverse effects due to provisions for 100% guiding. Bald Eagles and Swans: negligible to moderate, adverse and short-term impacts due to displacement, behavioral, and physiological effects.</p>	<p>term for either alternative 3A or 3B. Lynx and Wolverines: negligible, adverse and short-term impacts due to closure of Sylvan Pass. Coyotes and Ravens: negligible, short-term adverse effects due to provisions for 100% guiding. Bald Eagles and Swans: negligible to minor, adverse, short-term impacts under 3A due to displacement, behavioral, and physiological effects; impacts from 3B would be negligible.</p>	<p>demographic effects. Wolves: minor to moderate, adverse, and short-term impacts due to vehicle-caused mortality, displacement, behavioral, and physiological effects. Lynx and Wolverines: negligible to minor, adverse and short-term impacts due to vehicle-caused mortality, displacement, behavioral, and physiological effects. Coyotes and Ravens: minor, adverse and short-term impacts due to provisions for some unguided access. Bald Eagles and Swans: negligible to moderate, adverse, short-term impacts due to vehicle-caused mortality, displacement, behavioral, physiological and demographic effects.</p>	<p>moderate, adverse, short-term impacts due to displacement, behavioral, and physiological effects. Lynx and Wolverines: negligible to minor, adverse, short-term impacts due to displacement, behavioral, and physiological effects. Coyotes and Ravens: adverse, minor, and short-term impacts due to provisions for some unguided access. Bald Eagles and Swans: negligible to moderate, adverse, short-term impacts due to displacement, behavioral, and physiological effects.</p>	<p>physiological effects. Wolves: negligible to moderate, adverse, and short-term impacts due to vehicle-caused mortality, displacement, behavioral, and physiological effects. Lynx and Wolverines: negligible to minor, adverse, short-term impacts due to closure of Sylvan Pass but possible vehicle-caused mortality. Coyotes and Ravens: negligible, short-term, and adverse impacts due to provisions for 100% guiding. Bald Eagles and Swans: negligible to moderate, adverse, and short-term impacts due to vehicle-caused mortality, displacement, behavioral, and physiological effects.</p>	<p>moderate, adverse, short-term impacts due to displacement, behavioral, and physiological effects. Lynx and Wolverines: negligible, adverse, short-term impacts due to displacement, behavioral, and physiological effects. Coyotes and Ravens: negligible, short-term and adverse effects due to provisions for 100% guiding. Bald Eagles and Swans: negligible to moderate, adverse, short-term impacts due to displacement, behavioral, and physiological effects.</p>

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Alternative 1	Alternative 2	Alternative 3A/B	Alternative 4	Alternative 5	Alternative 6	Alternative 7
Natural Soundscapes						
Percent of park area in which non-natural sounds would be audible: moderate, adverse, and short-term impacts (YNP and GTNP). Percent time audible: major (YNP) to minor (GTNP), adverse, and short-term impacts. Maximum sound levels: minor, adverse, short-term (YNP and GTNP).	Percent of park area in which non-natural sounds would be audible: moderate, adverse, and short-term impacts (YNP). Percent time audible: major, adverse, and short-term impacts (YNP). Maximum sound levels: minor, adverse, short-term (YNP). No impacts to GTNP.	Percent of park area in which non-natural sounds would be audible: negligible impacts (YNP and GTNP). Percent time audible: moderate, adverse, and short-term impacts (YNP), negligible to GTNP. Maximum sound levels: negligible impacts (YNP and GTNP).	Percent of park area in which non-natural sounds would be audible: moderate (YNP) to major (GTNP), adverse, and short-term impacts. Percent time audible: major (YNP) to moderate (GTNP), adverse, and short-term impacts. Maximum sound levels: minor, adverse, short-term (YNP and GTNP).	Percent of park area in which non-natural sounds would be audible: moderate, adverse, and short-term impacts (YNP and GTNP). Percent time audible: major (YNP) to minor (GTNP), adverse, and short-term impacts. Maximum sound levels: minor, adverse, short-term (YNP and GTNP).	Percent of park area in which non-natural sounds would be audible: moderate, adverse, and short-term impacts (YNP and GTNP). Percent time audible: moderate, adverse, and short-term (YNP) to negligible (GTNP) impacts. Maximum sound levels: negligible impacts (YNP and GTNP).	Percent of park area in which non-natural sounds would be audible: moderate, adverse, and short-term impacts (YNP and GTNP). Percent time audible: major (YNP) to moderate (GTNP), adverse, and short-term impacts. Maximum sound levels: minor, adverse, short-term (YNP and GTNP).
Visitor Access and Circulation						
Minor, adverse and long-term localized impacts due to closure of Sylvan Pass.	Impacts vary by mode of transportation: major, adverse, long-term impacts to those who prefer snowmobile travel; major beneficial impacts to those who prefer to snowcoach. Minor, adverse, long-term and localized impacts due to closure of Sylvan Pass.	Major, adverse and long-term impacts due to greatly reduced access (3A) or no motorized access (3B).	Negligible impacts due to ample motorized visitor access.	Minor, adverse and long-term impacts due to ample motorized visitor access but restricted limit, although flexible daily limit would provide more access on busy days.	Impacts vary by mode of transportation: moderate adverse to moderate beneficial in Yellowstone (wheeled vehicle access on west side roads; closure of East Entrance to through travel). All impacts would be long-term.	Minor, adverse and long-term localized impacts due to closure of Sylvan Pass.
Visitor Experience						
Minor adverse and long-term impacts, primarily from potentially rough roads and Sylvan Pass closure.	Minor adverse and long-term impacts, primarily from snowcoach slowness, snowcoach ruts, and Grand Teton closures for some visitors.	Major adverse and long-term impacts: decreased opportunities to view wildlife and scenery.	Moderate adverse long-term impacts due to Non-BAT snowmobiles in GTNP, high number of snowmobiles in both parks, and safety problems from	Minor adverse long-term impacts (similar to alternative 1) due to safety problems from unguided access and increased OSV travel during peak periods which can	Minor adverse long-term impacts (similar to alternative 1) due to possible crowding at Old Faithful and possible localized visibility degradation.	Minor adverse and long-term impacts, primarily from Sylvan Pass closure.

