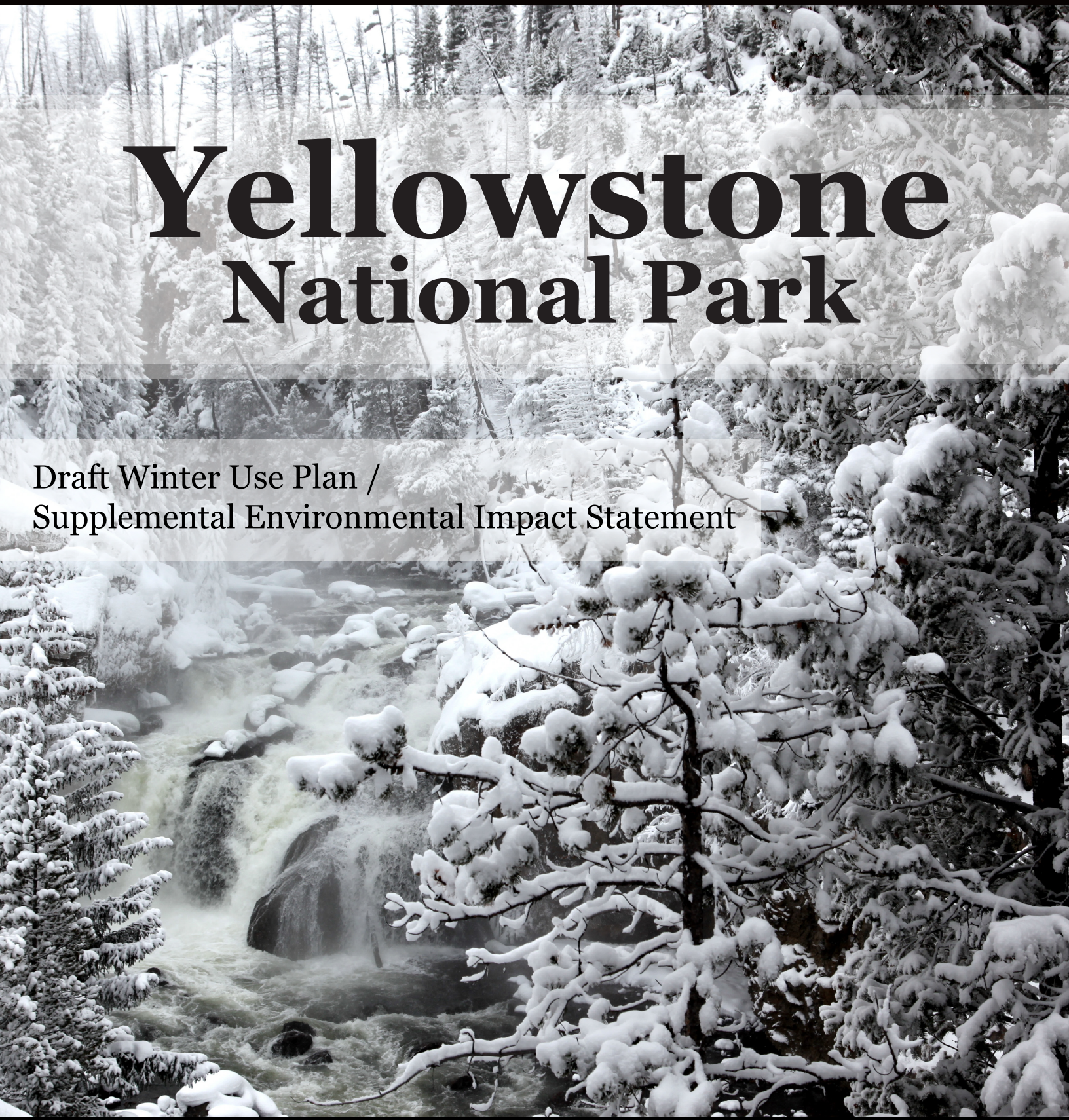
Yellowstone National Park
Draft Winter Use Plan /
Supplemental Environmental Impact Statement
Wyoming, Montana, Idaho

National Park Service
U.S. Department of the Interior

Yellowstone National Park

Draft Winter Use Plan / Supplemental Environmental Impact Statement



Summer 2012

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
YELLOWSTONE NATIONAL PARK
DRAFT WINTER USE PLAN / SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

Lead Agency: National Park Service (NPS), U.S. Department of the Interior

This Yellowstone National Park Draft Winter Use Plan / Supplemental Environmental Impact Statement (draft plan/SEIS) evaluates the impacts of a range of alternatives for managing winter use in the interior of Yellowstone National Park (Yellowstone or the park) in a manner that protects and preserves natural and cultural resources and natural processes, provides a variety of visitor use experiences while minimizing conflicts among various users, and promotes visitor and employee safety. Upon conclusion of the draft plan/SEIS and decision-making process, the alternative selected for implementation will become the winter use plan, which will specifically address the issue of oversnow vehicle (OSV) use in the interior of the park. It will also form the basis for a special regulation to manage OSV use in the park should an alternative be selected that allows OSV use to continue.

This draft plan/SEIS evaluates the impacts of the no-action alternative (alternative 1) and three action alternatives (alternatives 2, 3, and 4). Alternative 1 would not permit public OSV use in Yellowstone because the interim regulations in effect from 2009 to 2012 would have expired, but would allow for approved non-motorized use to continue. Alternative 1 has been identified as the NPS environmentally preferable alternative. Alternative 2 would manage OSV use at the same levels as the interim regulations in effect from 2009 to 2012 (up to 318 snowmobiles and 78 snowcoaches per day). Alternative 3 would initially allow for the same level of use as alternative 2 (up to 318 snowmobiles and 78 snowcoaches per day), but would provide for a three year transition to snowcoaches starting within the 2017/2018 winter season, when all snowcoaches would be required to have best available technology (BAT). Upon completion of the transition (by the winter season 2020/2021), there would be zero snowmobiles and up to 120 snowcoaches per day in the park. Alternative 4 would manage OSV use by transportation events, with 110 total events each day. Up to 50 events would be allocated for snowmobiles and the remaining 60 for snowcoaches. This alternative would be implemented after a two-year transition period. Noncommercially guided access would also be allowed under this alternative. Snowcoaches would be required to meet BAT standards as described above. New BAT standards for snowmobiles would be implemented starting in 2017/2018. The draft plan/SEIS analyzes impacts of these alternatives in detail for wildlife and wildlife habitat, air quality, soundscapes and the acoustic environment, visitor use and experience (including visitor accessibility), health and safety, socioeconomic values, and park operations and management.

The review period for this document will end 45 days after publication of the U.S. Environmental Protection Agency Notice of Availability in the *Federal Register*. During the 45-day comment period, comments will be accepted electronically through the NPS Planning, Environment and Public Comment (PEPC) website and in hard copy delivered by the U.S. Postal Service or other mail delivery service or hand-delivered to the address below. Oral statements and written comments will also be accepted during public meetings on the draft plan/SEIS. Comments will not be accepted by fax, email, or in any format other than those specified above. Bulk comments in any format (hard copy or electronic) submitted on behalf of others will also not be accepted.

For further information, visit http://parkplanning.nps.gov/yell or contact:
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YELLOWSTONE NATIONAL PARK

DRAFT WINTER USE PLAN / SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

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EXECUTIVE SUMMARY

This Yellowstone National Park Draft Winter Use Plan / Supplemental Environmental Impact Statement (draft plan/SEIS) analyzes a range of alternatives for the management of winter use at Yellowstone National Park (Yellowstone or the park). The draft plan/SEIS assesses the impacts that could result from implementation of any of the three action alternatives, and assesses the impacts that would occur if the park were to take no action at all ("no-action" alternative).

Upon conclusion of the draft plan/SEIS and decision-making process, the alternative selected for implementation will become the winter use plan, which will specifically address the issue of oversnow vehicle (OSV) use in the interior of the park. It will also form the basis for a special regulation to manage OSV use in the park should an alternative be selected that allows OSV use to continue.

BACKGROUND

Winter use in Yellowstone, specifically issues related to OSVs, has been the subject of debate for more than 75 years. At least 12 times since 1930, the National Park Service (NPS) and park stakeholders have discussed winter use in Yellowstone. Interest in accessing the park in the winter began in the early 1930s and grew throughout the years. In the 1970s, 1980s, and early 1990s, OSV use grew in popularity. Historically, the increase in the use of these vehicles, collectively known as OSVs, to access the park, brought unanticipated problems including air and noise pollution, wildlife harassment, and conflicts with other users, as documented in past planning efforts. To address these problems, planning for the management of OSV use began with the Master Plan in 1974. Since then, a series of planning processes have examined winter use in Yellowstone. A detailed description of these processes can be found on the park's winter use website at http://www.nps.gov/yell/planyourvisit/winteruse.htm.

In 2009, following litigation over a 2007 winter-use plan and rule, the NPS completed a new Interim Winter Use Plan/Finding of No Significant Impact (FONSI) and promulgated a new interim rule. The interim plan and rule allowed access for up to 318 snowmobiles and 78 snowcoaches into Yellowstone per day during the 2009/2010 and 2010/2011 winter seasons. The rule also continued to require all snowmobiles and snowcoaches to be guided, and required snowmobiles to meet best available technology (BAT) requirements. The rule provided for motorized OSV travel over Sylvan Pass and Yellowstone's East Entrance Road, as agreed to by the Sylvan Pass Study Group (the NPS, state of Wyoming, Park County, Wyoming, and the City of Cody). However, the interim plan and rule did not allow snowmobile and snowcoach use after March 2011.

The 2009 interim plan and rule were challenged by the State of Wyoming and Park County, Wyoming. On September 17, 2010, the Wyoming court issued a ruling in favor of the NPS on the interim plan and rule, which expired on March 15, 2011, following the close of the 2010/2011 winter season. The 10th Circuit Court of Appeals affirmed that ruling in February 2012.

In May 2011, the NPS released the 2011 Draft Winter Use Plan/Environmental Impact Statement (EIS). During public comment on the draft, the NPS determined that additional study was needed prior to put a long-term plan in place. As a result, in November 2011, the NPS released a Final Winter Use Plan/EIS with a preferred alternative applicable only for the 2011/2012 winter season, for which the park would operate under the same rules and restrictions in place during the previous two seasons. In December 2011, both a record of decision (ROD) and Final Regulation implementing this preferred alternative were issued. As of March 15, 2012, no motorized OSVs use can be allowed in the park unless a new ROD is signed and a new regulation is issued.

The Notice of Intent for this long-term draft plan/SEIS for winter use was published on February 8, 2012. The NPS intends to make a decision regarding future winter use prior to the 2012/2013 winter season.

PURPOSE OF THE PLAN

The purpose of this draft plan/SEIS is to establish a management framework that allows the public to experience the unique winter resources and values at Yellowstone National Park. This draft plan/SEIS will be used to determine whether motorized winter use in the interior of the park is appropriate, and if so, the type, extent, and location of this use.

NEED FOR ACTION

The NPS provides opportunities for people to experience the park in the winter, but access to most of the park in the winter is limited by distance and the harsh winter environment, which presents challenges to safety and park operations. The park offers unique winter experiences that are distinct from other times of the year. In the past, the park has provided access to OSV users; however, the legal authority for OSV use (snowmobiles and snowcoaches) at Yellowstone expired on March 15, 2012. Therefore the park is developing this plan because a decision is needed about whether OSV use should continue, and if so, how to direct use to protect resources and values, and how to provide for visitor use and enjoyment.

OBJECTIVES IN TAKING ACTION

Under Director's Order 12 (NPS 2011b), objectives must be achieved to a large degree in order for an action be considered successful. All alternatives selected for detailed analysis in this draft plan/SEIS meet the objectives to a large degree and resolve the purpose of and need for action. Objectives for managing winter use at Yellowstone are grounded in the park's enabling legislation, purpose, significance, and the goals of the park as stated in planning documents. Objectives are also compatible with direction and guidance provided by the park's strategic plan, 1995 Natural Resources Management Plan, 1974 Master Plan, and other management guidance. The objectives for managing winter use at Yellowstone are stated below.

VISITOR USE, EXPERIENCE, AND ACCESSIBILITY

- Provide the opportunity for visitors to experience and be inspired by Yellowstone's unique winter resources and values while ensuring resource protection.
- Increase visitor understanding and appreciation of the park's winter resources.
- Provide access for winter opportunities in the park that are appropriate and universally accessible.

RESOURCES

- Wildlife: Manage winter use so that it does not disrupt the winter wildlife ecology, including sensitive species.
- Sound: Manage winter use to protect naturally occurring sounds, and to minimize loud noises.
- Air Quality: Manage winter use to minimize impacts to resources that may be affected by air pollution, including visibility and aquatic systems.
- Wilderness: Manage winter use to protect wilderness character and values.

- Develop and implement an adaptive management program that includes monitoring the condition of resources.

HEALTH AND SAFETY

- Manage access in the winter for the safety of all visitors and employees, including limiting impacts from emissions, noise, and known hazards.

COORDINATION AND COOPERATION

- Improve coordination and communication regarding winter use management with park partners, gateway communities, and other stakeholders.

PARK OPERATIONS AND MANAGEMENT

- Promote advances of OSV technology that will reduce impacts and facilitate continuous improvement of technology over time.
- Provide for winter use that is consistent with the park priority to provide critical visitor services at core locations.

PURPOSE AND SIGNIFICANCE OF YELLOWSTONE NATIONAL PARK

National park system units are established by Congress to fulfill specified purposes. A park's purpose provides the foundation for decision-making as it relates to the conservation of park resources and providing for the "enjoyment of future generations."

Congress established Yellowstone National Park to "dedicate and set apart as a public park or pleasuring-ground for the benefit and enjoyment of the people" and "for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition" (16 USC 21, 22).The park's purpose and significance are rooted in its enabling legislation, subsequent legislation, and current knowledge of its natural, cultural, and visual resources. Statements of a park's significance describe why the park is important within a global, national, regional, and ecosystem-wide context and are directly linked to the purpose of the park. Yellowstone is significant for the following reasons:

- It is the world's first national park.
- It preserves geologic wonders, including the world's most extraordinary collection of geysers, hot springs, and the underlying volcanic activity that sustains them. Yellowstone National Park is positioned on a "hot spot" where the earth's crust is unusually thin and molten magma rises relatively close to the surface.
- It preserves abundant and diverse wildlife in one of the largest remaining intact and wild ecosystems on earth, supporting surrounding ecosystems and serving as a benchmark for understanding nature.
- It preserves an 11,000-year continuum of human history, including sites, structures, and events that reflect our shared heritage. This history includes the birthplace of the national park idea—a milestone in conservation history.

- It provides for the benefit, enjoyment, education, and inspiration of this and future generations. Visitors have a range of opportunities to experience the essence of Yellowstone National Park's wonders and wildness in a way that honors the park's value to the human spirit and deepens the public's understanding and connection to it.

ISSUES AND IMPACT TOPICS

Issues associated with implementing a winter use management plan at Yellowstone were initially identified by the Yellowstone Winter Use project team during internal scoping and were further refined through public scoping and consultation with cooperating agencies. Table ES-1 details the issues that were discussed and analyzed in the draft plan/SEIS.

TABLE ES-1: ISSUES AND IMPACT TOPICS

Issue	Reason for Analysis
Wildlife and Wildlife Habitat, including Rare, Unique, Threatened, or Endangered Species, and Species of Concern	Various elements of the alternatives evaluated (including the use of snowmobiles, snowcoaches, and road grooming) have the potential to impact wildlife in the interior of the park. The species below were selected for detailed analysis in this draft plan/SEIS: • Elk and bison have been the subject of numerous studies relating to OSV use. These species are potentially subject to encounters and conflicts with OSV users and other winter visitors, and are brought up as species of concern by the public during scoping. • Two species, Canada lynx (*Lynx canadensis*) and gray wolf (*Canis lupus*) are listed or treated (they are species of special concern in the park) as threatened under the Endangered Species Act (ESA) and could be impacted by OSV use and associated actions. • Wolverine (*Gulo gulo*), bald eagle (*Haliaeetus leucocephalus*), and trumpeter swan (*Cygnus buccinator*) could be impacted by OSV use including noise and human presence and have been the subject of several studies related to OSV use.
Air Quality	Air quality is a key resource in itself as well as a highly prized (and expected) element of the park visitor experience. Potential impacts to air quality from winter use in Yellowstone National Park include air-quality related issues from exhaust as well as visibility (particularly from OSV emissions). During public scoping for this planning effort, as well as past planning efforts, public and cooperating agency comments raised concern about exhaust emissions from the various forms of OSV travel, as well as making suggestions for how air quality should be analyzed in the draft plan/SEIS (consideration of new technologies, development of an air monitoring protocol, among others).
Soundscapes and the Acoustic Environment	Natural sounds are intrinsic elements of the environment that are vital to the functioning of ecosystems and can be used to determine the diversity and interactions of species within communities. Soundscapes are an important part of park environments, mediating many ecological interactions and affecting the quality of visitor experience. Winter soundscapes in Yellowstone currently include both natural and non-natural sounds. During public scoping for this planning effort and during past planning efforts, public and cooperating agency commenters raised concern about the noise levels of various forms of OSV travel.

Issue	Reason for Analysis
Visitor Use, Experience, and Accessibility	The vast majority of winter visitors use OSVs to access the interior of the park. For some, these vehicles are an integral component of their experience. Others perceive negative impacts from OSV use, even if they use OSVs to access the park. Public input from this and past planning efforts has shown that expectations for a winter visitor experience in the interior of Yellowstone vary among visitors. At issue is the nature of visitor enjoyment and its relationship to the management and conservation of park resources and values. It is NPS policy to ensure that all people, including those with disabilities, have the highest reasonable level of accessibility to NPS programs, facilities and services. The draft plan/SEIS considers and analyzes the potential impacts resulting from changes to accessibility to the interior of the park for the very young, the elderly, and those that are mobility impaired. For these individuals, opportunities to access and experience the park, view wildlife and scenery, exposure to winter weather including cold temperatures and high winds, and the need for protection from these elements were considered.
Health and Safety	Public scoping for this planning effort, as well as past planning efforts, public and cooperating agency comments, indicated concerns about safely operating Sylvan Pass. Health and safety issues associated with some of the actions under consideration in this draft plan/SEIS include the effect of motorized vehicle emissions and noise on employees and visitors, avalanche hazards, and safety problems where different modes of winter transport are used in the same place or in close proximity.
Socioeconomic Values	During this and past planning efforts, public and cooperating agency commenters indicated concern about the potential economic impacts of changing the management of winter use in the park on local businesses. The gateway communities of the park are dependent, in part, on winter use of the park, and any change in management during the winter use period could impact revenue for local businesses. Concerns have also been voiced over affordable access, diversification of gateway community economies, protection of local business opportunities, and a need for additional socioeconomic surveys.
Park Management and Operations	Any changes in winter use in the park could change the level of park staff and time and other resources required and could increase the commitment of limited NPS resources (staff, money, time, and equipment). During public scoping for this planning effort, as well as past planning efforts, public and cooperating agency comments raised concern about the amount of staff and resources needed to carry out each alternative.

ALTERNATIVES

The National Environmental Policy Act requires federal agencies to explore a range of reasonable alternatives that address the purpose of and need for the action. Action alternatives may originate from the agency proposing the action, local government officials, or members of the public at public meetings or during the early stages of project development. Alternatives may also be developed in response to comments from coordinating or cooperating agencies.

Action alternatives analyzed in this document were developed based on the results of internal and public scoping, information from the Yellowstone Science Advisory Team (SAT), resource workshops, and cooperating agencies, as well as past planning efforts. These alternatives meet the management objectives of the park, while also meeting the overall purpose of and need for the proposed action. Dismissed from further analysis were alternative elements that were considered but were not technically or economically feasible, did not meet the purpose of and need for the project, created unnecessary or excessive adverse impacts to resources, and/or conflicted with the overall management of the park or its resources. A complete list of the alternatives considered, as well as those considered but dismissed from further analysis, is provided in chapter 2 of the draft plan/SEIS.

The elements of all four alternatives are detailed in table ES-2. How each of these alternatives meets the objectives of the draft plan/SEIS is detailed in table ES-3.

ELEMENTS COMMON TO ALL ALTERNATIVES

The following sections describe elements of the alternatives that are common to all alternatives, including the no-action alternative.

Administrative Use

Non-recreational, administrative use of snowmobiles would be allowed for park personnel or parties duly permitted under the provisions of 36 CFR 1.6, or other applicable permit authority. Permitted parties must use snowmobiles that meet BAT requirements unless specifically authorized otherwise by the park superintendent. Such use would not be subject to commercial or noncommercial guide requirements.

Accessibility

All alternatives would continue implementation of transition and action plans for accessibility. All action alternatives would support the philosophy of universal access in the park. The NPS would continue to make reasonable efforts to ensure accessibility to buildings, facilities, programs, and services.

Plowed Roads

Roads currently open to wheeled vehicles during the winter season would continue to be plowed for travel by private wheeled vehicles. No additional road plowing would occur under any alternative.

Non-motorized Access

Non-motorized uses currently include cross-country skiing, backcountry skiing, hiking, and snowshoeing. Where feasible, the park would continue to set tracks for skiing on snow road edges. Backcountry non-motorized use would continue to be allowed in most of the park (see the exception for sensitive areas in the "Action Alternatives" section below), subject to Yellowstone's Winter Severity Index program.

Emergency Actions

None of the alternatives preclude closures for safety or resource protection. The Superintendent would continue to have the authority to take emergency action to protect park resources or values.

Research Program

The NPS will continue to monitor the condition of park resources and conduct research as needed to increase scientific understanding of park environments and inform management. This information may lead to revised assessments of management options for winter use management and lead to operational adjustments.

Education and Outreach

Under all alternatives, the park would continue to focus on education efforts directed at visitors using personal wheeled vehicles along the northern road to Cooke. The Albright Visitor Center in Mammoth Hot Springs would remain open to the public during the winter.

NO-ACTION ALTERNATIVE

The no-action alternative is developed for two reasons. First, a no-action alternative for a management plan represents the continuation of current management into the future, which may represent a viable alternative for meeting the agency's purpose and need. Second, a no-action alternative may serve to set a baseline of existing impacts against which to compare the impacts of the action alternatives. (Director's Order 12, NPS 2011b, section 2.7). The Council on Environmental Quality (CEQ) requires that the alternatives analysis in an EIS "include the alternative of no action" (40 CFR 1502.14(d)).

As of March 15, 2012, the interim regulation in effect for the 2011/2012 winter season (allowing up to 318 snowmobiles and 78 snowcoaches in the park per day) has expired. Under alternative 1, the park would not take any action to promulgate a new regulation, and therefore no public OSV use would be permitted in Yellowstone. If this alternative were implemented, Yellowstone would be operated like many northern and high elevation national parks (Glacier, Mt. Rainier, Lassen Volcanic, for example) that have limited wheeled vehicle access during the winter. However, non-motorized access and wheeled vehicle use along the northern road would still be allowed.

Yellowstone would be accessible for skiing and snowshoeing and the backcountry would remain open. Because there would be no motorized use in the park's interior, the winter season would begin once enough snow accumulates to allow for skiing and snowshoeing. The East Entrance Road would be managed as backcountry; no administrative OSV travel would be allowed there and avalanche control operations would not occur along Sylvan Pass during the winter season. The park could be closed for wildlife management; for example, during particularly harsh winters, certain portions of the park could be closed to skiing and snowshoeing to minimize impacts on wildlife.

ACTION ALTERNATIVES

Elements that are common to all action alternatives include the following:

- **Best Available Technology**. BAT requirements now in place for snowmobiles would continue to be implemented. Individual alternatives may include additional snowmobile BAT requirements, as described below. BAT guidelines will be developed and implemented for snowcoaches by the 2017/2018 season and are described in detail in appendix A.
- **Personal Protective Equipment**. Personal protective equipment is recommended for snowmobilers, and includes a helmet, snowmobile suit and gloves, proper footwear, and hearing protection. Persons traveling by snowcoach should also wear or have access to appropriate personal protective equipment including winter clothing, footwear, and hearing protection. Non-motorized users are recommended to wear and carry personal protective equipment as appropriate for their winter travel. For all user groups, personal protective equipment should include avalanche rescue gear (shovel, probe, and transceiver).
- **Licensing and Registration**. OSV drivers would be required to possess and carry a valid motor vehicle operator's license at all times. A learner's permit would not satisfy this requirement. Snowmobiles would be required to be properly registered and display a valid registration from a state or province in the United States or Canada, respectively.
- **Speed Limits**. Maximum speed for all OSV would be 35 miles per hour (mph). Speed limits may be lower in more congested areas or wildlife sensitive corridors. For example, between West Yellowstone and Old Faithful. In developed areas, the speed limit would be 15 to 25 mph.

- **OSV Routes**. OSV use would continue to be allowed only on designated routes, which are groomed roads that normally carry wheeled vehicles in the summer. No off-road or off-route OSV use would be permitted. Not all routes available for summer use would be groomed and maintained for OSV use in winter.
- **Cave Falls Road**. The snowmobile route to Cave Falls would continue to operate. This route would be approximately one mile into the park to Cave Falls (a dead end). Up to 50 snowmobiles could enter this area per day; these snowmobiles would not be required to meet BAT requirements. This area would be exempt from guiding and BAT requirements because the one-mile, dead-end route does not connect to other snow roads in the park, and these requirements would be not applicable to a one-mile stretch of road. The 50 snowmobile limit for the Cave Fall route would not be part of the snowmobile limits discussed below under the action alternatives.
- **OSV Management**. Early and late entries (before 7:00 a.m. or after 9:00 p.m.) for special tours would not be permitted, including departures from Snow Lodge. Limited exceptions would be allowed for administrative travel and emergencies.
- **Non-motorized Use Areas**. Approximately 35 miles of park road would continue to be groomed for cross-country skiing. These roads are mainly used during the summer, and are closed to OSV use. The roads may be machine groomed for skiing.
- **Adaptive Management**. All action alternatives incorporate adaptive management initiatives that are designed to assist the park in meeting the objectives of this draft plan/SEIS. See appendix A for more details on adaptive management.
- **Education and Outreach**. All action alternatives would include the continuation of educational efforts in the interior of the park including programs at the warming huts and Snow Lodge, among others.
- **Sylvan Pass Avalanche Control**. For action alternatives that include maintaining Sylvan Pass for OSV access (alternatives 2 and 4), the pass would continue to be operated in accordance with the Sylvan Pass Working Group Agreement. A combination of avalanche mitigation techniques may be used, including forecasting and helicopter and howitzer-dispensed explosives. The results of the most recent safety evaluation of Sylvan Pass by the Occupational Safety and Health Administration (OSHA) and an Operational Risk Management Assessment (ORMA) would be reviewed and the NPS would evaluate additional avalanche mitigation techniques and risk assessment tools to further improve safety and visitor access.

The action alternatives, alternatives 2-4, are as follows:

Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits. Under alternative 2, management of OSVs would allow for snowmobile and snowcoach use levels of up to 318 snowmobiles and 78 snowcoaches per day. All OSV requirements under the 2009 to 2012 interim regulations would continue, including all OSV guide requirements, hours of operation restrictions, and BAT requirements for snowmobiles. BAT requirements would be developed and implemented for snowcoaches.

Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only. Under alternative 3, OSV access to the park would transition to BAT snowcoaches only. Alternative 3 would initially provide for both snowmobile and snowcoach access under interim regulation levels of up to 318 snowmobiles and 78 snowcoaches per day until the 2017/2018 winter season when all snowcoaches would need to meet BAT requirements. Beginning in 2017/2018, operators would have three years – until the 2020/2021 winter season – to phase out snowmobiles. Once the 3-year phaseout is complete, the east entrance (Sylvan Pass) would be closed to use during the winter season.

Alternative 4: Manage OSV Use by Transportation Events. Under alternative 4, the park would manage OSV use by setting a maximum number of daily transportation events into the park. A transportation event is defined as one snowcoach or a group of seven snowmobiles (on average) travelling together within the park, and is based on evidence that both types of transportation events have comparable impacts to park resources and the visitor experience. The park would permit up to 110 transportation events daily, of which up to 50 daily transportation events may be groups of snowmobiles. Managing by OSV transportation events is an approach that considers the impact of OSV groups and would result in a cleaner and quieter park, enhance the visitor experience, and permit growth in visitation all while reducing impacts to park resources. This approach would facilitate greater operator flexibility, rewards future OSV technological innovations, and reduce environmental impacts from OSVs, while allowing for increases in wintertime visitation. New BAT standards for snowmobiles would be implemented starting in 2017/2018. Should OSVs meet additional environmental performance standards, each transportation event size would be able to increase, up to two snowcoaches and eight snowmobiles per event, all while reducing impacts to park resources.

Four transportation events per day (one per gate) would be reserved for noncommercially guided access. Noncommercially guided transportation events would accommodate up to 5 snowmobiles per group. Each noncommercial guide would be allowed to lead up to two noncommercial groups per season, and permits for this opportunity would be allocated via an on-line lottery system (see appendix B for more information on noncommercial guiding).

ENVIRONMENTAL CONSEQUENCES

Impacts of the alternatives were assessed in accordance with Director's Order 12 and Handbook: Conservation Planning, Environmental Impact Analysis and Decision-Making. This handbook requires that impacts on park resources be analyzed in terms of their context, duration, and intensity. The analysis provides decision-makers and the public with an understanding of the implications of winter management actions in the short and long term, cumulatively, and within context, based on an understanding and interpretation by resource professionals and specialists.

For each impact topic, methods were identified for measuring potential changes to the park's resources in each proposed action alternative. Intensity definitions were established for each impact topic to help in understanding the severity and magnitude of changes in resource conditions, both adverse and beneficial.

Each management alternative was compared to baseline conditions (alternative 1, no OSV use) to determine the context, duration, and intensity of resource impacts. A detailed description of how these impacts were analyzed across proposed action alternatives can be found in chapter 4. Table ES-4 summarizes the results of the impact analysis for the impact topics that were assessed.

TABLE ES-2: SUMMARY OF ALTERNATIVE ELEMENTS

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
General Description	Once the 2009 interim regulation expires (after the 2010/2011 season) there would be no regulation in its place and OSV use would be no longer permitted. Administrative OSV use would continue as needed. Visitors could ski or snowshoe into the park.	OSV use would continue at levels described under the 2009 to 2012 interim regulations – up to 318 snowmobiles and up to 78 snowcoaches per day.	OSV access into the park would transition to BAT compliant snowcoaches. The transition to snowcoaches would begin in the 2017/2018 winter season, when all snowcoaches must meet BAT requirements. Snowcoaches would replace snowmobiles within a 3-year period (by the 2020/2021 winter season).	Alternative 4 would allow for increases in visitation while reducing transportation-generated noise and air impacts. OSV access to the park would be managed by transportation events. A total of 110 transportation events would be allowed each day. Operators would have the flexibility to allocate their transportation events between snowmobiles and snowcoaches, with up to 50 events available for snowmobile events daily. If OSVs meet enhanced BAT there is the potential for increased use. Noncommercial guiding would be included under this alternative.
Elements Related to Snowmobile Use				
Daily Snowmobile Limits (with allocations by entrance)	n/a	Up to 318 snowmobiles per day (Actual current average is about 191 per day). Entrance allocations (by number of snowmobiles): • West – 160 • South – 114 • East – 20 • North – 12 • Old Faithful – 12	Up to 318 snowmobiles per day through 2017/2018 winter season. Entrance allocations (by number of snowmobiles): • West – 160 • South – 114 • East – 20 • North – 12 • Old Faithful – 12	110 transportation events would be allowed each day, with no more than 50 transportation events from snowmobiles. A transportation event would allow one snowcoach or one group of snowmobiles, with an average group size of 7 snowmobiles. (Each group of snowmobiles may have up to 10 vehicles, but must average a group size of 7 snowmobiles over the course of a winter season.) If snowmobiles meet enhanced BAT the alternative allows for a potential increase in the number of vehicles per transportation event – from a seasonal average of 7 to an average of 8 snowmobiles per group. Maximum allowed snowmobile transportation event entrance allocations (by gate): • West – 23 • South – 16 • East – 3 • North – 2 • Old Faithful – 2 In addition, four noncommercially guided events, with up to 5 snowmobiles per group, would be permitted each day, one from each entrance.
Variable snowmobile numbers	n/a	Daily snowmobile levels would be fixed for the season. No variation would occur.		Snowmobile numbers could vary daily, depending on how operators use their transportation events. Up to 50 daily transportation events could be allocated to snowmobiles.
Variable entrance allocations	n/a	Entrance allocations would be fixed (may not be shared between entrances).		The total number of transportation events at each gate would be fixed, but transportation events could be traded between operators. This would not apply to noncommercially guided snowmobile groups.
Snowmobile Guide Requirements, including maximum group size (if applicable)	n/a	100% commercially guided. Group size (including guide's snowmobile):10		100% guided – commercial and noncommercial guiding allowed. Group size for commercial operations (including guide):10 maximum, average of 7 averaged over a season. Four transportation events (one per gate) of up to 5 snowmobiles each would be reserved for noncommercially guided access. Each noncommercial guide would be allowed to lead up to 2 groups per season and permits for this opportunity would be allocated via an on-line lottery system.

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
BAT Requirements for Snowmobiles	n/a	BAT required for snowmobiles. Starting in the 2017/2018 season, the BAT sound standards for snowmobiles would be reduced from 73 dBA to 71 dBA.	No changes to BAT for sound standards because snowmobiles would be phased out.	BAT would be required for commercially and noncommercially guided snowmobiles. Initially, the BAT sound standard for all snowmobiles would be 73 dBA and the carbon monoxide standard would be 120 g/kW-hr. Starting in the 2017/2018 season, the BAT sound standard would be reduced to 67 dBA and the carbon monoxide standard would be reduced to 90 g/kW-hr.
Cost of snowmobile use	n/a	Park entrance fee. Cost of snowmobile guide and rental.	Park entrance fee. Cost of snowmobile guide and rental.	Park entrance fee (for commercially and noncommercially guided groups). Cost of snowmobile guide and rental. BAT snowmobile rental fees. Lottery fees for noncommercially guided groups.
Elements Related to Snowcoach Use				
Daily Snowcoach Limits (with allocations by entrance)	n/a	Up to 78 snowcoaches per day. Entrance allocations (by number of snowcoaches): • West – 34 • South – 13 • East – 2 • North – 13 • Old Faithful – 16	Up to 78 snowcoaches per day initially, allocated by entrance the same as in alternative 2. Once all snowcoaches meet BAT, increase to up to 120 BAT snowcoaches per day (with a corresponding decrease in snowmobiles over a 3-year period as snowcoach numbers increase). Entrance allocations after transition (by number of snowcoaches): • West – 62 • South – 10 • East – 0 • North – 19 • Old Faithful – 29	A transportation event would initially equal one snowcoach or one group of snowmobiles (average of 7 snowmobiles in one group, not to exceed 10, averaged over the season). The number of snowcoaches per event could increase from 1 to 2 over time if each snowcoach meets enhanced BAT (each snowcoach emits less than 71 dBA of sound). Snowcoach entrance allocations (by transportation events) if all 50 snowmobile events are used: • West – 26 • South – 10 • East – 2 • North – 10 • Old Faithful – 12 Snowcoach entrance allocations (by transportation events) if none of the commercial snowmobile events are used (106 events, with 4 events reserved for noncommerically guided snowmobile use): • West – 47 • South – 17 • East – 2 • North – 17 • Old Faithful – 23
Variable snowcoach numbers	n/a	Daily snowcoach levels would be fixed for the season. No variation would occur.		Snowcoach numbers could vary daily, depending on which vehicles the operators allocate their transportation events to. Up to 50 transportation events may be allocated to groups of snowmobiles daily. If all 50 snowmobile allocations are used, 60 allocations would be available for snowcoach use. If no snowmobile allocations are used, 106 snowcoach transportation events would be available to operators.
Variable entrance allocations	n/a	Entrance allocations would be fixed (may not be shared between entrances).		Entrance allocation would be flexible, based on the demand at the three snowcoach entry locations (i.e., sharing among operators at a single entrance).
Snowcoach Guide Requirements	n/a	Common to all action alternatives: snowcoach entry by commercial guide only.		

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Snowcoach BAT requirements	n/a	BAT would be developed and implemented for snowcoaches by the 2017/2018 season. BAT for snowcoaches would require sound emissions to be less than 75 dBA.		BAT would be developed and implemented for snowcoaches by the 2017/2018 season. BAT for snowcoaches would require sound emissions to be less than 75 dBA. With enhanced BAT, two snowcoaches would be allowed in a group if both snowcoaches have sound emission of 71 dBA or less.
Wheeled Vehicle Access – Common to all alternatives: Wheeled vehicle access would continue along the road between Mammoth Hot Springs and Cooke City. No other roads would be plowed for wheeled vehicle use.				
Other/General Elements				
Road Grooming	Allow for the minimal road grooming needed to maintain administrative access. Sylvan Pass would not be maintained.	Continue road grooming. Manage Sylvan Pass in accordance with the Sylvan Pass Working Group agreement.	Continued road grooming would be needed to maintain snowcoach and administrative access. Sylvan Pass would be closed to vehicle traffic and would not be maintained.	Continue road grooming. Manage Sylvan Pass in accordance with the Sylvan Pass Working Group agreement.
Zoning –Temporal and Spatial	n/a	Continue temporal and spatial zoning of some side roads (e.g., snowcoaches only in the morning, snowmobiles and snowcoaches in the afternoon).	The east side of the park would only be available for non-motorized use once transition to snowcoaches is complete. OSV use would not be permitted from the east entrance to the Fishing Bridge Developed Area.	Continued temporal and spatial zoning of some side roads (e.g., snowcoaches only in the morning, snowmobiles and snowcoaches in the afternoons).
Opportunities for non-motorized recreation use	Park would be open for skiing and snowshoe access. Most of the park would be considered “backcountry” for this type of use.	Continue to groom 35 miles of secondary park roads for cross-country skiers and snowshoers. Use will be permitted subject to Winter Severity Index.		
Dates/Length of Winter Season	The season would start when accumulation of snow allows for non-motorized use. It would continue into March, depending on snow levels and any closures for wildlife management and spring road plowing).	Common to all action alternatives: No change in current dates for motorized and non-motorized winter use in the park.		
Estimated number of daily vehicle passengers (excludes Mammoth to Cooke City) Maximum numbers assume 2 people per snowmobile and 12.3 per snowcoach. Average numbers assume 1.4 people per snowmobile and 8 per snowcoach.	Zero OSVs	Maximum • Snowmobile = 636 • Snowcoach = 959 • Total = 1,595 Average • Snowmobile = 445 • Snowcoach = 624 • Total = 1,069	Maximum • Snowmobile passengers = 636 (0 after phaseout) • Snowcoach passengers = 959 (1,476 after phaseout) • Total = 1,519 (1,476 after phaseout) Average • Snowmobile passengers = 445 (0 after phaseout) • Snowcoach passengers = 624 (960 after phaseout) • Total = 1,069 (960 after phaseout)	See “Table ES-2A: Alternative 4 Visitation Levels.”
Transition Period (when limits under a new regulation, that are different from current limits, would take effect)	The 2009 to 2012 interim regulations expired. No transition period.	The 2009 to 2012 interim regulations would continue. No transition period.	The 2009 to 2012 interim regulations would continue until the 2017/2018 season, after which time a 3-year phase out of snowmobiles would occur.	There would be a two-season transition period to prepare for implementation of the new winter use plan. Provisions of the 2009 to 2012 interim regulations would continue during this transition.
Adaptive Management Program	No adaptive management program would be implemented.	Adaptive management would be implemented as outlined in appendix C.		

TABLE ES-2A: ALTERNATIVE 4 VISITATION LEVELS

Scenario	Snowmobile Events Used	# of Commercial Events	Group size of Commercial Events (not including guide)	# of Non-commercially guided events	Group size of Noncommercially guided events (includes noncommercial guide)	Maximum snowmobile visitors for that group size	Average number of snowmobile visitors for that group size	Snowcoach Events Used	# of snowcoaches per event	Maximum number of snowcoach visitors	Average number of snowcoach visitors
What would a day look like where the maximum number of snowmobile events are used, all of which would reach the maximum group size of 10?	50	46	9	4	5	940	658	60	1	738	480
What would an average day look like where the maximum number of snowmobile events are used, with a group size of 7?	50	46	6	4	5	640	448	61	1	738	480
What would a day look like were no commercially guided transportation events are used for snowmobiles, and all snowcoach events are used?	4	0	0	4	5	40	28	106	1	1304	848
Enhanced BAT: What would a day look like where all OSV met enhanced BAT and the maximum number of snowmobile events are used, all of which would reach the maximum group size of 10?	50	46	9	4	5	940	658	60	2	1476	960
Enhanced BAT: What would an average day look like under enhanced BAT, where the maximum number of snowmobiles was used, with an average of 8?	50	46	7	4	5	740	518	60	2	1476	960
Enhanced BAT: What would a day look like were no commercially guided transportation events are used for snowmobiles, and all enhanced BAT snowcoach events are used?	4	0	0	4	5	40	28	106	2	2607	1696

* Maximum numbers assume 2 people per snowmobile and 12.3 per snowcoach. 12.3 is based on the average maximum capacity of the existing fleet. Average numbers assume 1.4 people per snowmobile and 8 per snowcoach, based on average visitation over the past three winter use seasons.