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Alternative 1	Alternative 2	Alternative 3A/B	Alternative 4	Alternative 5	Alternative 6	Alternative 7
			unguided access.	reduce opportunities for quiet and solitude and clean air.		
Socioeconomics ²						
Compared to 1997-1998 historic use: negligible, adverse to beneficial in the three-state, five-county, Cody and Jackson areas, and negligible adverse to minor beneficial in West Yellowstone. Compared to the no action alternative: negligible beneficial in the three-state, five-county, Cody and Jackson, WY areas, and minor to major beneficial in West Yellowstone.	Compared to 1997-1998 historic use: negligible, adverse to beneficial in the three-state, five-county, Cody and Jackson areas; moderate adverse to negligible beneficial for West Yellowstone. Compared to the no action alternative: negligible beneficial in the three-state, five-county, Cody and Jackson, WY areas and negligible to moderate beneficial for West Yellowstone, MT.	Compared to 1997-1998 historic use: negligible adverse in the three-state, five-county, Cody and Jackson areas and negligible to major adverse for West Yellowstone. Compared to the no action alternative: negligible beneficial in all areas.	Compared to 1997-1998 historic use: negligible, adverse to beneficial in the three-state, five-county, Cody and Jackson areas and negligible adverse to moderate beneficial for West Yellowstone. Compared to the no action alternative: negligible beneficial in the three-state, five-county, Cody and Jackson, WY areas and minor beneficial to major beneficial for West Yellowstone.	Compared to 1997-1998 historic use: Negligible adverse to negligible beneficial in the three-state, five-county, Cody and Jackson areas and negligible adverse to minor beneficial for West Yellowstone. Compared to the no action alternative: Negligible Beneficial in the three-state, five-county, Cody and Jackson areas and minor beneficial to major beneficial for West Yellowstone.	Compared to 1997-1998 historic use: Negligible adverse to negligible beneficial in the three-state, five-county, Cody and Jackson areas and negligible adverse to moderate beneficial in West Yellowstone. Compared to the no action alternative: Negligible beneficial in the three-state, five-county, Cody and Jackson areas and negligible beneficial to major beneficial for West Yellowstone.	Compared to 1997-1998 and 2001-2002 historic use: Negligible adverse to beneficial in the three-state, five-county, Cody (1997-1998 only) and Jackson areas. Negligible adverse to minor beneficial in West Yellowstone. Minor adverse in Wapiti, WY. Compared to 2001-2002 historic use: Negligible adverse in Cody. Compared to the no action alternative: negligible beneficial in the three-state, five-county, Cody and Jackson areas. Minor to moderate beneficial in West Yellowstone. Negligible adverse in Wapiti, WY.

²The economic impacts are the IMPLAN outputs as compared to the definition of impacts in Chapter IV. A negligible impact means that the impact is difficult to detect at the state, 5-county, or community level. It does not mean that within any of those three levels adverse (or positive) effects are not occurring. Individual business or geographic-area impacts are discussed in Chapter IV.