TABLE ES-3: HOW ALTERNATIVES MEET OBJECTIVES

Objective	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Visitor Use, Experience, and Accessibility				
Provide the opportunity for visitors to experience and be inspired by Yellowstone's unique winter resources and values while ensuring resource protection.	Meets objective to some degree because the interior of the park would be closed to OSV use, greatly limiting the visitors that can experience this area. The park would continue to provide a virtual experience for all, including administration of the website to provide understanding and appreciation of the park's winter resources to those unable to visit the park. Visitors could continue to experience the park virtually through the park's website.	Meets objective to a large degree, because visitors would be able to experience the interior of the park with OSVs from all entrances. Daily use limits of 318 snowmobiles and 78 snowcoaches would be similar to current use levels, which monitoring has shown allow for resource protection. Visitors could continue to experience the park virtually through the park's website and webcam at Old Faithful.	Meets objective to a moderate degree because visitors would be provided the opportunity to experience the interior of the park using OSV; however, after the transition period, visitors would only be able to enter the park via snowcoach. This alternative would reduce overall OSV traffic, reduce them below current levels, and ensure resource protection. Visitors could continue to experience the park virtually through the park's website and webcam at Old Faithful.	Fully meets objective because visitors would be able to experience the interior of the park using OSVs from all entrances. In addition, provisions are made to allow for increases in use, while reducing or minimizing impacts to park. The addition of noncommercial guiding would provide an additional use opportunity. Visitors could continue to experience the park virtually through the park's website and webcam at Old Faithful.
Increase visitor understanding and appreciation of the park's winter resources.	Meets objective to some degree because the interior of the park would be closed to OSV use, greatly limiting the visitors that can experience this area, but the park would continue to provide a virtual experience for all, including administration of the website to provide understanding and appreciation of the park's winter resources to those unable to visit the park.	Fully meets objective because visitors have the opportunity to visit the interior of the park and view Yellowstone in the winter, wildlife, and the park's unique geothermal features. In addition, the park would continue to provide a virtual experience for all, including administration of the website and web cam at Old Faithful to provide understanding and appreciation of the park's winter resources to those unable to visit.	Fully meets objective because visitors have the opportunity to visit the interior of the park and view Yellowstone in the winter, wildlife, and the park's unique geothermal features. In addition, the park would continue to provide a virtual experience for all, including administration of the website and web cam at Old Faithful to provide understanding and appreciation of the park's winter resources to those unable to visit.	Fully meets objective because visitors have the opportunity to visit the interior of the park and view Yellowstone in the winter, wildlife, and the park's unique geothermal features. In addition, the park would continue to provide a virtual experience for all, including administration of the website and web cam at Old Faithful to provide understanding and appreciation of the park's winter resources to those unable to visit.
Provide access for winter opportunities in the park that are appropriate and universally accessible.	Meets objective to some degree because transportation to the interior of the park would no longer be available, but non-motorized uses and virtual visitation would continue.	Meets objective to a large degree because access to winter opportunities in the interior of the park would include both snowmobile and snowcoach use. Access would be provided for a wide range of visitors.	Meets objective to a moderate degree because access to winter opportunities in the interior of the park would include both snowmobile and snowcoach use, with the eventual phaseout of snowmobiles. The lack of snowmobile access would reduce the winter opportunities available. Access would be provided for a wide range of visitors.	Meets objective to a large degree because access to winter opportunities in the interior of the park would include both snowmobile and snowcoach use. Access would be provided for a wide range of visitors.
Resources				
Wildlife: Manage winter use so that it does not disrupt the winter wildlife ecology, including sensitive species.	Meets objective to a large degree because wildlife in the interior of the park, including sensitive species, would no longer have interactions with recreational OSVs. Interactions with non-motorized users would continue on a limited basis.	Meets objective to a moderate degree because wildlife, including sensitive species, in the interior of the park have the potential to be displaced by the use of OSVs. Winter use levels would be similar to current levels, which would minimally disrupt studied wildlife species at the population level.	Meets objective to a moderate degree because wildlife in the interior of the park, including sensitive species, may be displaced by the use of OSVs. The number of OSVs in the park would be less than current levels once the transition to snowcoaches is complete, which would minimally disrupt studied wildlife species at the population level.	Meets objective to a moderate degree because wildlife in the interior of the park, including sensitive species, have the potential to be displaced by the use of OSVs. Winter use levels would be similar to current use, which would minimally disrupt studied wildlife species at the population level. Managing by transportation events would provide for fewer intervals of use and fewer disturbance events for wildlife within the park. Because there would be approximately 10% fewer transportation events under alternative 4 than alternatives 2 and 3, this alternative meets this objective to a greater degree than the other action alternatives.
Sound: Manage winter use to protect naturally occurring background sound levels and to minimize loud noises.	Meets objective to a large degree because minimal OSV use (administrative use only) would occur in the interior of the park.	Meets objective to a moderate degree because OSV use would occur in the interior of the park, but at levels that still allow for times of natural quiet.	Meets objective to a moderate degree because OSV use would occur in the interior of the park, but at levels that still allow for times of natural quiet.	Meets objective to a moderate degree because OSV use would occur in the interior of the park, but at levels that still allow for times of natural quiet. Because there would be approximately 10% fewer transportation events under alternative 4 than alternatives 2 and 3, and because managing by transportation events would provide for more intervals of quiet within the park, this alternative meets this objective to a greater degree than the other action alternatives.

Objective	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Air Quality: Manage winter use to minimize impacts to resources that may be affected by air pollution including visibility and aquatic systems.	Meets objective to a large degree because minimal OSV use (administrative use only) would occur in the interior of the park and air emissions would be at very low levels.	Meets objective to a moderate degree because OSV use, and air emissions from that use, would continue in the interior of the park. Levels of use would be similar to current use levels, which monitoring has shown to be below all regulatory standards.	Meets objective to a moderate degree because OSV use, and air emissions from that use, would continue in the interior of the park. Levels of use would be similar to current use levels, which monitoring has shown to be below all regulatory standards.	Meets objective to a moderate degree because OSV use, and air emissions from that use, would continue in the interior of the park. Levels of use would be similar to current use levels, which monitoring has shown to be below all regulatory standards.
Wilderness: Manage winter use to protect wilderness character and values.	Meets objective to a large degree because minimal OSV use (administrative use only) would occur in the interior of the park.	Meets objective to a moderate degree because OSV use would occur in the interior of the park; however, modeling and observations in the park have shown that disturbances, specifically noise, would be limited in time and duration.	Meets objective to a moderate degree because OSV use would occur in the interior of the park; however, modeling and observations in the park have shown that disturbances, specifically noise, would be limited in time and duration.	Meets objective to a moderate degree because OSV use would occur in the interior of the park; however, modeling has shown that disturbances, specifically noise, would be limited in time and duration. Management by transportation events would further limit the duration of disturbances. Because there would be approximately 10% fewer transportation events under alternative 4 than alternatives 2 and 3 (which would average 123 and 120 transportation events, respectively), this alternative meets this objective to a greater degree than the other action alternatives.
Health and Safety				
Seek to manage access in the winter for the safety of all visitors and employees, including limiting impacts from emissions, noise, and known hazards.	Meets objective to a large degree because recreational OSV use would not occur in the interior of the park. Emissions, noise, and known hazards would be reduced because the interior of the park would be closed to the public, as would Sylvan Pass; however, non-motorized use (skiing and snowshoeing) would be permitted in the interior of the park, resulting in known hazards from harsh winter conditions.	Meets objective to some degree as OSV and non-motorized use would be permitted in the interior of the park, following guidelines and regulations to promote the health and safety of visitors such as hours of operation, BAT and guiding requirements. Visitors would have the potential to be exposed to emissions, noise, and known hazards. Additionally, Sylvan Pass would continue to operate and workers would continue to be exposed to hazardous conditions inherent in conducting operations in an avalanche prone area.	Meets objective to a large degree because OSV and non-motorized use would be permitted in the interior of the park, following guidelines and regulations to promote the health and safety of visitors such as hours of operation, BAT and guiding requirements. Visitors would have the potential to be exposed to emissions, noise, and known hazards. Sylvan Pass would not continue to operate, greatly reducing the risk to park staff that would no longer be exposed to the hazardous conditions inherent in conducting operations in an avalanche prone area.	Meets objective to some degree as OSV and non-motorized use would be permitted in the interior of the park, following guidelines and regulations to promote the over the health and safety of visitors such as hours of operation, BAT and guiding requirements. Visitors would have the potential to be exposed to emissions, noise, and known hazards. Additionally, Sylvan Pass would continue to operate and workers would continue to be exposed to hazardous conditions inherent in conducting operations in an avalanche prone area.
Coordination and Cooperation				
Improve coordination and communication regarding winter use management with park partners, gateway communities, and other stakeholders.	Fully meets objective because the park would continue to coordinate and communicate with park partners, gateway communities, and other stakeholders.			
Park Management/Operations				
Develop and implement an adaptive management program that includes monitoring the condition of resources.	Meets objective to a large degree because the adaptive management program under no action would differ from the action alternatives. It would focus on monitoring park resources in the near absence of OSVs and understanding if changes to limited administrative OSV use and non-motorized uses are needed.	Fully meets objective because adaptive management would occur under these alternatives.		
Promote advances of vehicle technology (OSVs) that will reduce impacts and facilitate continuous improvement of technology over time.	Does not meet objective because OSVs would not be allowed into the park, reducing the incentive for the development of new technology.	Meets objective to a moderate degree because BAT requirements would continue to be implemented for snowmobiles and would further be developed and implemented for snowcoaches. No additional steps would be taken to promote technology.	Meets objective to a moderate degree because BAT requirements would continue to be implemented for snowmobiles and would further be developed and implemented for snowcoaches.	Meets objective to a large degree because BAT requirements would continue to be implemented for snowmobiles and would further be developed and implemented for snowcoaches. In addition, incentives to improve environmental performance of OSVs thorough enhanced BAT would reward innovation and commitment to lower impact OSVs and allow for increased use, without impacting park resources, should these reductions occur.

Objective	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Provide for winter use that is consistent with the park priority to provide critical visitor services at core locations.	Meets objective to some degree because services in the northern area of the park (Mammoth) would continue to be provided. Due to lack of OSV access, services in the interior of the park would not continue.	Meets objective to a large degree because services in the northern area of the park (Mammoth) would continue to be provided and OSV use would allow for the continuation of services in the interior of the park in the winter.		

TABLE ES-4: IMPACT SUMMARY

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Wildlife and Wildlife Habitat, including Rare, Unique, Threatened, or Endangered Species, and Species of Concern				
Bison/Elk	Based on an analysis of the available data and literature regarding bison and elk in the greater Yellowstone area, the no-action alternative would result in short and long-term negligible adverse impacts on bison and elk in the park, because OSV use would be limited to minimal administrative use and non-motorized use would be more limited, resulting in no observable impacts. Human activity during the winter months would be reduced. Cumulative impacts under alternative 1 would be long-term minor to major adverse. Alternative 1 would contribute minimally to cumulative impacts because there would be no visitor OSVs in the park.	Alternative 2 would allow for use levels similar to the 2009 to 2012 interim regulations, with BAT requirements, guiding regulations, speed limits, and restrictions on OSV access to park roads only. Continued monitoring and assessment would allow for additional restrictions to be established should impacts greater than those predicted in this draft plan/SEIS are observed. Thus, overall impacts on bison and elk under alternative 2 would be short and long-term minor to moderate adverse. Cumulative impacts would be long-term minor to major adverse, of which alternative 2 would contribute minimally.	The existing data suggest that while intensity and amount of impact to elk and bison from snowmobiles and snowcoaches differ, overall the impact of these OSVs on elk and bison is comparable. Thus, restricting OSVs to just snowcoaches would not eliminate adverse effects on wildlife. However, the available literature on bison and elk indicate that lower OSV numbers reduce wildlife displacement, behavior or physiology-related energy costs, and the potential for adverse demographic impacts, resulting in short and long-term minor to moderate adverse impacts. Cumulative impacts on bison and elk under alternative 3 would be long-term minor to major adverse, to which alternative 3 would contribute only a small amount.	Alternative 4 would allow for use levels similar to those permitted under the 2009 to 2011 interim rules, with an approximately 10% reduction in the number of transportation events. Should all OSVs meet enhanced BAT group sizes would increase, but the number of transportation events would stay the same. The allowance for up to four noncommercially guided snowmobile groups per day is not expected to increase in and displacement responses by bison and elk. Continued monitoring and assessment would allow for additional restrictions to be established should impacts greater than those predicted in this draft plan/SEIS be observed. Thus, overall impacts under alternative 4 would be short- and long-term minor to moderate adverse. Cumulative impacts would be long-term minor to major adverse, of which alternative 4 would contribute minimally.
Lynx/Wolverine	Alternative 1 would result in short- and long-term negligible adverse impacts on lynx and wolverines in the park because OSV use would be limited to minimal administrative use and there would be no observable impacts, with long-term beneficial impacts from the removal of human presence. Cumulative impacts of alternative 1 would be long-term minor to major adverse, of which alternative 1 would contribute minimally, if at all.	This alternative would maintain and allow OSV use at Sylvan Pass, the area of the park where human-wolverine interactions would be most likely to occur. However, daily entrance limits restrict the east entrance to just 20 snowmobiles and two snowcoaches per day, (approximately five transportation events), resulting in little use in this area, and minimal disturbance to wolverines. Restrictions on movements of lynx or wolverines during the winter months due to the presence and use of OSV routes in other areas of the park may limit reproductive success, dispersal, and overall genetic sustainability of the species, but such impacts are difficult to predict. Therefore, impacts predicted under this alternative would be short- and long-term minor adverse, with the potential for moderate adverse impacts if lynx and wolverines travel to other areas of the park. Cumulative impacts to lynx and wolverines under alternative 2 would be short-and long-term moderate adverse, of which alternative 2 would contribute a minimal amount.	Under this alternative Sylvan Pass would be closed to OSV use and maintenance activities would cease in the area of the park where human-wolverine and lynx interactions are most likely to occur. With a similar number of transportation events to alternative 2, (120 daily transportation events under alternative 3 versus 123 average events under alternative 2) restrictions on movements of lynx or wolverines during the winter months due to the presence and use of OSV routes in other areas of the park may limit reproductive success, dispersal, and overall genetic sustainability of the species, but such impacts are difficult to predict. Therefore, impacts predicted under this alternative would be short- and long-term minor adverse, and long-term beneficial from the removal of human presence at Sylvan Pass. Cumulative impacts to lynx and wolverines under alternative 3 would be long-term moderate adverse, to which alternative 3 would contribute minimally.	This alternative would allow OSV use at Sylvan Pass, the area of the park where human-wolverine interactions would be most likely. Furthermore, restrictions on movements of lynx or wolverines during the winter months due to the presence and use of OSV routes in other areas of the park may limit reproductive success, dispersal, and overall genetic sustainability of the species, but such impacts are difficult to predict. Therefore, impacts predicted under this alternative would be long-term minor adverse, with the potential for moderate adverse impacts if lynx and wolverines travel outside the eastern sector of the park. Overall, impacts would be reduced from use levels permitted under the 2009 to 2011 interim regulations, as the number of daily transportation events would be reduced. Should all OSVs meet enhanced BAT, the overall number of transportation events would not increase and impacts would not be expected to increase. Cumulative impacts to lynx and wolverines under alternative 4 would be moderate adverse, of which alternative 4 would contribute a minimal amount.
Trumpeter Swans/Eagles	Alternative 1 would result in short- and long-term negligible adverse impacts on swans and eagles in the park because OSV use would be limited to minimal administrative use and there would be no observable impacts. Cumulative impacts would be long-term moderate adverse, and alternative 1 would contribute minimally to the overall cumulative impacts to eagles and swans.	Alternative 2 would limit impacts to swans and eagles through use-limits, guiding requirements, and little overlap of OSV use with the active swan nesting season. Given these conditions and the mitigation measures discussed above, impacts to eagles and swans under alternative 2 would be localized short- to long-term negligible to minor adverse. Cumulative impacts would be long-term moderate adverse, and alternative 2 would contribute a small amount to the overall adverse cumulative impacts.	Alternative 3 would limit the impacts to swans and eagles through use limits, guiding requirements, and little overlap between OSV use and the active swan nesting season. The slight reduction in the number of transportation events when compared to those currently allowed (alternative 2) and guiding requirements would limit impacts to eagles and swans under alternative 3 and result in localized short and long-term, negligible to minor, adverse impacts, with impacts slightly less than alternative 2. Cumulative impacts would be long-term moderate adverse, and alternative 3 would contribute a small amount to the overall adverse cumulative impacts.	Alternative 4 would limit impacts to swans and eagles through use-limits, providing training for and limiting noncommercially guided snowmobile groups, and little overlap of OSV use with the active swan nesting season. Given these conditions and the mitigation measures that would be implemented, impacts to eagles and swans under alternative 4 would be localized short- to long-term negligible to minor adverse, and would be less than alternatives 2 or 3 due to the reduced number of transportation events. Cumulative impacts would be long-term moderate adverse, and alternative 4 would contribute a small amount to the overall adverse cumulative impacts.

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Gray Wolves	Alternative 1 would result in short- and long-term negligible adverse impacts on wolves in the park because OSV use would be limited to minimal administrative use and there would be no observable impacts. The limited human presence would have long-term beneficial impacts. Cumulative impacts would be long-term, minor, adverse, and alternative 1 would contribute a small amount to the overall cumulative impacts.	Alternative 2 would result in short- and long-term negligible to minor adverse impacts on wolves in the park because OSV use would be limited to current use levels, which would reduce the frequency of OSV encounters, and limit the duration of interaction and the approach distance of OSV users due to guiding requirements. Cumulative impacts would be long-term minor adverse, and alternative 2 would contribute a small amount to the overall adverse cumulative impacts.	Alternative 3 would result in short- and long-term negligible to minor adverse impacts on wolves in the park because OSV use, or total number of transportation events, would be slightly reduced from the levels permitted under the 2009 to 2011 interim regulations (alternative 2) and limits duration and approach distance of OSV users when encountering wolves due to guiding requirements. Cumulative impacts would be long-term minor adverse, and alternative 3 would contribute a small amount to the overall adverse cumulative impacts.	Alternative 4 would result in short- and long-term negligible to minor adverse impacts on wolves in the park, with impacts less than those expected under alternatives 2 and 4. OSV use, specifically the number of transportation events, would be reduced from the levels permitted under the 2009 to 2011 interim regulations, which would reduce the frequency of OSV encounters with wolves. Should all OSVs meet enhanced BAT it would not increase the overall number of transportation events and would not be expected to increase impact levels beyond a minimal level. Cumulative impacts would be long-term minor adverse, and alternative 4 would contribute a small amount to the overall adverse cumulative impacts.
Air Quality	The effects of alternative 1 on air quality and visibility would be long-term minor adverse. Cumulative impacts would result in long-term minor adverse impacts on air quality.	Alternative 2 would have short-term moderate adverse impacts on air quality prior to 2017/2018, but the long-term effects of alternative 2 would be minor adverse. The effect of alternative 2 on air quality would be long-term moderate adverse. The effect of alternative 2 on visibility would be long-term negligible adverse, before, during and after the transition to BAT snowcoaches. Cumulative impacts to air quality and visibility would be long-term minor adverse.	The effects of alternative 3 on air quality would be long-term minor adverse. The effect of alternative 3 on visibility would be long-term negligible adverse. Cumulative impacts to air quality and visibility would be long-term minor adverse.	The effects of alternative 4 on air quality would be long-term minor to moderate adverse. The effect of alternative 4 on visibility would be long-term negligible adverse. Cumulative impacts to air quality and visibility would be long-term minor to moderate adverse.
Soundscapes and the Acoustic Environment	The effects of alternative 1 on soundscapes would be long-term, minor to moderate, and adverse due to administrative OSV use. Moderate impacts would be limited to travel corridors. Cumulative impacts to soundscapes would be long-term, minor to moderate and adverse.	The effects of alternative 2 on soundscapes would be long-term, moderate and adverse due to the level of OSV use permitted. Cumulative impacts to soundscapes would be long-term, moderate and adverse.	The effects of alternative 3 on soundscapes would be long-term, minor to moderate and adverse, both before and after the phaseout to BAT snowcoaches only. Cumulative impacts to soundscapes would be long-term, minor to moderate and adverse.	The effects of alternative 4 on soundscapes would be long-term, minor to moderate and adverse. Cumulative impacts to soundscapes would be long-term, minor to moderate and adverse.
Visitor Use, Experience, and Accessibility	Restricting winter access to the interior of the park by non-motorized means would result in long-term major adverse impacts on the visitor use and experience to all visitors, including those with mobility impairments. Winter visitors desiring either or both non-motorized and motorized experiences would be affected by loss of access. Overall cumulative effects would be long-term major adverse.	Under alternative 2, continuing OSV use and access at the same levels as the 2009 to 2012 interim regulation limits would meet recent demand for winter visitation, including visitors with mobility impairments. Both motorized and non-motorized winter users would experience the benefits of continued access to the park's interior Therefore, alternative 2 would result in long-term benefits to visitor use and experience. Cumulative impacts to visitor use and experience under alternative 2 would be long-term and beneficial.	Under alternative 3, changes in visitor experience created by the transition to snowcoach access only would result in parkwide, long-term benefits compared to the no-action alternative. Both motorized and non-motorized winter users would experience the benefits of continued access to the park's interior. However, the opportunity to experience the park by snowmobile would be lost for all park users, including those with mobility impairments. This would result in some visitors' expectations not to be met and result in long-term minor to moderate adverse impacts. Overall, alternative 3 would result in long-term beneficial impacts to visitor experience and access, with long-term moderate adverse impacts from the phaseout of the snowmobile experience but the maintenance of other winter experiences in the park. Cumulative impacts to visitor use and experience would be long-term beneficial and long-term moderate adverse.	Under alternative 4, management by transportation event and inclusion of noncommercially guided snowmobile tours would increase visitor opportunities, resulting in parkwide, long-term beneficial impacts compared to the no-action alternative for visitor use and experience and visitor accessibility. If visitors are able to experience winter use, but not in the mode they desire due to how operators user their allocations, there would be the potential for long-term moderate adverse impacts. The amount of access into the park would remain around current levels, with the potential to increase, and they types of experiences available would increase while impacts to all resources, including visitor use, experience, and accessibility, would remain the same or decrease due to a decrease in the number of transportation events compared to the conditions allowed under the 2009 to 2011 interim regulations. Both motorized and non-motorized winter users would experience the benefits of continued access to the park's interior, and operators would have the ability to choose the type of service they provide. Resource conditions would remain largely unchanged from recent years. Overall, alternative 4 would result in long-term benefits to visitor experience and access. Cumulative impacts would be beneficial.
Health and Safety	Overall, air pollution and noise levels would be limited to administrative OSV use and would be minimal, and the closure of Sylvan Pass would reduce the avalanche risk to staff. Therefore, impacts to health and safety would be long-term negligible adverse and long-term beneficial to health and safety, with the potential for long-term minor adverse impacts from the possibility of non-motorized users being out in harsh winter conditions with minimal support facilities. Cumulative impacts would be long-term, negligible adverse.	Under alternative 2, impacts to human health and safety would be long-term negligible adverse from air and noise emissions, long-term moderate adverse from the operation of Sylvan Pass, and long-term minor adverse from user conflicts and exposure to the elements. Cumulative impacts under alternative 2 would be long-term minor adverse.	Under alternative 3, impacts to human health and safety would be long-term negligible adverse from air and noise emissions, long-term beneficial from the closure of Sylvan Pass, and long-term minor adverse from user conflicts and exposure to the elements, both before and after the transition to snowcoach only. Cumulative impacts would be long-term negligible adverse.	Under alternative 4, impacts to human health and safety would be long-term negligible adverse from air and noise emissions, long-term moderate adverse from the operation of Sylvan Pass, and long-term minor adverse from user conflicts and exposure to the elements. Cumulative impacts would be long-term minor adverse.

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Socioeconomic Values	The impacts are estimated to be negligible, adverse, and long term for the three-state area, the five-county area and Cody and Jackson, Wyoming. West Yellowstone is projected to experience minor, adverse, long-term impacts. As described earlier, the adverse direct impacts would be most directly felt by communities and businesses near the park, especially in areas that have a higher proportion of business tied directly to park visitation. At the north entrance, Gardiner, Montana, might experience beneficial impacts if visitors who would have visited the other entrances switch to the North. The IMPLAN modeling captures the indirect and induced effects as well. As individual businesses are adversely affected, they would reduce purchases of other goods and services from suppliers. Conversely if individual businesses are beneficially affected they would increase the purchase of goods and services from suppliers. These feedback effects impact sectors of the economy beyond those that are influenced directly by visitors. Cumulative impacts would be long-term negligible adverse or beneficial cumulative impacts on the socioeconomic environment. In West Yellowstone cumulative negligible to minor adverse impacts could result.	In conclusion, compared to alternative 1, alternative 2 would result in beneficial, long-term impacts for the three-state area, the five county area, and the communities of Cody and Jackson. In West Yellowstone, the beneficial, long-term impacts would be larger on average. Alternative 2 continues current management, under which there has been some increase in visitation, especially for snowcoach use. Cumulative impacts would be long-term beneficial.	Compared to alternative 1, alternative 3 is expected to have on average beneficial, long-term impacts for all the communities except Cody, as seen in tables 62, 63, and 64. In order to generate larger beneficial impacts under this alternative, demand for snowcoach tours must increase to more than make up for the eventual phaseout of snowmobiles. Cumulative impacts would be long-term beneficial.	Compared to alternative 1, alternative 4 is expected to have on average beneficial, long-term impacts for all the communities, as seen in tables 62, 63, and 64. Cumulative impacts would be long-term beneficial.
Park Operations and Management	Alternative 1 would have long-term negligible adverse impacts to park operations because staffing and resource requirements would be covered by existing funding, as well as long-term benefits from the potential reallocation of staff to other areas of the park during the winter season. In addition, fuel requirements and greenhouse gas emissions would be reduced from current levels because the number of staff needed in the interior of the park, and therefore OSV use, would be reduced. Cumulative impacts under alternative 1 would be long-term, negligible to minor adverse, of which alternative 1 would contribute a large part.	Alternative 2 would result in long-term negligible to minor adverse impacts because the staffing and resource requirements would be similar to those currently funded, and this level of funding would be expected to continue. Any additional resources required may impact park operations, but through other funding sources or reallocation of resources, would not have a noticeable impact on park operations. Cumulative impacts under alternative 2 would be long-term negligible to minor adverse, of which alternative 2 would constitute a large part.	Alternative 3 would result in long-term negligible to minor adverse impacts to park operations and management because the staffing and resource requirements for implementation of the alternative would likely be met with existing funding sources and because costs would be slightly less than current operations. Cumulative impacts under alternative 3 would be long-term negligible to minor adverse, of which alternative 3 would constitute a large part.	Alternative 4 would result in long-term negligible to minor adverse impacts to park operations and management because the staffing and resource requirements for implementation of the alternative would likely be met with existing funding sources and because costs would be comparable to current operations. Additional management required under this alternative would be accommodated through existing staff or from lottery fees associated with the noncommercial guiding program. Cumulative impacts under alternative 3 would be long-term negligible to minor adverse, of which alternative 3 would constitute a large part.

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TABLES

ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Industrial Hygienists
ADA	American with Disabilities Act
ARD	Air Resources Division
AQRV	air quality related value
BAT	best available technology
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
dB decibel	
dBA decibel	(A-weighted)
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FLAG	Federal Land Managers' Air Quality Related Values Work Group
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GC glucocorticoi	ds
GHG greenhouse	gas
GIS	Geographical Information System
GPS	Global Positioning System
IBMP	Interagency Bison Management Plan
MBTA	Migratory Bird Treaty Act
MCF	1,000 cubic feet
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NIOSH	National Institute for Occupational Safety and Health
NPS	National Park Service
ORMA Operational	Risk Management Assessment
OSHA	Occupational Safety and Health Administration
OSV oversnow	vehicle
PM particulate	matter
PEL	permissible exposure limit
PEPC	Planning, Environment, and Public Comment
plan/SEIS	Winter Use Plan / Supplemental Environmental Impact Statement
PSD	prevention of significant deterioration

REL	recommended exposure limits
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SAE	Society of Automotive Engineers
SAT	Science Advisory Team
TLV	threshold limit value
TWA time-w	eighted average
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
VSO	Visitor Services Office

CHAPTER 1

Purpose of and Need for Action

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

This "Purpose of and Need for Action" chapter describes why the National Park Service (NPS) is taking action at this time with respect to winter use in the interior of Yellowstone National Park (Yellowstone, or the park). This Draft Winter Use Plan / Supplemental Environmental Impact Statement (draft plan/SEIS) presents three action alternatives for managing winter use, including oversnow vehicle (OSV) use, and assesses the impacts that could result if the park were to take no action (no-action alternative) or implement any of the three action alternatives. Upon conclusion of the draft plan/SEIS and decision-making process, the alternative selected for implementation will become the long-term winter use plan, which will specifically address the issue of OSV use in the interior of the park. It will also form the basis for a special regulation to manage OSV use in the park should an alternative be selected that would allow OSV use to continue. For a definition of OSV and other detailed definitions used throughout the document, please see the "Definitions" section in chapter 2.

Specifically, this chapter includes the following:

- Statements of the purpose of and need for taking action, as well as objectives in taking action developed during internal and public scoping;
- A description of the project study area;
- A description of the purpose and significance of the park;
- A description of the history and management of winter use in the park, with a focus on OSV management;
- Related laws, policies, plans, and other constraints; and
- A discussion of issues and impact topics identified during the scoping process and considered in preparation of this draft plan/SEIS, as well as issues and impact topics dismissed from further analysis.

PURPOSE OF THE PLAN

The purpose of this draft plan/SEIS is to establish a management framework that allows the public to experience the unique winter resources and values at Yellowstone National Park. This draft plan/SEIS will be used to determine whether motorized winter use in the interior of the park is appropriate, and if so, the type, extent, and location of this use.

*"**Purpose** is a statement of goals and objectives that NPS intends to fulfill by taking action."*

NEED FOR ACTION

The NPS provides opportunities for people to experience the park in the winter, but access to most of the park in the winter is limited by distance and the harsh winter environment, which presents challenges to safety and park operations. The park offers unique winter experiences that are distinct from other times of the year. In the past, the park has provided access to OSV users; however, the legal authority for OSV use

*"**Need** is a discussion of existing conditions that need to be changed, problems that need to be remedied, decisions that need to be made, and policies or mandates that need to be implemented. In other words, it explains why [the] park is proposing this action at this time."*

(snowmobiles and snowcoaches) at Yellowstone expired on March 15, 2012. Therefore the park is developing this plan because a decision is needed about whether OSV use should continue, and if so, how to direct use to protect resources and values, and how to provide for visitor use and enjoyment.

OBJECTIVES IN TAKING ACTION

***Objectives** are "…goals the park must accomplish by taking action for the action to be considered a success."*

Pursuant to the NPS Director's Order 12 Handbook, objectives are what must be achieved to a large degree for the action to be considered a success (NPS 2001). All alternatives carried forward for detailed analysis in this draft plan/SEIS meet the park's objectives to a large degree and resolve the purpose of and need for action. Objectives for managing winter use at Yellowstone are grounded in the park's enabling legislation, purpose, significance, and the goals of the park as stated in planning documents. Objectives are also compatible with direction and guidance provided by the park's strategic plan, 1995 Natural Resources Management Plan, 1974 Master Plan, and other management guidance. The objectives for managing winter use at Yellowstone are stated below.

VISITOR USE, EXPERIENCE, AND ACCESSIBILITY

- Provide the opportunity for visitors to experience and be inspired by Yellowstone's unique winter resources and values while ensuring resource protection.
- Increase visitor understanding and appreciation of the park's winter resources.
- Provide access for winter opportunities in the park that are appropriate and universally accessible.

RESOURCES

- Wildlife: Manage winter use so that it does not disrupt the winter wildlife ecology, including sensitive species.
- Sound: Manage winter use to protect naturally occurring sounds, and to minimize loud noises.
- Air Quality: Manage winter use to minimize impacts to resources that may be affected by air pollution, including visibility and aquatic systems.
- Wilderness: Manage winter use to protect wilderness character and values.
- Develop and implement an adaptive management program that includes monitoring the condition of resources.

HEALTH AND SAFETY

- Manage access in the winter for the safety of all visitors and employees, including limiting impacts from emissions, noise, and known hazards.

COORDINATION AND COOPERATION

- Improve coordination and communication regarding winter use management with park partners, gateway communities, and other stakeholders.

PARK OPERATIONS AND MANAGEMENT

- Promote advances of OSV technology that will reduce impacts and facilitate continuous improvement of technology over time.
- Provide for winter use that is consistent with the park priority to provide critical visitor services at core locations.

PROJECT STUDY AREA

The geographic study area for this draft plan/SEIS is Yellowstone National Park in the states of Wyoming, Montana, and Idaho, (figure 1) unless otherwise noted under each resource topic.

PURPOSE AND SIGNIFICANCE OF YELLOWSTONE NATIONAL PARK

National park system units are established by Congress to fulfill specified purposes. A park's purpose provides the foundation for decision-making as it relates to the conservation of park resources and providing for the "enjoyment of future generations."

Congress established Yellowstone National Park to "dedicate and set apart as a public park or pleasuring-ground for the benefit and enjoyment of the people; … for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition" (U.S. Congress 1872). Yellowstone National Park's purpose and significance are rooted in its enabling legislation (as described further under "Related Laws, Policies, Plans, and Constraints"), subsequent legislation, and current knowledge of its natural, cultural, and visual resources. Statements of a park's significance describe why the park is important within a global, national, regional, and ecosystem-wide context and are directly linked to the purpose of the park. Yellowstone National Park is significant for the following reasons:

- It is the world's first national park.
- It preserves geologic wonders, including the world's most extraordinary collection of geysers and hot springs and the underlying volcanic activity that sustains them. Yellowstone National Park is positioned on a "hot spot," where the earth's crust is unusually thin and molten magma rises relatively close to the surface.
- It preserves abundant and diverse wildlife in one of the largest remaining intact and wild ecosystems on earth, supporting surrounding ecosystems and serving as a benchmark for understanding nature.

Hot Spring in Winter

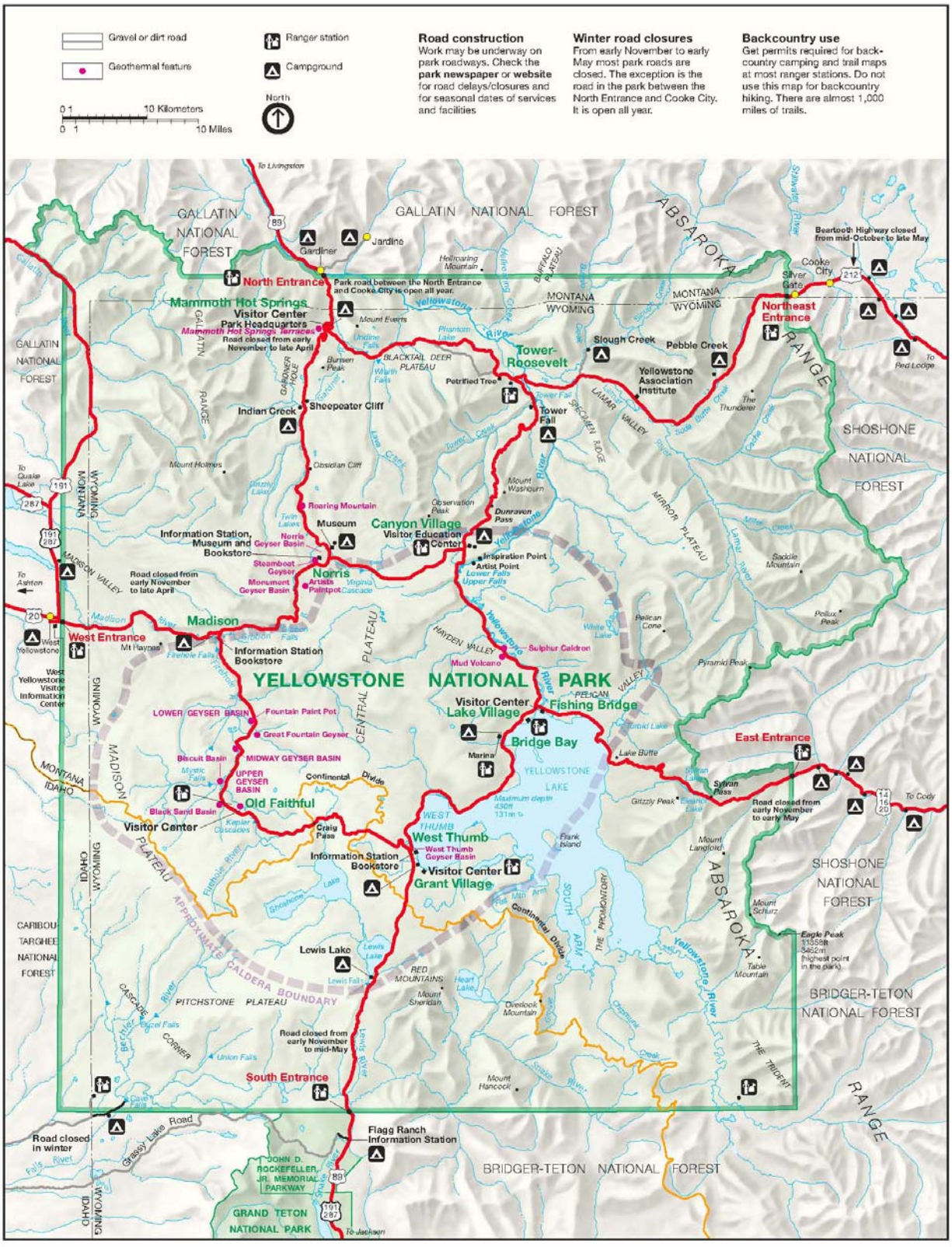


FIGURE 1: YELLOWSTONE NATIONAL PARK MAP

- It preserves an 11,000-year continuum of human history, including sites, structures, and events that reflect our shared heritage. This history includes the birthplace of the national park idea—a milestone in conservation history.
- It provides for the benefit, enjoyment, education, and inspiration of this and future generations. Visitors have a range of opportunities to experience the essence of Yellowstone National Park's wonders and wildness in a way that honors the park's value to the human spirit and deepens the public's understanding and connection to it.

SUMMARY OF OVERSNOW VEHICLE MANAGEMENT AT YELLOWSTONE NATIONAL PARK

Winter use in Yellowstone, specifically issues related to OSVs, has been the subject of debate for more than 75 years. At least 12 times since 1930, the NPS and park stakeholders have discussed winter use in Yellowstone. Interest in accessing the park in the winter began in the early 1930s and grew throughout the years. In the 1970s, 1980s, and early 1990s, snowmobile use in the park grew consistently, with the use of snowcoaches following in popularity. Historically, the increase in the use of these vehicles, collectively known as OSVs, to access the park, brought unanticipated problems including air and noise pollution, wildlife harassment, and conflicts with other users, as documented in past planning efforts. To address these problems, planning for the management of OSV use began with the Master Plan in 1974. Since then, a series of planning processes have examined winter use in Yellowstone. A detailed description of these processes can be found on the park's winter use website at http://www.nps.gov/yell/planyourvisit/winteruse.htm.

In 2009, following litigation over a 2007 plan and rule, the NPS completed a new Interim Winter Use Plan Finding of No Significant Impact (FONSI) and promulgated an interim rule. The interim plan and rule allowed access for up to 318 snowmobiles and 78 snowcoaches into Yellowstone per day during the 2009/2010 and 2010/2011 winter seasons. It continued to require all snowmobiles and snowcoaches to be 100 percent guided, and required snowmobiles to meet best available technology (BAT) requirements.

In addition, the rule provided for motorized OSV travel over Sylvan Pass and Yellowstone's east entrance road as agreed to by the Sylvan Pass Study Group (the NPS, state of Wyoming, Park County, Wyoming, and the City of Cody). The interim plan and rule did not allow snowmobile and snowcoach use after March 2011.

The 2009 interim plan and rule were challenged by the State of Wyoming and Park County, Wyoming. On September 17, 2010, the Wyoming court issued a ruling in favor of the NPS on the interim plan and rule, which expired on March 15, 2011, following the close of the 2010/2011 winter season. This ruling was affirmed by the 10th Circuit Court of Appeals in February 2012.

In May 2011, the NPS released the 2011 Draft Winter Use Plan/Environmental Impact Statement (EIS). Following public comment on the draft, the NPS determined that additional study was needed prior to putting a long-term plan in place. As a result, in November 2011 NPS released a Final Winter Use Plan/EIS with a preferred alternative applicable only for the 2011/2012 winter season, for which the park would operate under the same rules and restrictions in place during the previous two seasons. In December 2011, a record of decision (ROD) and final regulation implementing the preferred alternative were issued. As of March 15, 2012, no motorized OSVs use can be allowed in the park unless a new ROD is signed and a new regulation is issued.

The Notice of Intent for this long-term draft plan/SEIS for winter use was published on February 8, 2012. The NPS intends to make a decision regarding future winter use prior to the 2012/2013 winter season.

SUMMARY OF SCIENTIFIC LITERATURE ON OVERSNOW VEHICLE USE

The information presented in this draft plan/SEIS, including information in the "Affected Environment" and "Environmental Consequences" chapters, was developed based on best available information regarding the resources at Yellowstone. To support the wealth of existing information, a science advisory team (SAT) was convened, resulting in a report titled Scientific Assessment of Yellowstone National Park Winter Use. In addition, an Operational Risk Management Assessment (ORMA) process was conducted to further look at Sylvan Pass operations. These processes and documents are discussed further below.

SCIENCE ADVISORY TEAM

The Superintendent of Yellowstone established a SAT to support the development of the winter use planning process. Many of the SAT activities were conducted in support of the 2011 draft and final winter use plan/EISs and are still applicable to this draft plan/SEIS. The SAT was chartered to operate for five years, with some of the activities occurring during the EIS/SEIS processes, and some activities occurring during plan implementation. The SAT charter specified the following primary goals:

1. Enhance the accountability and integrity of Yellowstone's scientific assessments of impacts from winter use activities on park natural resources.
2. Provide additional scientific interpretation of existing research to support analysis in new National Environmental Policy Act (NEPA) documents and long-term winter use management plans.
3. Provide scientific recommendations for the experimental designs and adaptive management methodologies for monitoring changes in impacts to park resources, values, and visitor experience resulting from managed winter use, to occur after the SEIS process during the adaptive management process.
4. Integrate and interpret scientific results to provide regular updates on the best available assessment of the consequences of winter use for park resources, values, and visitor experience.
5. Ensure that science is accurately represented and integrated into decision making. The SAT will provide independent peer review of scientific information to meet Department of the Interior and NPS mandates under the Information Quality Act.

The Scientific Assessment of Yellowstone National Park Winter Use was informed by facilitated workshops with natural resource and social science experts in February 2010, air quality experts in May 2010, and acoustics and soundscape experts in July 2010. SAT members were invited to participate in these workshops along with the other resource experts. Additionally, the SAT identified important issues based on their best professional judgment in a series of facilitated conference calls throughout the winter and summer of 2010. The U.S. Geological Survey Northern Rockies Science Center completed a peer review of this report according to established U.S. Geological Survey Fundamental Science Practices. Following this peer review, the report was revised with additional data incorporated and underwent additional internal NPS reviews prior to being finalized.

SCIENTIFIC ASSESSMENT OF YELLOWSTONE NATIONAL PARK WINTER USE

The Scientific Assessment of Yellowstone National Park Winter Use, which was prepared in support of the 2011 winter use plan/EISs, is available at the Yellowstone Winter Use website at http://www.nps.gov/yell/planyourvisit/winteruse.htm and the Planning, Environment, and Public

Comment (PEPC) website at http://parkplanning.nps.gov/yell. The scientific assessment refers to available scientific information related to the potential effects of OSV use on a variety of impacts including natural resources and visitor experience. The scientific assessment was reviewed for this draft plan/SEIS process and it was determined to be up to date and valid for use in this SEIS process. In addition, a literature search was conducted and it was determined that since the Scientific Assessment of Yellowstone National Park Winter Use was published, no additional studies that provide new information with a direct correlation to winter use at Yellowstone have been published. Additional information on the SAT, as well as the Scientific Assessment of Yellowstone National Park Winter Use, can be found online at: http://www.nps.gov/yell/parkmgmt/winterusetechnicaldocuments.htm

OPERATIONAL RISK MANAGEMENT ASSESSMENT

Additional supporting information for this winter use planning process was provided from the ORMA process that occurred for the operation of Sylvan Pass in August 2010. This review was a follow up to the initial ORMA conducted in 2007. A panel of experts evaluated the risks to employee and visitor safety as reflected by the existing operations that were initiated in 2007, as well as the potential areas of improvement (for visitor access, agency cost, resource protection, and effectiveness of avalanche control) of several new potential avalanche control options, with an operational mission to avoid negative avalanche-human contact. This information was considered and incorporated into the health and safety section of this document. Additional details on this process, including the document and list of participants, can be found at the Yellowstone Winter Use website (http://www.nps.gov/yell/parkmgmt/winterusetechnicaldocuments.htm).

ISSUES AND IMPACT TOPICS

***Issues**—The issues were identified by the NPS, cooperating agencies, other agencies, and the public throughout the scoping process.*

NEPA regulations require an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR 1501.7). Issues are problems, opportunities, and concerns regarding the current and potential future management elements for managing winter use, impacts of winter use, and winter use opportunities in Yellowstone that are included in this draft plan/SEIS. The issues were identified by the NPS, cooperating agencies, other agencies, and the public throughout the scoping process. Information obtained from the public scoping period and the public comment period on the 2011 Winter Use Plan/EIS was included in this document. A detailed summary of the public outreach for the 2011 planning process, which was incorporated into this draft plan/SEIS, is provided in the "Consultation and Coordination" chapter. The impact topics discussed below were derived from issues.

Impact topics are a more refined set of concerns analyzed for each of the winter use alternatives. The impact topic represents a resource, such as Wildlife and Wildlife Habitat, that may be impacted by winter use. In the case of Wildlife and Wildlife Habitat for example, such impacts would include potential disturbance from OSV use, as further discussed below. Each impact topic is explained in the "Affected Environment" chapter. In the "Environmental Consequences" chapter, the impact topics are used to explain the extent to which an issue would be made better or worse by the actions under a particular alternative.

Public Scoping Meeting Held in West Yellowstone, Wyoming

Public scoping for this draft plan/SEIS began on February 7, 2012, with the publication of a Notice of Intent to Prepare an EIS in the *Federal Register*. During the scoping period, a total of four public scoping open houses were held: two in Montana and two in Wyoming. The public scoping period closed on March 9, 2012; the NPS received more than 73,000 separate letters on the scope of this draft plan/SEIS. Comments received included suggestions for and opposition to alternative elements, such as opposition to requiring operators to provide both snowcoaches and snowmobiles, opposition to restricting use during the first two and last two weeks of the season, questioning what defines a transportation event (called sound events during public scoping), and questioning how many noncommercially guided vehicles should be allowed. Additional comments included general support for sound event management, general opposition to sound event management, questions about the development of BAT snowcoaches and the operation of Sylvan Pass (whether it should remain open, and the impacts of that decision), and support for a transition period for phasing in any new use level requirements.

WILDLIFE AND WILDLIFE HABITAT, INCLUDING RARE, UNIQUE, THREATENED, OR ENDANGERED SPECIES, AND SPECIES OF CONCERN

Various elements of the alternatives evaluated have the potential to impact wildlife in the interior of the park. The species below were specifically selected for detailed analysis in this draft plan/SEIS due to the potential impacts of winter use in the park.

Bison Foraging in Winter

Winter use of the park by ungulates such as elk and bison is widespread, and herds of these large ungulates are focal points for visitors. Elk and bison in the park are the subject of numerous studies relating to OSV use. They are potentially subject to encounters and conflicts with OSV users and other winter visitors. Bison and elk were brought up as species of concern by the public during scoping. These two ungulates are therefore retained for analysis in this draft plan/SEIS. Three species, Canada lynx (*Lynx canadensis*), grizzly bear (*Ursus arctos horribilis*), and gray wolf (*Canis lupus*) are listed or treated as threatened (they are species of special concern in the park) under the Endangered Species Act (ESA). Grizzly bears are unlikely to experience adverse effects from OSV use, and were therefore not further evaluated in this draft plan/SEIS (see "Issues and Impact Topics Considered but Dismissed from Further Analysis"). Impacts to Canada lynx and gray wolf, however, have been carried forward for analysis because these species could be impacted by OSV use and associated actions. Additional species of concern that are relatively rare in the park or in need of special

protection and could be adversely affected by OSV use and its associated actions include the wolverine (*Gulo gulo*), bald eagle (*Haliaeetus leucocephalus*), and trumpeter swan (*Cygnus buccinator*). Other species or categories of species that were mentioned in scoping or previous NEPA analyses but that would not experience adverse impacts greater than minor and/or are not rare or in need of special protection are discussed in "Issues and Impact Topics Considered but Dismissed from Further Analysis," below.

AIR QUALITY

Section 4.7.1 of NPS *Management Policies 2006* (NPS 2006a) states that the NPS has a responsibility to protect air quality under the NPS Organic Act of 1916 and the Clean Air Act (CAA). The NPS *Management Policies 2006* note that the CAA recognizes the importance of integral vistas, which are those views perceived from within Class I areas of a specific landmark or panorama located outside the boundary of the Class I area. Integral vistas have been identified by the Service and are listed in Natural Resources Reference Manual 77. There are no regulations requiring special protection of these integral vistas, but the "NPS will strive to protect these park-related resources through cooperative means" (NPS 2006a).

Air quality is a key resource in itself as well as a highly prized (and expected) element of the park visitor experience. Potential impacts to air quality from winter use in Yellowstone include air-quality related issues from exhaust as well as visibility (particularly from OSV emissions). During public scoping for this planning effort and during past planning efforts, public and cooperating agency commenters raised concern about air emissions from the various forms of OSV travel, as well as making suggestions for how air quality should be analyzed in the draft plan/SEIS. These include consideration of new technologies, development of an air monitoring protocol, and the emission factors used to model the various forms of OSV travel, among others.

Because of the potential impacts to air quality from the alternatives under consideration in this draft plan/SEIS, including emissions, visibility, and air-quality related values, this topic is addressed in detail.

SOUNDSCAPES AND THE ACOUSTIC ENVIRONMENT

Section 4.9 of the NPS *Management Policies 2006* (NPS 2006a) states that the NPS will preserve, to the greatest extent possible, the natural soundscapes of the park, including both biological and physical sounds. Natural sounds are intrinsic elements of the environment that are vital to the functioning of ecosystems and can be used to determine the diversity and interactions of species within communities. Soundscapes are often associated with parks and are considered important components of natural wildlife interactions, as well as visitor experience.

Winter soundscapes in Yellowstone include both natural and non-natural sounds. During public scoping for this planning effort and during past planning efforts, public and cooperating agency commenters raised concern about the noise levels of various forms of OSV travel.

Because of the potential impacts to the park's natural soundscape, impacts from the alternatives under consideration in this draft plan/SEIS, this topic is analyzed in detail.

VISITOR USE, EXPERIENCE, AND ACCESSIBILITY

Example of the Sights Seen as Part of the Visitor Experience in Yellowstone in the Winter

The NPS *Management Policies 2006* state that "[t]he fundamental purpose of all parks also includes providing for the enjoyment of park resources and values by the people of the United States" (NPS 2006a). Part of visitor use and experience is visitor access to enjoying park resources and values. NPS *Management Policies 2006* states that "all reasonable efforts will be undertaken to make NPS facilities, programs, and services accessible to and usable by all people…" (NPS 2006a). During public scoping for this planning effort and during past planning efforts, public and cooperating agency commenters noted the role that various forms of access (snowcoaches and snowmobiles) play in providing visitors access to the winter experience in the interior of the park.

The vast majority of winter visitors use OSVs to access the interior of the park. For some, these vehicles are an integral component of their experience. Others perceive negative impacts from OSV use, even if they use OSVs to access the park. Public input from this and past planning efforts has shown that expectations for a winter visitor experience in the interior of Yellowstone vary among visitors. At issue is the nature of visitor enjoyment and its relationship to the management and conservation of park resources and values.

Because of the potential for the impacts to park visitor use and experience as well as visitor accessibility from the alternatives under consideration in this draft plan/SEIS, this topic is analyzed in detail. This draft plan/SEIS considers and analyzes the potential impacts resulting from changes to accessibility to the interior of the park for the very young, the elderly, and those who are mobility challenged. For these individuals, issues considered include opportunities to access and experience the park, view wildlife and scenery, and their exposure to and protection from winter weather including cold temperatures and high winds

HEALTH AND SAFETY

Section 8.2.5.1 of the NPS *Management Policies 2006* (NPS 2006a) states that the saving of human life will take precedence over all other management actions, because the NPS strives to protect human life and provide for injury-free visits. During public scoping for this planning effort and during past planning efforts, public and cooperating agency commenters indicated concerns for safety regarding the operation of Sylvan Pass, as well as noted potential safety benefits from road plowing in the interior of the park.

Health and safety issues associated with some of the actions under consideration in this draft plan/SEIS include the effect of motorized vehicle emissions and noise on employees and visitors, avalanche hazards, and safety problems where different modes of winter transport are used in close proximity. Because of these potential impacts to health and safety from the alternatives under consideration in this draft plan/SEIS, this topic is analyzed in detail.

SOCIOECONOMIC VALUES

Under Section 8.11 of the NPS *Management Policies 2006* (NPS 2006a), the NPS is required to facilitate social science studies that support the NPS mission by providing an understanding of park visitors, the non-visiting public, gateway communities and regions, and human interactions with park resources. This approach provides a scientific basis for park planning, development, operations, management, education, and interpretive activities.

During this and past planning efforts, public and cooperating agency commenters indicated concern about the potential economic impacts of changing the management of winter use in the park on local businesses. The gateway communities of the park are dependent, in part, on winter use of the park, and any change in management during the winter use period could impact local business revenue. Concerns have also been voiced over affordable access, diversification of gateway community economies, protection of local business opportunities, and a need for additional socioeconomic surveys. Because of the potential impacts on socioeconomics from the alternatives under consideration in this draft plan/SEIS, this topic is analyzed in detail.

PARK OPERATIONS AND MANAGEMENT

Due to the harsh environmental conditions, management of winter use in the interior of Yellowstone requires a sufficient number of personnel and an adequate level of funding. Experience has shown that managing winter use in the park presents logistical and financial challenges. Any significant change to winter use in the park could influence the level of park staff and time and other resources required, and could increase the commitment of limited NPS resources (staff, money, time, and equipment). During public scoping for this planning effort and during past planning efforts, public and cooperating agency commenters raised concern about the amount of staff and resources needed to carry out each alternative. Because of the potential impacts to park operations from the alternatives under consideration in this draft plan/SEIS, this topic is analyzed in detail.

ISSUES AND IMPACT TOPICS CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

As described in the "Environmental Consequences" chapter in this draft plan/SEIS, the NPS takes a "hard look" at all potential impacts by considering the direct, indirect, and cumulative effects of the proposed action on the environment, along with connected and cumulative actions. In those cases where impacts are either not anticipated or are expected to be minor or less, the issues and impact topics are dismissed from detailed analysis. As described in NEPA regulations, NEPA analysis should focus on issues that are truly significant to the action in question, rather than amassing needless detail (Council on Environmental Quality (CEQ) NEPA regulations, 40 CFR 1500.1 (b)). This section identifies the issues and impact topics dismissed from detailed analysis in this draft plan/SEIS and provides the rationale for the dismissal. Generally, issues and impact topics are dismissed from detailed analysis for one or more of the following reasons:

- The resource does not exist in the analysis area.
- The resource would not be affected by the proposal, or impacts are not reasonably expected (i.e., no measurable effects).
- Through the application of mitigation measures, there would be minor or less effects (i.e., no measurable effects) from the proposal, and there is little controversy on the subject or reasons to otherwise include the topic.

For each issue or topic presented below, if the resource is found in the analysis area or the issue is applicable to the proposal, then a limited analysis of direct, indirect, and cumulative effects is presented.

GEOLOGIC RESOURCES (SOILS, BEDROCK, STREAMBEDS, ETC.) INCLUDING GEOTHERMAL RESOURCES

Section 4.8 of the NPS *Management Policies 2006* (NPS 2006a) addresses geologic resource management, including geologic features and process. This policy states that the NPS will (1) assess the impacts of natural processes and human activities on geologic resources; (2) maintain and restore the integrity of existing geologic resources; (3) integrate geologic resource management into NPS operations and planning; and (4) interpret geologic resources for park visitors. Visitor access to the park's geologic and geothermal features in the winter months occurs via OSV on existing paved roads covered by snow. OSVs are the primary means of transportation to these sites in the interior of the park. Because any OSV use under consideration in this draft plan/SEIS would occur only on existing snow covered paved roads (the same roads open to wheeled vehicle traffic in the summer), with access to foot traffic along established boardwalks, geologic or geothermal resources would not be affected or disturbed. Therefore the potential impacts to geologic and geothermal resources from the range of alternatives evaluated have been dismissed from further analysis in this draft plan/SEIS.

Topography and soils are considered geologic resources. Geology is a major determinant of water and soil chemistry, the type of plants that will grow and thrive, and the stability of hillsides. The topography and soils of the park would not be impacted by the alternatives being considered in this draft plan/SEIS; OSV use as proposed under the action alternatives would not impact topography or soils. Any proposed OSV in the park under consideration in this draft plan/SEIS would occur on existing paved roads, which are the same roads open to wheeled vehicle traffic in the summer. Therefore, the implementation of a winter use plan would not disturb topography or soils because OSV traffic would not directly access soils or topographic features. Because no impacts would occur to soils or topography, the potential impacts to these resources have been dismissed from further analysis in this draft plan/SEIS.

GEOHAZARDS

A geohazard is an event related to geological features and processes, like an earthquake or rock slide, that cause loss of life and severe damage to property and the natural and built environment. Although geohazards, such as earthquakes, do occur in the park, they would not impact or be impacted by the implementation of any of the alternatives under consideration in this plan. Therefore, this topic is dismissed from further consideration in this draft plan/SEIS.

OTHER WILDLIFE AND WILDLIFE HABITAT

Issues and concerns about impacts to wildlife were raised during scoping and during the preparation of this and previous NEPA documents relating to OSV use in the park. These concerns centered on certain species that could be adversely affected by OSV use and/or that have been studied in relation to OSV use. As discussed earlier in this chapter, those species are included in the plan for detailed analysis. This section refers to other species that would be expected to be minimally affected by the alternatives considered in this plan. These species or categories of wildlife, and the reason for their dismissal from detailed analysis, are discussed below.

Grizzly Bear (*Ursus arctos horribilis*)

The greater Yellowstone area grizzly population is considered a distinct population segment and has increased from a low of 136 animals in 1975 to more than 500 bears in 2010 (USFWS 2010a). This increase occurred during periods of heavy OSV use, when visitor numbers in the park varied from 70,000 to 100,000 each winter. Yellowstone's grizzly bear population, estimated to be between 431 and 588 in the Yellowstone ecosystem (NPS 2010a), is currently listed as threatened (USFWS 2010a).

Grizzly bears are not active during the winter, but OSV- related activities could disturb them during hibernation or after emergence in the spring, which could occur as early as mid-February. In fall, grizzlies are in hyperphagia, an annual phase in which they gorge themselves on available foods in preparation for hibernation. Females are the first to den, starting in the first week of September, with 90 percent of female grizzlies denned by the end of November. The earliest den entry recorded for male grizzlies was the second week of October, with 90 percent denned by the fourth week of November. Dens are often found in north slopes, usually at altitudes from 6,500 to 10,000 feet (averaging 8,100 feet) close to whitebark pine and/or subalpine fir forests (McNamee 1984; Judd et al. 1986). In spring, males are first to emerge from winter hibernation, starting as early as mid-February; females with cubs usually emerge by mid-April (Haroldson et al. 2002). Spring-emerging bears consume ungulate carcasses, when available, and rely on these carcasses as a primary food source while also consuming whitebark pine nuts, spring vegetation, and over-wintered whitebark pine nuts, if available (Mattson et al. 1991; Mattson et al. 1992).

Grizzly bears are sensitive to human disturbance at den sites and Mace and Waller (1997) speculated that female grizzly bears with cubs that are still confined to the den site in the spring have the greatest potential to be disturbed by OSV use. OSV use in Yellowstone is restricted to groomed road corridors and occurs from late December to early March, when most female grizzlies are still denned. Male grizzly bears are the earliest to emerge in the spring, and may overlap with OSV use in the park.

Impacts of human recreation year-round on bears are mitigated by park established bear management areas, where human disturbance is limited by total closure of an area, trail closure, a minimum party size of four or more people, and human travel restrictions to daylight hours only. Bear management areas are designed to reduce the impacts of human disturbance in high-density bear habitat. Areas with denning females are closed from the start of spring emergence, generally March 1 (NPS 2010a). These closures would serve to further protect den sites from winter use extending until March 15.

Grizzly bears in Yellowstone generally den far from groomed park roads and areas used by recreationists, and are in hibernation for most of the winter months. Therefore, OSV use in the park as proposed in this draft plan/SEIS has little potential to disturb them. Although there is overlap with the proposed winter use season (which extends through March 15) and spring emergence (which can occur as early as mid-February), female grizzlies with cubs, which may be the most sensitive to disturbance, generally do not emerge until after winter use season has ended. In addition, areas with denning females are closed, generally March 1 (NPS 2010a). Additionally, grizzly populations were increasing in the park during winter use periods, including periods of heavy OSV use prior to 2004 and the continued, but reduced, OSV use during the following winters. The whitebark pine declines in the area may result in changes in bear ecology; however, specifics of how this may affect denning chronology are unknown. All alternatives for winter use management would have, at most under the action alternatives (alternatives 2, 3, and 4), short-term and negligible impacts on grizzly bears, because encounters between OSVs and grizzly bears are limited, both by seasonal timing and by the restriction of OSV users in the park to groomed roads. Under the no-action alternative (alternative 1), no effects would be assumed from the limited administrative use that would occur. Therefore, potential impacts on grizzly bears from the alternatives under consideration in this plan are not analyzed in further detail.

Black Bear (*Ursus americanus*)

Similar to grizzly bears, black bears begin to den in late October to mid-November and re-emerge any time from March through early May, with a general denning period of about 5 months. Therefore, during winter use, black bears are typically hibernating. In addition, previous analysis has demonstrated that existing winter recreation activities in the park do not affect black bears. Destruction of den sites or den habitat does not appear to be an issue in the park. Bears are not being disturbed while they are preparing or occupying den sites (Reinhart and Tyers 1999; Podruzny et al. 2002; Haroldson et al. 2002). The main concern is the potential for bear-human conflicts and displacement of bears while they are foraging during the pre-denning and post-emergence periods. The current winter recreation season in the park does not overlap with most bear activity and, therefore, precludes most risks of bear-human conflicts. For these reasons, impacts on black bear would be no more than short-term and negligible under all alternatives considered in this draft plan/SEIS. Therefore, potential impacts on black bears from the alternatives under consideration in this plan are not analyzed in further detail.

Cougar

Cougars are secretive predators. They weigh between 75 and 165 pounds as adults and primarily prey on elk calves and mule deer in northern Yellowstone. Cougars actively avoid encounters with humans and are rarely seen by park visitors. In 1987, the park began a two-phase study investigating the ecology, population, and movements of cougars in northern Yellowstone. Phase I took place from 1987 to 1996 and during this time researchers captured 88 cougars, 80 of which were radio collared and tracked. Phase II of the study began in 1998 and investigated the ecological role of cougars in the greater Yellowstone area ecosystem. Results of this research provide a good estimate of cougar population, and the role of cougars in the Yellowstone ecology. Yellowstone's northern range currently supports an estimated population of 14 to 23 adult cougars and numerous cubs. Hunting by humans, habitat fragmentation, and habitat loss are the primary threats to cougar populations in the greater Yellowstone area (Greater Yellowstone Science Learning Center 2010). Cougars are primarily found in the northern section of the park, where proposed OSV road corridors would be limited. Therefore, exposure to OSVs under the alternatives in this draft plan/SEIS would be rare and impacts to cougars from OSV use in the park would be short-term and at most negligible to minor under the action alternatives (alternatives 2, 3, and 4). Under the no-action alternative (alternative 1), no effects would be caused by the limited administrative use that would occur. Therefore, potential impacts on cougars from the alternatives under consideration in this plan are not analyzed in further detail.

Coyote

Coyotes are abundant, successful, and highly adaptable predators and scavengers found in most habitats below 8,000 feet throughout the greater Yellowstone area. Coyotes are adaptable to human use and appear to thrive in disturbed areas. During winter behavioral observations in 2009, coyotes generally displayed a look-resume response to OSV traffic (35.9 percent), with 41 percent showing no visible response, 20.5 percent travel, and 2.6 percent flight (McClure et al. 2009). OSV use has not been linked to declines in population or to changes in habitat use. Rather than demonstrating increased sensitivity, the coyote appears generally prone to lose its fear of humans and frequent areas of human use, searching for food or begging (Taber 2006; Van Etten et al. 2007).

The guiding requirements presently in place at Yellowstone appear to have eliminated most begging behavior. Visitors are instructed to store their food in closed compartments and to refrain from feeding begging coyotes. Additional measures include securing trash cans and areas of human food waste at developed sites. The primary issue regarding impacts of OSV use on coyotes is the effect of unguided users feeding or not securing food from scavenging coyotes (Taber 2006).

Because there would be no recreational OSV use under the no-action alternative, alternative 1 would have no effects on coyotes. Alternatives 2, 3, and 4 include guiding requirements, with trained drivers operating snowcoaches, and guides leading groups of up to 10 snowmobiles (ranging from 7 to 10 under alternative 4). As shown in past studies that looked at guided OSV use (Taber 2006; NPS 2008a), the requirement for guided use reduce the possibility of problem behaviors in coyotes because trained guides would continue to instruct their clients regarding food storage and feeding. Under alternative 4, noncommercial guides would receive similar training and would ensure their groups comply with these guidelines. Also, under these alternatives, daily entry requirements limit OSV visitation levels to a level below historical limits with the number of transportation events at or below these levels. As stated above, at these use levels monitoring has shown that coyotes generally displayed a look-resume response (McClure et al. 2009). Also, monitoring of human-wildlife encounters would continue under these alternatives. If this monitoring indicates that the presence and activities of winter visitors are having impacts on coyotes that cannot be mitigated, selected areas of the park may be closed to visitor use. Therefore, these alternatives would result in at most short-term negligible effects on coyotes.

There would be negligible impacts to coyotes under all alternatives. Therefore, potential impacts on coyotes from the alternatives under consideration in this plan are not analyzed in further detail.

Other Mid-sized Carnivores

Other mid-sized carnivores not addressed further in this analysis include the bobcat, fisher, marten, long-tailed weasel, river otter, and red fox. The reasons for dismissal of these species are discussed below. The wolverine and Canada lynx are included in the detailed analysis in this draft plan/SEIS.

The bobcat and red fox are managed as furbearers in the greater Yellowstone area, and thus may be hunted and trapped outside the park. Populations are considered stable (Olliff et al. 1999). OSV use as proposed under the alternatives considered in detail in this draft plan/SEIS would occasionally interact with these species, but such interactions would be rare and would occur in limited portions of available habitat. Interactions with OSVs would have short-term impacts, no more than negligible to minor, on the population of red fox and bobcat in the park under the action alternatives (alternatives 2, 3, and 4). Under the no-action alternative (alternative 1), no effects would occur from the limited administrative use that would occur. Therefore, potential impacts on bobcat and red fox from the alternatives under consideration in this plan are not analyzed in further detail.

Fishers live in coniferous and mixed conifer and hardwood forests and prefer mature or old-growth forest cover. During winter in the greater Yellowstone area, fishers avoid areas of deep, fluffy snow and select riparian areas with relatively gentle slopes and dense canopy cover that may provide protection from snow (USFWS 2010b; Clark et al. 1989). Fishers are active throughout the winter and are opportunistic predators primarily of snowshoe hares, porcupines, squirrels, mice, and birds. Fishers also consume carrion and plant material (e.g., berries). The breeding season is from March to April (Heinemeyer and Jones 1994). Due to concern about the status of fishers, and lack of available information on their population, on April 15, 2010, the U.S. Fish and Wildlife Service (USFWS) determined that the Northern Rocky Mountain distinct population of the fisher may warrant federal protection as a threatened or endangered species. The Northern Rocky Mountain population area includes portions of northern Idaho, western Montana, and northwestern Wyoming. Snowtrack surveys have documented fishers in the greater Yellowstone area during the late 1990s but a track and hair survey in Yellowstone from 2001 to 2004 did not detect fishers (Murphy et al. 2006; USFWS 2010b). Although there have been no recent verified sightings, fishers likely exist at very low numbers in the greater Yellowstone area (USFWS 2010b). In Yellowstone, fishers may be found primarily in the heavily forested eastern sector of the park, also preferred by lynx. OSV traffic is limited in this section of the park, resulting in minimal habitat disruption from OSV use. Fishers appear to tolerate fairly high levels of human activity, and are thriving in suburban

New England. Habitat availability is considered the most important factor to their survival (Bull et al. 2001). Impacts to fisher from OSVs use under the alternatives evaluated in detail in this draft plan/SEIS would only be short-term and negligible. Therefore, potential impacts on fishers from the alternatives under consideration in this plan are not analyzed in further detail.

Martens are smaller and more common than fishers in the greater Yellowstone area. Like fishers, martens remain active throughout the year and are most commonly found in older stands of spruce-fir. They prey on mice and voles, switching to red squirrels and hares as the snow deepens. Martens use meadows, forest edges, and rock alpine areas, with young born in mid-March to April. Mother martens raise the young in dens, and move dens frequently. The availability of dens is important for survival of young (Clark et al. 1989; Ruggiero et al. 1994). Forest fragmentation as a result of logging is a threat to the greater Yellowstone area population of marten, and disturbance of natal dens could limit survival of young. Because OSV use in Yellowstone would be restricted to roads under the alternatives and would not be in marten habitat, and OSVs would not be present in the park during the sensitive marten denning season, impacts from OSVs on martens under the alternatives evaluated would only be short-term and negligible. Therefore, potential impacts on martens from the alternatives under consideration in this plan are not analyzed in further detail.

Long-tailed weasels are solitary and voracious hunters. Weasels often tunnel under the snow to hunt prey. Long-tailed weasels are an unprotected species and little is known about their status in the park. Neither the subnivean (the area in or under the snow layer) fauna hunted by weasels nor weasel habitat would be affected by OSV use under any of the alternatives in this draft plan/SEIS. OSV use would be limited to road corridors, which would limit the exposure of weasels to OSVs since disturbance to their habitat would be limited. Impacts to this species from OSV use would be short-term and at most negligible. Therefore, potential impacts on weasels from the alternatives under consideration in this plan are not analyzed in further detail.

River otter are semi-aquatic, densely coated animals that weigh 11–30 pounds as adults. With a long, sleek body, otters are efficient aquatic predators that primarily hunt and eat fish. In the Yellowstone area, the river otter's diet is composed of a high percentage of the native species of cutthroat trout. Otters also consume long-nose suckers and a small percentage of introduced trout species. Because they rely on native cutthroat trout for a large percentage of their diet, continued declines in the population of native cutthroat trout species could negatively impact otters around Yellowstone Lake and throughout the park (Crait and Ben-David 2006). Otters are also sensitive to degradation of habitat, including clearing of riparian vegetation and aquatic pollution (Boyle 2006).

Otters in the Yellowstone area breed in late April, and give birth to young in March of the following year. Pups stay with the mother for approximately 1 year. River otters live in groups with strong social bonds. These groups consist of mother and pups, juveniles, or may be male-only (Boyle 2006). These life stages occur outside the OSV use season.

Historically, the river otter occupied most major drainages in the continental United States and Mexico. During the first half other the 1900s, river otter were heavily trapped throughout North America and were extirpated in many of the American states. In Wyoming, otter trapping was closed in 1953 and the species has been protected from take since 1973. There is an open trapping season for river otter in Idaho. Current river otter abundance estimates throughout the Rocky Mountain region are uncertain because no field techniques exist to reliably determine otter populations. There is additional uncertainty about the age at first breeding and how often otters breed. No direct measurement data exist on the effects of human-caused habitat alteration on river otters, including disturbance activities related to recreation (Boyle 2006).

Otters in Yellowstone may be found along Yellowstone Lake and Lamar River drainage and may be found along river corridors throughout the park. Otters are active during winter months and are observed playing and sliding on snow-covered banks. Park roads and OSV routes often follow river drainages, but OSVs are restricted to designated routes that are mostly setback from river banks anywhere from 10 to 300 yards, with the setback typically being 50 yards. These setback areas limit the amount of habitat that would be disturbed. The amount of disturbance in river otter habitat would be minor, characterized primarily by noise disturbance likely resulting in a response by individuals. Due to the minimal amount of habitat that would be disturbed, impacts on otter would be minor or less. Therefore, this species is dismissed from further analysis.

Moose

Moose depend on mature lodgepole pine forests for their winter range and were historically rare in Yellowstone during the early 1900s. A 1980 survey estimated park populations at less than 1,000. Moose numbers appear to be dropping and future population trends likely depend on habitat availability and conditions, predation levels, and human activities (Tyers 1999).

Moose have massive bodies, low surface area, and long legs that are well adapted to cope with extreme cold and deep snow, and moose are able to winter in areas with deeper snow than elk. Moose move from low elevation willow stands to up to 8,500-foot stands of subalpine fir and Douglas fir in November, where they overwinter (Tyers 2003) and browse on fir, willows, and lodgepole pine. Moose overwintering locations in the greater Yellowstone area include the Hermitage Point area, Buffalo valley, Willow Flat, and the Snake and Gros Ventre river corridors. In Yellowstone, they are commonly seen in the park's southwestern corner along the Bechler and Falls rivers, around Yellowstone Lake, in the Soda Butte Creek, Pelican Creek, Lewis River, and Gallatin River drainages, and in Willow Park between Norris and Mammoth. Winter use occurs along the northwest side of Yellowstone Lake and on a 1-mile segment along Falls River to Cave Falls. OSV routes under the alternatives being considered in this draft plan/SEIS run adjacent to the Lewis River from Lewis River Falls to the confluence with the Snake River, and in the Willow Park area from Mammoth to Norris. An OSV route under the alternatives being considered in this draft plan/SEIS also crosses the lower reach of Pelican Creek. OSV encounters with moose would be expected to be quite rare: annual wildlife behavioral monitoring of current OSV use in the park has no recorded sightings of moose encounters with OSVs. However, sound from OSVs may cause disturbance to moose in the area and is addressed in the "Soundscapes and the Acoustic Environment" section of the "Affected Environment" and "Environmental Consequences" chapters. Due to the lack of documented encounters and the limited areas of potential interaction, all alternatives being considered in this draft plan/SEIS would have, at most, short-term negligible impacts on moose. Therefore, potential impacts on moose from the alternatives under consideration in this plan are not analyzed in further detail.

Bighorn Sheep

Populations of bighorn sheep in Yellowstone were nearly eradicated by 1900. Since then, population estimates of bighorn sheep have varied from a low of 134 in 1998 to a high of 487 in 1981. Current threats to the population include disease, drought, and competition with other ungulates (elk, mule deer, and bison) especially during severe winters. The isolation and low population numbers of the Yellowstone bighorn sheep herds also limit population growth and range expansion. The population high of 1981 was reduced by 60 percent following an outbreak of pink-eye (Meagher et al. 1992). Yellowstone's bighorn herds were slow to recover and, as of January 2010, aerial surveys indicated a population of 250 to 275 animals (NPS 2010c; Greater Yellowstone Science Learning Center 2010). Bighorn sheep in Yellowstone winter exclusively in the steep, rocky areas found in the northern section of the park, with the core of the herd centered in the vicinity of Mount Everts. Sheep avoid areas of human

activity or development, but a 150-meter buffer from a disturbance may be sufficient in areas of low to moderate human use (Schoenecker et al. 2004). Any road use or human development that affects the migration of sheep from their lower elevation winter range to higher elevation summer range may negatively impact bighorn sheep herd populations (Legg 1998). Several areas of bighorn sheep winter range are closed to the public to minimize any adverse effects public use may have on these populations. Groomed winter OSV routes under the alternatives being considered in this draft plan/SEIS do not currently cross bighorn sheep winter range, with the closest motorized route to the Mount Everts vicinity being the plowed road from Mammoth Hot Springs to Tower. Therefore, disturbance is currently limited to any sounds that may travel into the winter range from OSVs, motorized vehicles, or non-motorized winter travelers. Impacts to bighorn sheep under all alternatives considered in this draft plan/SEIS would be short-term and negligible. Therefore, potential impacts on bighorn sheep from the alternatives under consideration in this plan are not analyzed in further detail.

Pronghorn, Mule Deer, and White-tailed Deer

Pronghorn in Yellowstone spend the winter in the area between the north entrance and Reese Creek, in a 30-km area just northwest of Gardiner, Montana (Blank and Stevens 2006). Both mule deer and white-tailed deer are found in the park during the summer but mule deer primarily winter outside of the park to the north of park boundaries. White-tailed deer are uncommon in the park and winter in Yellowstone's northern range, which is intersected by a wheeled-vehicle motorized route, and where OSVs are rare (Barmore 2003). Annual winter wildlife monitoring surveys have no recorded interactions between OSV users and ungulate species other than bison and elk. Because pronghorn, mule deer and white-tailed deer winter outside of the park or in areas that are not exposed to winter OSV use proposed under the alternatives considered in this draft plan/SEIS, impacts under all of the alternatives considered would be negligible. Therefore, potential impacts on pronghorn, mule deer, and white-tailed deer from the alternatives under consideration in this plan are not analyzed in further detail.

Birds

Most bird species are not addressed further in this analysis because they are only in the park during the summer and/or their habits are not likely to be impacted by winter recreation; therefore impacts from OSV use would be short term and would range from no impact to negligible adverse impacts for most species. This includes peregrine falcons (*Falco peregrinus*), a species of special concern that was removed from the endangered species list in 1999. Peregrines' seasonal occurrence precludes them from being affected by winter recreation. Most avian predators are not present in the park in the winter, except for bald eagles, golden eagles, and owls, and would not be impacted by OSV use. Annual winter wildlife monitoring reports observed very few golden eagle and OSV interactions. Out of about 5 to 8 observations from winter 2007 to 2009, the majority of observed golden eagle behavioral responses consisted of look-resume or no visible response, indicating few active movement responses by golden eagles (McClure et al. 2009; McClure et al. 2008; Davis et al. 2007). For the golden eagle and other avian predator species, due to the limited number of interactions and the limited amount of habitat that would be disturbed, impacts would not be greater than minor. Potential impacts to bald eagles are further addressed and carried forward for analysis in chapter 4 of the plan/SEIS.

For other species, such as non-migratory songbirds, there is the potential for impacts to individual birds or aggregations of birds if food sources are adjacent to roads or if the birds are frequently affected by either the visual or audible impacts associated with OSV use. However, there is limited potential for impacts to these species because of the low numbers present during the winter, as well as the large expanses of suitable habitat for the species to move through. Although the Scientific Assessment for Winter Use addresses potential impacts to song birds from vehicular use, specifically discussing reduced breeding success when exposed to disturbance by humans, these studies were not specific to winter use and do not

indicate that OSV use would impact songbirds in Yellowstone (NPS 2011f). In addition, other studies suggest that noise indirectly facilitates reproductive success of individuals nesting in noisy areas as a result of the disruption of predator-prey interactions (Francis et al. 2009).

In the past, ravens have approached humans and areas of human activity for food and learned how to access storage compartments under snowmobile seats to obtain food. Since 2004, guiding requirements have effectively restricted any feeding of ravens; OSV users have been instructed to store food in places inaccessible to ravens, eliminating the success of ravens at obtaining human-supplied food (Taber 2006). As such, the effects of OSV use on ravens under any alternative would be minimal under the alternatives considered in this draft plan/SEIS.

In the absence of any data indicating population decline, strong behavioral response, or displacement of bird species in the park, as well as the limited amount of birds present in the winter and limited amount of habitat that would be impacted by OSV use, impacts to birds from OSVs under the alternatives considered in this draft plan/SEIS would be short term and at most negligible to minor under the action alternatives (alternatives 2, 3, and 4). Under the no-action alternative (alternative 1), no effects would result from the limited administrative use that would occur. Therefore, potential impacts on other bird species from the alternatives under consideration in this plan are not analyzed in further detail.

Subnivean Fauna

Subnivean fauna are small mammals that live under snow during winter, including shrews, voles, pocket gophers, and mice. They are active throughout the year, eat a variety of plant and animal foods, and generally occupy habitats on or below the ground. They are important prey species for a variety of birds and mammals. In general, subnivean fauna are abundant residents of the park and any potential loss of habitat caused by road grooming or plowing operations would be compensated for by the vast amount of area in the park without roads. Also, because OSV travel is only allowed on hard road surfaces that are driven on during non-winter months, no impacts to subnivean species or their habitat would be likely. Research in other areas indicates that subnivean pits and burrows have been found under roads that have been groomed for OSV use and in snowmobile play areas (Wildlife Resource Consultants 2004). Because of this, impacts under all the alternatives considered in this draft plan/SEIS would be short-term and negligible. Therefore, potential impacts on subnivean fauna from the alternatives under consideration in this plan are not analyzed in further detail.

Reptiles, Amphibians, Fish, and Invertebrates

Reptiles found in the park include the bull snake, prairie rattlesnake, and the sagebrush lizard. Semi-aquatic species include the wandering garter snake, valley garter snake, and rubber boa. Amphibians in the park include the Columbia spotted frog, boreal chorus frog, blotched tiger salamander, and the bullfrog. The boreal toad (*Bufo boreas boreas*) and the northern leopard frog (*Rana pipiens*), are amphibian species of special concern. The northern leopard frog was historically documented to breed in the park, but currently is very scarce (Koch and Peterson 1995); the boreal toad has declined in population. These two species use many aquatic habitats, including ponds, lakes, and other wetlands.

Fish are an important part of the wildlife population in the park, linking terrestrial and aquatic environments, and supplying an important food source for bald eagles and other wildlife. Over 20 species of fish are found in the park, including non-native species, trout, and salmonids. Special concern fish species include arctic grayling (*Thymus arcticus*), the snake river cutthroat (*Oncorhynchus clarkii bouvieri*), the westslope cutthroat trout (*Oncorhynchus clarkii lewisi*), and the leatherside chum (*Gila copei*). Aquatic invertebrates are abundant in the park, because of the wide variety of habitats including thermally influenced wetlands. About 170 species have been collected and identified.

OSVs and winter recreation would have either no impact or no more than negligible impacts on reptiles, amphibians, fish, or invertebrates under the alternatives considered in this draft plan/SEIS. Reptiles and amphibians are inactive or hibernate during the winter and are therefore not exposed to the impacts of OSV use; no impacts would be expected. OSV use would not directly impact fish or aquatic life. Air pollution from OSV engines, subsequent deposition of toxins in the snowpack, and indirect negative impacts on aquatic species from snowmelt were once a concern, but new BAT requirements have reduced emissions and minimized potential impacts. As noted under the water quality dismissal (below), although there is a clear relationship between OSV use and pollutant deposition in the snowpack, monitoring has shown quantities of OSV-related pollution in snowmelt that are in the range of background or near-background levels and would have no measurable effect (Arnold and Koel 2006). Impacts to reptiles, amphibians, fish, or invertebrates would be non-existent (alternative 1) or at most negligible (alternatives 2, 3, and 4) under the alternatives considered in this draft plan/SEIS. Therefore, potential impacts on reptiles, amphibians, fish, or invertebrates from the alternatives under consideration in this plan are not analyzed in further detail.

WATER QUALITY

Section 4.6.3 of the NPS *Management Policies 2006* (NPS 2006a) states that the pollution of surface waters and groundwater by both point and nonpoint sources can impair the natural functioning of aquatic and terrestrial ecosystems and diminish the utility of park waters for visitor use and enjoyment. In the park, OSV use occurs on established, existing roads. Although there is a clear relationship between OSV use and pollutant deposition in the snowpack, monitoring has not shown more than negligible to minor quantities of OSV-related pollution in snowmelt. Any detectable vehicle-related pollution in snowmelt has been found to be in the range of background or near-background levels (Ingersoll et al. 2005). The NPS and U.S. Geological Survey will continue to monitor pollution deposition in the snowpack, and with any of the alternatives, the application of a monitoring program, resource closures, and adaptive management would represent appropriate protective actions regarding water and aquatic resources. Therefore, potential impacts on water quality from the alternatives under consideration in this plan are not analyzed in further detail.

WETLANDS AND FLOODPLAINS

Executive Order 11988 and NPS policy require that impacts on floodplains be considered in NPS undertakings. The intent of the order and guidelines is to provide for human safety and protect floodplain functions by preventing development in 100-year floodplains. Floodplains for Yellowstone are well defined. No actions proposed in this draft plan/SEIS would occur in or encroach upon floodplains and all actions would occur during the winter months when there is little concern for flooding.

Similarly, Executive Order 11990 and NPS policy require that impacts on wetlands be considered in NPS undertakings. The intent of the order and guidelines is to protect the high resource values found in wetlands by requiring that evaluation of the alternatives occur and mitigation be designed prior to development in wetlands. No actions proposed in this draft plan/SEIS would occur in or encroach on wetlands and all actions would occur during the winter months on paved roads that are open for wheeled vehicle travel in the summer. Therefore, potential impacts on wetlands and floodplains from the alternatives under consideration in this plan are not analyzed in further detail.

ECOLOGICALLY CRITICAL AREAS

Rare or Unusual Vegetation

Pursuant to Section 4.4 of the NPS *Management Policies 2006* (NPS 2006a), vegetation will be maintained as a part of the natural ecosystem of the park. Most documented vegetation impacts from OSV, specifically snowmobiles, occur when they are driven away from established roads and trails. In the park, OSV activities are limited to paved roads and along road margins where motorized use is allowed throughout the year. Because little or no vegetation exists on or immediately adjacent to the established OSV routes (which would be the same as the routes under the alternatives considered in this draft plan/SEIS) during the winter, winter use including OSV use is not likely to impact vegetation. Therefore, potential impacts on rare or unusual vegetation from the alternatives under consideration in this plan are not analyzed in further detail.

Unique Ecosystems, Biosphere Reserve, and World Heritage Sites

Section 4.3 of the NPS *Management Policies 2006* (NPS 2006a) states that the NPS recognizes that special designations apply to parts or all of some parks to highlight the additional management considerations that those designated areas warrant. Yellowstone National Park is a designated Biosphere Reserve as well as a designated World Heritage Site.

Because no changes would be made to the designation of, or contributing attributes to the Biosphere Reserve or World Heritage Site from the alternatives considered in this draft plan/SEIS, potential impacts on these resources are not analyzed in further detail.

Wilderness

Yellowstone contains recommended wilderness. Section 6 of NPS *Management Policies 2006* (NPS 2006a) states, "All NPS lands will be evaluated for their eligibility for inclusion within the national wilderness preservation system. For those lands that possess wilderness characteristics, no action that would diminish their wilderness eligibility will be taken until after Congress and the President have taken final action. Wilderness considerations will be integrated into all planning documents to guide the preservation, management, and use of the park's wilderness area and ensure that wilderness is unimpaired for future use and enjoyment as wilderness."

Impacts on wilderness from OSV use under the alternatives considered in this draft plan/SEIS may include impacts to the soundscape. Current BAT requirements in Yellowstone limit sound levels per snowmobile to 73 decibel (A-weighted) (dBA) or lower (NPS 2009a). Nonetheless, snowmobile and other OSV sounds can be heard at distances from snow roads. OSV noise can be audible at especially long distances on calm days with temperature inversions. These potential impacts to the recommended wilderness in the park are described in this draft plan/SEIS under the "Soundscapes and the Acoustic Environment" section. Other attributes related to wilderness that could be impacted are also discussed under other sections of this draft plan/SEIS such as "Visitor Use, Experience, and Accessibility" and "Air Quality." Winter use would not impact recommended wilderness areas in other ways because it would occur on established paved roads outside of any recommended wilderness. Therefore, potential impacts on wilderness (as a standalone impact topic) from the alternatives under consideration in this plan are not analyzed in further detail.

Wild and Scenic Rivers

The Wild and Scenic Rivers Act was passed in October of 1968 (Public Law 90-542, as amended 16 USC 1271-1287). The goal of the wild and scenic river designation is to preserve the character of the river. Developments that do not damage the resources of a designated river or curtail its free flow are usually allowed. Yellowstone has one designated wild and scenic river, the Snake River Headwaters, which includes portions of both the Lewis and Snake rivers (National Wild and Scenic Rivers System 2010). However, the implementation of a winter use plan, including OSV use, would not have an effect on the rivers because OSV use under the alternatives considered in this draft plan/SEIS would be confined to a paved, main park entrance road that parallels a portion of the scenic Lewis River. As discussed above, ongoing monitoring has found that pollutants in the melting snowpack are not impacting the water quality in these rivers. Therefore, potential impacts on wild and scenic rivers from the alternatives under consideration in this plan are not analyzed in further detail.

IMPORTANT SCIENTIFIC, ARCHEOLOGICAL, AND OTHER CULTURAL RESOURCES, INCLUDING HISTORIC PROPERTIES LISTED OR ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Cultural Landscapes

The NPS defines cultural landscapes as geographic areas associated with historic events, activities, or people that reflect that park's history, development patterns, and the relationship between people and the park. Cultural landscapes at the park include Fort Yellowstone, the area of Old Faithful, and areas significant to Native American cultures, such as sacred sites. None of the actions under consideration in this plan are expected to affect the characteristics of these areas that contribute to their designation as cultural landscapes. Therefore, potential impacts on cultural landscapes from the alternatives under consideration in this plan are not analyzed in further detail.

Prehistoric/Historic Structures and Districts

According to Director's Order 28: Cultural Resource Management, structures are defined as material assemblies that extend the limits of human capability. In plain language, this means a constructed work, usually immovable by nature or design, consciously created to serve some human activity. Examples are buildings, monuments, dams, roads, railroad tracks, canals, millraces, bridges, tunnels, locomotives, nautical vessels, stockades, forts and associated earthworks, Indian mounds, ruins, fences, and outdoor sculptures. In Yellowstone National Park, 17 sites are listed on the National Register of Historic Places. While some of these sites may be near winter use activities, these activities would remain on established routes that would not impact the integrity of these structures. Therefore, potential impacts on prehistoric/historic structures and districts from the alternatives under consideration in this plan are not analyzed in further detail.

Ethnographic Resources

An ethnographic resource is a resource under NPS stewardship that is of cultural significance to peoples traditionally associated with it. In other words, the resource is "closely linked [the peoples'] own sense of purpose, existence as a community, and development as ethnically [and occupationally] distinctive peoples." In 2000, researchers identified approximately 300 ethnographic resources and 26 tribes associated with the park (NPS 2005a). The resources include animals, plants, geology, and archeological sites. As part of government-to-government relationships, consultation with affiliated tribes has occurred and will occur on winter use and other planning and management topics. Through this past consultation it

was determined that any potential impacts to these resources would be addressed under other impact topics in this document, such as wildlife and wildlife habitat. Furthermore, the majority of these resources are not in the areas where winter use activities considered in this plan would occur and would not be disturbed; therefore, potential impacts on ethnographic resources from the alternatives under consideration in this plan are not analyzed in further detail.

POSSIBLE CONFLICTS BETWEEN THE PROPOSED ACTION AND LAND USE PLANS, POLICIES, OR CONTROLS FOR THE AREA (INCLUDING LOCAL, STATE, OR INDIAN TRIBE)

As noted earlier in this chapter, Yellowstone has engaged in extensive consultation with federal, state, and local agencies, as well as tribal interests, throughout the history of winter use planning. Part of consultation is the inclusion of cooperating agencies for this draft plan/SEIS. As further explained in the "Consultation and Coordination" chapter, in January 2010 the NPS sent invitations to federal and state agencies involved in past winter use planning efforts, inviting them to become cooperating agencies for this winter use planning process. The following entities were invited to be cooperating agencies for this effort: the USFWS; U.S. Environmental Protection Agency (EPA); State of Idaho; State of Montana; State of Wyoming; Fremont County, Idaho; Gallatin County, Montana; Park County, Montana; Park County, Wyoming; and Teton County, Wyoming. The U.S. Forest Service (USFS) and USFWS declined the invitation to be cooperating agencies, but the other agencies invited signed Memorandums of Understanding to become cooperating agencies for this effort. In addition, each of these agencies was asked to provide information relevant to this planning process, including any conflicts with their planning efforts, and during this process no conflicts were identified. At the start of the SEIS process in January 2012, these same agencies were invited to be cooperating agencies for the SEIS process. Similar to the 2011 EIS process, all agencies invited, except the USFS and USFWS, agreed to become cooperating agencies for this effort.

This consultation has ensured that the plans and policies of these organizations are taken into account during the planning process, and therefore would have no measurable effect on the land use plans, policies, or controls of local or state agencies or Indian tribes from the alternatives considered in this draft plan/SEIS. Therefore, potential impacts on the land use plans, policies, or controls of local or state agencies or Indian tribes from the alternatives under consideration in this plan are not analyzed in further detail.

ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Pursuant to NPS *Management Policies 2006* (NPS 2006a), "The National Park Service will conduct its activities in ways that use energy wisely and economically. Park resources and values will not be degraded to provide energy for NPS purposes. The Service will adhere to all federal policies governing energy and water efficiency, renewable resources, use of alternative fuels, and federal fleet goals as established in the Energy Policy Act of 1992." This draft plan/SEIS considers the issue of energy resources and sustainability in chapters 3 and 4 under the "Park Operations and Management" section; therefore, the impacts of such issues were not carried forward as a separate impact topic.

NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL

Although climatologists are unsure about the long-term results of global climate change, it is clear that the planet is experiencing a warming trend that affects ocean currents, sea levels, polar sea ice, and global weather patterns. These changes will likely affect winter precipitation patterns and amounts in the park;

however, it would be speculative to predict localized changes in snow water equivalency or average winter temperatures, in part because many variables are not fully understood and there may be variables not currently defined. Therefore, the analysis in this document is based on past and current weather patterns and the effects of future climate changes are not discussed further.

Yellowstone is actively involved in environmental stewardship, particularly in the last decade, with the implementation of initiatives such as the Greening of Yellowstone. The greening initiative includes recycling, waste reduction, energy reduction, building a compost facility for park waste, Leadership in Energy and Environmental Design building certification, and the use of hybrid vehicles and bio-fuels in summer and winter. The park continues its advances in environmental education and action, including steps to reduce human activities that contribute to climate change. In addition, the park has investigated historic snowpack trends to explore the role of winter use in climate change and conservation potential by tracking both snowmelt as well as temperatures throughout the winter season (Farnes and Hansen 2005).

OSV use at the park would result in fossil fuel consumption and release of greenhouse gas (GHG) emissions. The NPS, USFS, and USFWS have inventoried the amount of GHG emissions they produce in the greater Yellowstone area ecosystem. The inventory at the park revealed the following:

- Electricity use is responsible for more than 60 percent of the GHG emissions because of the emissions created in producing the electricity (coal mines, power plants, etc.).
- Heating and cooling park buildings contributes 27 percent of the GHG emissions.
- Cars, trucks, heavy equipment, and other vehicles directly emit almost 13 percent of the GHGs at Yellowstone.

As a result of completing the comprehensive GHG emissions inventory, the agencies are developing an action plan to reduce GHG emissions in all their operations across the entire ecosystem (NPS 2010c).

Based on this inventory, mobile sources contribute the smallest amount of GHG emissions in the area, with winter use occurring at such a low volume that it is responsible for only a small proportion of the 13 percent. In addition, all alternatives considered in this draft plan/SEIS require BAT for all OSVs, which would also contribute to keeping GHG emissions a small overall contributor. Based on the BAT requirement, GHG emissions associated with this draft plan/SEIS would be expected to be negligible in comparison to local, regional, and national GHG emissions. Therefore, the impacts on climate change through GHG emissions from OSV management and use activities under the alternatives considered were dismissed from further analysis.

INDIAN TRUST RESOURCES AND SACRED SITES

Indian trust resources are land, water, minerals, timber, or other natural resources held in trust by the United States for the benefit of an Indian tribe or individual tribal member. In government-to-government consultations with Native American tribes on planning and management issues, including winter use, a variety of park resources have been identified as being significant to many tribes. None of the alternatives evaluated in this draft plan/SEIS, with their prescribed mitigation measures, would create adverse effects on sacred sites or Indian trust resources. Scoping for this draft plan/SEIS did not identify any new issues relative to these resources. The NPS has consulted and will continue to consult with tribes on winter use and other planning and management topics and will continue to manage the park for the benefit of all citizens of the United States. Therefore, potential impacts on Indian trust resources and sacred sites from the alternatives under consideration in this plan are not analyzed in further detail.

RELATED LAWS, POLICIES, PLANS, AND CONSTRAINTS

GUIDING LAWS AND POLICIES

Laws and policies, as well as plans by the NPS, state governments, or agencies with neighboring land or relevant management authority, are described in this section to show the framework and constraints under which this draft plan/SEIS will need to operate and the goals and policies that will be considered. These related laws, policies, plans, and constraints will guide the development and implementation of this winter use plan.

NPS Organic Act and General Authorities Act

By enacting the NPS Organic Act of 1916, Congress directed the U.S. Department of the Interior and the NPS to manage units of the national park system "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (16 USC 1).

In the administration of authorized uses, park managers have the discretionary authority to allow and manage the use, provided that the use will not cause impairment or unacceptable impacts.

The National Park Service General Authorities Act of 1970 supplemented the Organic Act, providing (as codified at 16 USC 1a-1):

> Congress declares that the National Park Service, which began with establishment of Yellowstone National Park in 1872, has since grown to include superlative natural, historic, and recreation areas in every major region of the United States, its territories and island possessions; that these areas, though distinct in character, are united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage; that, individually and collectively, these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States; and that it is the purpose of this Act to include all such areas in the System and to clarify the authorities applicable to the system.

Congress thus required the entire national park system to be managed as a whole, and not as constituent parts.

The 1978 Redwood Amendment reiterates these mandates by stating that the NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress" (16 USC 1a-1). Congress intended the language of the 1978 Amendment (which was included in language expanding Redwood National Park) to reiterate the provisions of the Organic Act, not to create a substantively different management standard. The House committee report described the 1978 Amendment as a "declaration by Congress" that the promotion and regulation of the national park system is to be consistent with the Organic Act (NPS 2006a). The Senate committee report stated that under the 1978 Amendment, "The Secretary has an absolute duty, which is not to be compromised, to fulfill the mandate of the 1916 Organic Act to take whatever actions and seek whatever relief as will safeguard the units of the national park system" (NPS 2006a). Although the Organic Act and the 1978 Amendment use different wording ("unimpaired" and "derogation") to describe what the NPS must avoid, both acts define

a single standard for the management of the national park system—not two different standards. For simplicity, NPS *Management Policies 2006* uses "impairment," not both statutory phrases, to refer to that single standard.

Despite these mandates, the Organic Act and its amendments afford the NPS latitude when making resource decisions to allow appropriate visitor use while preserving resources. Because conservation remains predominant, the NPS seeks to avoid or to minimize adverse impacts on park resources and values. The NPS does, however, have discretion to allow negative impacts when necessary (NPS 2006a Section 1.4.3, 10). Although some actions and activities cause impacts, the NPS cannot allow an adverse impact that impairs resources or values (NPS 2006a Section 1.4.3, 10). In the administration of authorized uses, park managers have the discretionary authority to allow and manage uses, provided that the uses will not cause impairment or unacceptable impacts. The Organic Act and 1978 Amendment prohibit actions that impair park resources unless a law directly and specifically allows for the action (16 USC 1a-1) (NPS *Management Policies 2006*, Section 1.4.3.1).

Pursuant to the *NPS Guidance for Non-Impairment Determinations and the NPS NEPA Process*, a non-impairment determination for the selected alternative will be appended to the ROD.

Yellowstone National Park Organic Act

Congress established Yellowstone National Park to "dedicate and set apart as a public park or pleasuring-ground for the benefit and enjoyment of the people" and "for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition" (16 USC 21, 22). The Yellowstone National Park Organic Act, signed March 1, 1872, established the park and set forth its mission. The NPS Organic Act (1916), which came after the Yellowstone National Park Organic Act, built in part upon that landmark law to form the NPS.

National Parks Omnibus Management Act of 1998

The National Parks Omnibus Management Act of 1998 (16 USC 5931 et seq.) provides direction for considering and utilizing appropriate technical and scientific information in park management decisions.

NPS Management Policies 2006

NPS *Management Policies 2006* address management of snowmobiles in Section 8.2.3.2, Snowmobiles. This section states (NPS 2006a):

> Snowmobile use is a form of off-road vehicle use governed by Executive Order 11644 (Use of Off-road Vehicles on Public Lands, as amended by Executive Order 11989), and in Alaska also by provisions of the Alaska National Interest Lands Conservation Act (16 USC 3121 and 3170). Implementing regulations are published at 36 CFR 2.18, 36 CFR Part 13, and 43 CFR Part 36. Outside Alaska, routes and areas may be designated for snowmobile and oversnow vehicle use only by special regulation after it has first been determined through park planning to be an appropriate use that will meet the requirements of 36 CFR 2.18 and not otherwise result in unacceptable impacts. Such designations can occur only on routes and water surfaces that are used by motor vehicles or motorboats during other seasons. In Alaska, the Alaska National Interest Lands Conservation Act provides additional authorities and requirements governing snowmobile use.

> NPS administrative use of snowmobiles will be limited to what is necessary (1) to manage public use of snowmobile or oversnow vehicles routes and areas; (2) to conduct emergency operations; and (3) to accomplish essential maintenance, construction, and resource protection activities that cannot be accomplished reasonably by other means.

Management policies relating to resource protection also were considered in developing this draft plan/SEIS. For example, NPS *Management Policies 2006* instructs park units to maintain, as parts of the natural ecosystems of parks, all plants and animals native to the park ecosystems, in part by "minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes that sustain them" (NPS 2006a, Section 4.4.1).

Architectural Barriers Act of 1968

The Architectural Barriers Act requires access for the public to facilities designed, built, altered, or leased with federal funds. The Access Board, created under this act, develops and maintains accessibility guidelines under this law. These guidelines serve as the basis for the standards used to enforce the law. Following this act, other acts to promote accessibility were enacted and include the Americans with Disabilities Act of 1990 (ADA) (which was updated in 2010, with an effective date for implementation of March 15, 2012), the Rehabilitation Act of 1973, the Uniform Federal Accessibility Standards of 1984, and the Guidelines for Outdoor Developed Areas of 1999.

National Environmental Policy Act Regulations and Procedures

NEPA is implemented through regulations of the CEQ (40 CFR 1500–1508). The NPS has in turn adopted procedures to comply with NEPA and the CEQ regulations, including the Department of the Interior NEPA Regulations (43 CFR 46), and Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making (NPS 2011b), and its accompanying handbook (NPS 2001).

NPS Director's Order 77: Natural Resource Protection

Director's Order 77 addresses natural resource protection, with specific guidance provided in Reference Manual 77: Natural Resource Management. Reference Manual 77 (NPS 2011c) offers comprehensive guidance to NPS employees responsible for managing, conserving, and protecting the natural resources found in national park system units. The manual serves as the primary guidance on natural resource management in units of the national park system. Reference Manual chapters that are particularly relevant to this draft plan/SEIS include endangered, threatened, and rare species management, native animal management, and air resources management.

Wilderness Act of 1964 and Director's Order 41: Wilderness Preservation and Management (1999)

Under the Wilderness Act of 1964, (Section 4(b)) "Except as otherwise provided in this act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use." By policy, any action taken by the park, such as allowing for winter use, must comply with this act.

In addition, the park must apply the "minimum requirement" concept to all management activities that affect the wilderness resource. This concept is intended to minimize impacts on wilderness values and

resources. Managers may authorize (using a documented process) the generally prohibited activities or uses listed in Section 4(c) of the Wilderness Act if deemed necessary to meet the minimum requirements for the administration of the area as wilderness and where those methods are determined to be the "minimum tool" for the project.

The purpose of Director's Order 41 is to provide accountability, consistency, and continuity to the NPS wilderness stewardship program, and to otherwise guide servicewide efforts in meeting the letter and spirit of the 1964 Wilderness Act.

Endangered Species Act of 1973

The ESA provides for the conservation of ecosystems on which threatened and endangered species of fish, wildlife, and plants depend. Section 7 requires all federal agencies to consult with the Secretary of the Interior on all projects and proposals with the potential to impact federally endangered or threatened plants and animals. It also requires federal agencies to use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species. Federal agencies are also responsible for ensuring that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. Section 9 of the act makes it unlawful for a person to "take" a listed animal without a permit. The term "take" is defined in the act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." Through regulations, the term "harm" is defined as "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." Listed plants are not protected from take; however, it is illegal to collect or maliciously harm them on federal land. The act also imposes civil and criminal penalties for violations of any provisions of the act.

Migratory Bird Treaty Act of 1918 and Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds

Migratory birds are of great ecological and economic value to this country and to other countries. They contribute to biological diversity and bring tremendous enjoyment to millions of people who study, watch, feed, or hunt these birds throughout the United States and other countries. The United States has recognized the critical importance of this shared resource by ratifying international, bilateral conventions for the conservation of migratory birds. These migratory bird conventions impose substantive obligations on the United States for the conservation of migratory birds and their habitats, and through the Migratory Bird Treaty Act (MBTA), the United States has implemented these migratory bird conventions with respect to the United States. Executive Order 13186 directs executive departments and agencies to take certain actions to further implement the MBTA. The MBTA implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under this act, it is prohibited, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention…for the protection of migratory birds…or any part, nest, or egg of any such bird" (16 USC 703). Subject to limitations in the act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits, and migratory flight

patterns. Pursuant to Executive Order 13186, 66 Fed. Reg. 3853 (January 2001), entitled "Responsibilities of Federal Agencies to Protect Migratory Birds," the NPS and USFWS further signed a Memorandum of Understanding in April 2010 that outlines a collaborative and proactive approach to promote the conservation of migratory birds (http://www.nature.nps.gov/biology/migratoryspecies/Documents/MBMOUNPSSigned041210.pdf).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668-668d) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle … [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations"

The NPS must address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities, including planning projects, on minority populations and low-income populations.

Related Plans, Policies and Actions for Yellowstone National Park

Yellowstone National Park Master Plan (1974)

The Yellowstone National Park Master Plan addresses winter use by stating, "Yellowstone will be managed on a year-round use basis. There are two defined periods of heavy use, and the management and operation must be geared to such for maximum enjoyment of the resources by the visitor – May 1 through October 31 (summer) and December 1 through March 15 (winter)." It is also recognized that OSVs have been in use at the park since 1949 and that snowmobiles have been used for 45 of the park's 136 years. In addition, there can be spatially long distances between park attractions. As one of the park's planning documents that directs future use in the park, including winter use, this document was considered in the development of this plan/SEIS.

Yellowstone National Park Long-Range Interpretive Plan (2000)

The 2000 Long-Range Interpretive Plan (NPS 2000a) provides recommendations on programs, technologies, and methods to achieve goals for keeping the park meaningful, valued, and relevant to a diverse visitor population over the next 7 to 10 years. The plan discussed OSV issues at the time the plan was drafted (2000) referring to the 2000 Final Winter Use Plan for further information. Because other planning processes have occurred since this time, recommendations on winter use in the long-range interpretive plan may not be applicable to winter use management today. As one of the park's planning documents that directs future use in the park, including winter use, this document was considered in the development of this plan/SEIS.

Yellowstone National Park Strategic Plan

The Yellowstone National Park Strategic Plan (NPS 2005b) reexamined the park's fundamental mission (from the park's 1974 Master Plan) with a new long-term view of the results or outcomes needed to more effectively and efficiently accomplish the park's mission. The plan noted that of the 466 miles of road,

approximately 184 are groomed for OSV use during the winter. As one of the park's planning documents that directs future use in the park, including winter use, this document was considered in the development of this plan/SEIS.

Construction Projects throughout the Park

Numerous past, ongoing, and planned construction projects have occurred or are occurring throughout the park. These projects have added to or changed the infrastructure in the park during the winter season, impacting both how the park operates and how visitors experience the park during this time. Projects include the following:

- Reconstruction of the East Entrance Road at Sylvan Pass, Yellowstone National Park. This project was completed in 2010 to reconstruct the segment of road at the pass to park road standards. This project also generally moved the road away from avalanche paths and away from the staff's route to the gun mount, which improved safety for avalanche control operations.
- Construction of west entrance, Yellowstone National Park. In 2008, Yellowstone completed a new west entrance immediately east of the existing facility. The west entrance facility could affect employee and visitor health and safety due to the inclusion of ventilation systems in the booths that reduce staff exposure to air pollutants.

Past, present, and future construction projects in the park have the potential to impact wildlife and wildlife habitat, soundscapes, visitor use, experience, and accessibility, and park operations, and therefore were considered in this plan/SEIS.

Implementation of the Interagency Bison Management Plan

Since the mid-1980s, increasing numbers of bison have moved to low-elevation winter ranges outside the northern and western parts of Yellowstone in response to accumulating snow pack. Such bison movement led to an enduring series of societal conflicts among various public and management entities regarding bison abundance and the potential transmission of brucellosis to domestic cattle with widespread economic repercussions. As a result, the federal government and the state of Montana agreed to an Interagency Bison Management Plan (IBMP) that established guidelines for managing the risk of brucellosis transmission from bison to cattle by implementing hazing, testing for disease exposure, shipments of bison to domestic slaughter facilities, hunting (outside Yellowstone National Park), vaccination, and other actions near the park boundary. This plan also identified the need to conserve bison and established conservation zones encompassing more than 250,000 acres of the northern two-thirds of the park and portions of the adjacent Gallatin National Forest (IBMP 2010).

The ROD for the IBMP was signed in December 2000 to coordinate bison management between the State of Montana and Yellowstone National Park. Five agencies signed or adopted this agreement to work cooperatively within an adaptive management framework to implement the IBMP—the U.S. Department of Agriculture's Animal and Plant Health Inspection Service and USFS; the Department of the Interior's NPS; and the State of Montana's Department of Fish, Wildlife, and Parks and Department of Livestock. The Confederated Salish and Kootenai Tribes, InterTribal Buffalo Council, and Nez Perce Tribe became IBMP agencies in 2009. The plan seeks to maintain a wild, free-ranging bison population, reduce the risk of brucellosis transmission from bison to cattle, manage bison that leave the park and enter the state of Montana, and maintain Montana's brucellosis-free status for domestic livestock. Public scoping raised concerns that OSV traffic and the subsequent grooming of roads would have the possibility of increasing bison movement inside and outside the park, which would trigger bison management under the IBMP. As further described in the "Wildlife and Wildlife Habitat" section in chapter 3, recent publications assert that road grooming is less important to bison population dynamics than other natural factors (Gates et al.

2005; Bruggeman et al. 2009b). These scientists found no correlation between the presence of groomed trails and increased bison movements, and did not find sufficient evidence that groomed roads provided an energy-efficient travel corridor (Cheville et al. 1998; Wagner 2006). Because bison is a species that was carried forward for detailed analysis, any plans or policies that address how this species is managed in the region were considered in this plan/SEIS.

Remote Vaccine Plan for Bison

The NPS is considering the remote delivery of a vaccine to free-ranging bison in the park for the contagious disease brucellosis, which is caused by the non-native bacteria *Brucella abortus*. Remote delivery is distinguished from hand (syringe) delivery that currently occurs in capture pens near the park boundary because it would not involve the capture and handling of bison. The most logical strategy for remote delivery of vaccine at this time is using a compressed air-powered rifle that delivers an absorbable bullet with a vaccine payload that is freeze dried or photo-polymerized. The purpose for taking action is directed by a 2000 ROD for the IBMP regarding the release of bison outside the park that are untested for exposure to brucellosis. The goal of a remote delivery vaccination program would be to deliver a low risk, effective vaccine to eligible bison inside the park to (1) decrease the probability of individual bison shedding Brucella abortus, (2) lower the brucellosis infection rate of Yellowstone bison, and (3) reduce the risk of transmission to cattle outside the park. Public scoping raised concerns that bison would leave the park as a result of winter use and be removed due to concerns of brucellosis. Because bison is a species that was carried forward for detailed analysis, any plans or policies that address how this species is managed in the region were considered in this plan/SEIS.

OTHER FEDERAL AGENCY PLANS, POLICIES, AND ACTIONS

In addition to the laws and policies above, other federal planning documents exist that directly or indirectly relate to winter use at the park, and were taken into consideration during the development of this draft plan/SEIS.

The Northern Rockies Lynx Management Direction Final Environmental Impact Statement and Amendments

The Northern Rockies Lynx Management Direction Final EIS and Amendments were developed to conserve the Northern Rockies lynx (*Lynx canadensis*) species, listed as threatened on the endangered species list. The amendments would keep recreation at or near current levels in occupied lynx habitats on USFS lands to ensure species survival. Lynx thrive in areas with deep soft snow, where predators are excluded during the winter months; however, the use of OSVs can cause the snow to become more compacted leaving the area more accessible to predators and other competition to occupy the area. Regulating where OSV use can occur on other federally managed lands in the region would impact both recreational opportunities in the area (visitor use, experience, and accessibility) and habitat available for the lynx (wildlife and wildlife habitat). Because lynx is a species that was carried forward for detailed analysis, any plans or policies that address how this species is managed in the region were considered in this plan/SEIS.

Gallatin National Forest Travel Plan Revision

The Gallatin National Forest Travel Plan provides a comprehensive evaluation of how best to provide for road and recreational demands in conjunction with other resource uses and land stewardship needs. The plan examines 39 different wilderness areas in the Gallatin National Forest and the suitability of these areas for travel. The plan reduced the number of areas where OSV use is approved in the Gallatin National Forest (from about 84 percent of the national forest to about 53 percent) but increased the

miles of marked and groomed trail, potentially affecting the availability of winter use recreation opportunities in the region, specifically OSV opportunities. The availability of recreation opportunities on surrounding lands, including the Gallatin National Forest, was considered in this plan/SEIS when analyzing visitor use, experience, and accessibility.

Consolidation of Checkerboard Lands in the Gallatin National Forest

In the last 10 years, the Gallatin National Forest has negotiated several land exchanges that have consolidated some previously checkerboarded holdings. Although this has generally positive effects for most wildlife (because consolidated lands are less subject to development), it has the negative side effect of private land consolidation (especially in the Big Sky area), which has allowed more land subdivision and rural growth, with consequent effects on wildlife, air quality, socioeconomics, and visitor access and circulation. The availability of wildlife habitat on surrounding lands, including management of the Gallatin National Forest, was considered in this plan/SEIS when analyzing wildlife and wildlife habitat.

Gardiner Basin and Cutler Meadows Restoration

National Park, Gallatin National Forest, and the Center for Invasive Plant Management at Montana State University are working together to restore federally owned sites in Gardiner Basin and Cutler Meadows. The sites were once tilled for agriculture, and those tilled areas now support several invasive non-native species and fewer native plants than desired. The USFS and NPS are implementing long-term projects to restore native plants to these areas. These projects could affect wildlife, such as elk, bison, and pronghorn that use the Gardiner Basin for habitat and therefore were considered in this plan/SEIS.

Beartooth District of Custer National Forest Travel Management Plan

The Beartooth District of Custer National Forest Travel Management Plan was completed in 2008. The plan identifies a system of roads and trails to be used by public motorized traffic. The plan limits motorized travel to certain roads and trails, and includes restrictions on winter use. This plan allows for snowmobile use throughout the Beartooth District, except in wilderness, research natural areas, and recommended wilderness areas. The extent and availability of snowmobile recreation has the potential to impact visitor use, experience, and accessibility in the region and in the park, as well as available habitat for wildlife and therefore was considered in this plan/SEIS.

EPA Regulations and Improving OSV Technologies

In 2002, the EPA promulgated nationwide regulations for snowmobile emissions. Those regulations are being implemented in three phases: model years 2006, 2010, and 2012. The current NPS BAT requirements are more stringent than the 2012 EPA regulations. These EPA regulations are helping spur the development of improved snowmobile technology and reduced emissions nationwide. Similarly, EPA wheeled vehicle emission regulations are being implemented for light-heavy to medium-heavy duty trucks. Many snowcoaches are based on these vehicle classes. Although emission characteristics of a vehicle in a tracked, oversnow mode are not comparable to its performance on wheels, these technological changes should also result in lower emissions for snowcoaches. Changes in technologies impact the soundscape and air quality within the park, and therefore were considered in this plan/SEIS.

OTHER STATE AND LOCAL PLANNING DOCUMENTS, POLICIES, ACTIONS

A Toolkit to Protect the Integrity of Greater Yellowstone Area Landscapes

The land area surrounding the park has experienced rapid population growth for the last 20 years. Such growth can lead to more demand for recreation (snowmobiling, cross-country skiing, and snowshoeing), more recreationists in wildlife habitat, and more resulting impacts on air quality, soundscapes, economics, and wildlife. In addition, where and how development occurs is important. To respond to population growth, the Greater Yellowstone Coordinating Committee developed "A Toolkit to Protect the Integrity of Greater Yellowstone Area Landscapes" in 2008 to provide information to agency staff on voluntary options. This toolkit comprises nine topics, all of which work to help restore the natural Yellowstone landscape. These nine topics include the current land status in the greater Yellowstone area, general discussion of land adjustment tools, guidance for public agency participation in local land use, case studies of successful regional conservation efforts, greater Yellowstone area land trusts and conservation partners, conservation buyers in the greater Yellowstone area, sources of funding for land acquisition and easements, sources for land stewardship without land or easement purchase, and key strategies and research data. This toolkit is considered in this plan/SEIS because the measures suggested by the toolkit as a result of population growth have the potential to impact land use and recreational activities in the greater Yellowstone area.

Reclamation of Historic Mines above Cooke City

This ongoing project will reclaim 10–20 mines in more than 1,500 acres in the New World Mining District, which is adjacent to the park. Specific projects include reclaiming high-elevation mining waste dumps and improving water quality at the headwaters of the Yellowstone and Stillwater rivers. A 10-year cleanup program reclaimed a dozen mines and waste dumps, and improved water quality in Fisher, Miller, Daisy, and Soda Butte creeks (GYC 2010). Reclamation of this area has protected the headwaters and the species that rely on the headwaters, such as trumpeter swans, and provided additional habitat and recreational opportunities in the area. Reclamation on surrounding lands impacts the amount of wildlife habitat available in the area, and therefore was considered in this plan/SEIS.

Reclamation of McLaren Mine Tailings Site

The McLaren Mine Tailings Site is near Cooke City, Montana, in a valley drained by Soda Butte Creek, which runs through the site and eventually through Yellowstone, approximately 5 miles downstream. Environmental studies conducted over the past 30 years have determined that the McLaren Mine Tailings Site is a significant source of acid mine drainage contributing to the poor water quality of Soda Butte Creek (MTDEQ 2010b). The project involves stabilization and dehydration of approximately 320,000 tons of mine tailings and upon completing stabilization and removal activities, reclaiming the site. Site reclamation work began in June 2010 and includes active tailings dewatering, operation of a water treatment system, lime stabilization of mine wastes, and the construction of an on-site repository (MTDEQ 2010b). Once reclaimed, the site will provide for additional wildlife habitat in the area year-round and improve the water quality in Soda Butte Creek, which is used by wildlife, affecting the overall amount of habitat in the region available for wildlife and therefore was considered in this plan/SEIS.

Rendezvous Ski Trail Development Plan

The Rendezvous Ski Trails are located in the town of West Yellowstone, Montana. These trails consist of more than 35 kilometers (approximately 22 miles) of groomed trails located entirely on USFS land. The Rendezvous Ski Trails are managed through a cooperative partnership between the USFS, the West Yellowstone Chamber of Commerce and the West Yellowstone Ski Education Foundation. The USFS

and trail managers are revising their trail plan, which would develop, improve, abandon, and/or maintain the cross-country ski trails there. This could affect socioeconomics and visitor access and circulation. Once implemented, this plan would contribute additional non-motorized winter use activities near the west entrance. The availability of recreation on surrounding lands, including the Rendezvous Ski Trails, was considered in this plan/SEIS when analyzing visitor use, experience, and accessibility.

Reopening of the Sleeping Giant Ski Area

This ski area is approximately 3 miles from Yellowstone and in immediate proximity to the east entrance. The ski area was originally opened as the Red Star Camp for the 1936/1937 ski season and is one of the oldest ski areas in the United States. In 1938, it was renamed the Sleeping Giant Ski Area. It was closed in 2004 because of financial difficulties when inspectors determined that the T-bar lift was unsafe and funds were not available to repair it. In 2007, Sleeping Giant Ski Area was purchased by a handful of Cody, Wyoming, residents and improvements were made, including the installation of a new chairlift. The ski area reopened during the 2009/2010 winter season (ColoradoSkiHistory.com 2010 and Sleeping Giant Ski Area 2010). The reopening and continued operation of this ski area contributes to the winter recreational opportunities in the area during the winter use season. The availability of recreation on surrounding lands, including the Sleeping Giant Ski area, was considered in this plan/SEIS when analyzing visitor use, experience, and accessibility.

Oil and Gas Leasing

Oil or gas leasing activities take place in numerous areas relatively close to the park. The Montana Department of Natural Resources and Conservation, Trust Land Management Division, Mineral Management Bureau maintains information of oil and gas leasing activity in Montana. The Fiscal Year 2010 Annual Report released by this agency reported no oil or gas production in those counties bordering the park (Gallatin and Park counties). Sweet Grass, Stillwater, and Carbon counties—all northeast of Park County, which is adjacent to Yellowstone—reported the production of approximately 851 barrels of oil and 6,716 MCFs (or 1,000 cubic feet) of gas in 2010 (State of Montana, Department of Natural Resources and Conservation, Trust Management Division 2010). In Wyoming, gas and some oil production occurs in the Over Thrust Belt Basin in Sublette, Lincoln, and Sweetwater counties. These counties are south of Teton County, well south of the park. The Bighorn Basin, east of the park, is in eastern Park County and in Hot Springs, Washakie, and Big Horn counties. In 2009, oil production in Park County totaled approximately 7.45 million barrels of oil and 11.17 million MCFs of gas (Wyoming Oil and Gas Conservation 2009). Other areas of high oil or gas leasing activities are located further east and southeast of the park. The State of Idaho, Department of Lands, reports that there are currently no producing wells or recorded production of oil or gas (State of Idaho, Department of Lands 2010). Oil and gas leasing operations in the area operate year-round and facility operations would result in impacts to regional air quality and socioeconomics. Oil and gas operations on surrounding lands contribute to the air quality of the region and therefore were considered in this plan/SEIS.

Aircraft Overflights

Aircraft overflights (including commercial jets, research flights of low flying propeller planes, corporate and general aviation aircraft, and medical rescue helicopters) cause motorized sounds audible at levels from very quiet to levels that mask other sounds. Relative to snowmobile and snowcoach-related sounds, the duration of audible aircraft overflights is short. The 2005–2010 observational study found that in total, motorized sounds were audible 56 percent of the time. Aircraft accounted for 6.7 percent of the duration of motorized sounds (Burson 2010a). These overflights could affect soundscapes in the park, as well as in the region, during the winter use season. At Fern Lake in Yellowstone's backcountry (a location 8 miles from the road where no OSVs were audible), aircraft were audible 6 percent of the time between 8:00

a.m. and 4:00 p.m. during the winter use period (Burson 2007). Aircraft overflights contribute to the overall impacts to soundscapes in the area, and therefore were considered in the development of this plan/SEIS.

CHAPTER 2

Alternatives

CHAPTER 2: ALTERNATIVES

The National Environmental Policy Act (NEPA) requires federal agencies to fully evaluate and consider a range of reasonable alternatives that address the purpose of and need for action. Alternatives under consideration must include a "no-action" alternative in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14). Action alternatives may originate from the proponent agency, local government officials, or members of the public at public meetings or during the early stages of project development. Alternatives may also be developed in response to comments from coordinating or cooperating agencies.

Alternatives analyzed in this document were developed based on the results of internal and public scoping for both the 2011 Winter Use Plan/EIS and this Draft Winter Use Plan / Supplemental Environmental Impact Statement (draft plan/SEIS) process, and information from the Yellowstone Science Advisory Team (SAT), resource workshops, and cooperating agencies, as well as past planning efforts. The alternatives carried forward for detailed analysis meet, to a large degree, the management objectives of the park, while also meeting the overall purpose and need. Alternatives and actions that were considered but are not technically or economically feasible, do not meet the purpose of and need for the project, create unnecessary or excessive adverse impacts to resources, and/or conflict with the overall management of the park or its resources were dismissed from further analysis. These alternatives or alternative elements, including ones that were considered in the 2011 Winter Use Plan/EIS, and their reasons for dismissal, are discussed at the end of this chapter.

The National Park Service (NPS) explored and evaluated the following alternatives (summarized in table 8 at the end of this chapter):

- **Alternative 1: No-Action—No Snowmobile/Snowcoach Use**—As of March 15, 2012, the interim regulation that was in effect for the 2011-2012 winter season has expired. Under the no-action alternative, the park would not take any action to promulgate a new regulation, and therefore no public oversnow vehicle (OSV) use would be permitted in Yellowstone. Non-motorized access and wheeled vehicle access (northern road) into the park would continue to be permitted. The east entrance (Sylvan Pass) would be closed during the winter season.
- **Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits**—Under alternative 2, snowmobile and snowcoach use would be allowed to continue at levels allowed under the interim regulations in effect from 2009 to 2012: up to 318 snowmobiles and 78 snowcoaches per day. All OSV requirements under the 2011/2012 interim regulation would continue, including commercial guide requirements, hours of operation restrictions, and best available technology (BAT) requirements for snowmobiles. BAT requirements would be implemented for snowcoaches by the 2017/2018 season, as described in the "Elements Common to All Action Alternatives" section.
- **Alternative 3: Transition to BAT Snowcoaches**—Under alternative 3, OSV access to the park over the long term would be via BAT snowcoach. Alternative 3 would initially provide for both snowmobile and snowcoach access under interim regulation levels of up to 318 snowmobiles and 78 snowcoaches per day until the 2017/2018 winter season. In 2017/2018, all snowcoaches would need to meet BAT requirements (see appendix A). Beginning in 2017/2018, snowmobiles would begin being phased out and snowcoaches would completely replace snowmobiles within a 3-year period (by the 2020/2021 winter season) after the phaseout begins. The east entrance (Sylvan Pass) would be closed to OSV use during the winter season from the east entrance to the Fishing Bridge Developed Area once the phaseout is complete.

- **Alternative 4: Manage OSV Use by Transportation Events**—Under alternative 4, the park would manage OSV use by setting a maximum number of daily transportation events into the park. A transportation event is defined as one snowcoach or a group of seven snowmobiles (on average) travelling together within the park, and is based on evidence that both types of transportation events have comparable impacts to park resources and the visitor experience. The park would permit up to 110 transportation events daily, of which up to 50 daily transportation events may be groups of snowmobiles. Managing by OSV transportation events is an approach that considers the impact of OSV groups and would result in a cleaner and quieter park, enhance the visitor experience, and permit growth in visitation all while reducing impacts to park resources. This approach would facilitate greater operator flexibility, reward future OSV technological innovations, and reduce environmental impacts from OSVs, while allowing for increases in wintertime visitation. Should OSVs meet additional environmental performance standards, each transportation event size would be able to increase (up to two snowcoaches and eight snowmobiles per event) while reducing impacts to park resources. Four transportation events per day (one per gate) would be reserved for noncommercially guided access. Noncommercially guided transportation events would accommodate up to five snowmobiles per group. Each noncommercial guide would be allowed to lead up to two noncommercial groups per season, and permits for this opportunity would be allocated via an on-line lottery system (see appendix B for more information on noncommercial guiding).

DEFINITIONS

The following definitions are used when describing the range of alternatives:

- **Commercial guide**—A person who operates as a snowmobile or snowcoach guide for a fee or compensation and is authorized to operate in the park under a concession contract or a commercial use authorization.
- **Non-motorized Use**—Non-motorized uses include cross-country skiing, backcountry skiing, hiking, and snowshoeing.
- **Oversnow route**—That portion of the unplowed roadway located between the road shoulders and designated by snow poles or other poles, ropes, fencing, or signs erected to regulate oversnow activity. Pullouts or parking areas that are groomed or marked similarly to roadways and are adjacent to designated oversnow routes are also included. An oversnow route may also be distinguished by the interior boundaries of the berm created by the packing and grooming of the unplowed roadway. The only motorized vehicles permitted on oversnow routes are OSVs.
- **Oversnow vehicle or OSV**—A snowmobile, snowcoach, or other motorized vehicle that is intended for travel primarily on snow and has been authorized by the superintendent to operate in the park. An OSV that does not meet the definition of a snowcoach must comply with all requirements applicable to snowmobiles.
- **Snowcoach**—A self-propelled mass transit vehicle intended for travel on snow, having a curb weight of over 1,000 pounds (450 kilograms), driven by a track or tracks and steered by skis or tracks, having a capacity of at least 8 passengers and no more than 32 passengers, plus a driver. A snowcoach has a maximum size of 102 inches wide, plus tracks (not to exceed 110 inches overall); a maximum length of 35 feet; and a gross vehicle weight rating not exceeding 25,000 pounds. A snowcoach may not be operated if the gross vehicle weight rating of the vehicle (including track systems) is exceeded.

- **Snowmobile**—A self-propelled vehicle intended for travel solely on snow, with a curb weight of not more than 1,000 pounds (450 kg), driven by a track or tracks in contact with the snow, and which may be steered by a ski or skis in contact with the snow. All-terrain vehicles and utility-type vehicles are not snowmobiles, even if they have been modified for use on snow with track and ski systems.
- **Snowplane**—A self-propelled vehicle intended for oversnow travel and driven by an air-displacing propeller. Snowplanes are not allowed under any of the alternatives.
- **Transportation Event—**A transportation event is defined as one snowcoach or a group of, on average, seven snowmobiles travelling together within the park, and is based on evidence that both types of transportation events have comparable impacts to park resources and the visitor experience. The park would permit up to 110 transportation events daily, of which up to 50 daily transportation events may be groups of snowmobiles. Managing by OSV transportation events is an impact-centric approach that would result in a cleaner and quieter park, enhance the visitor experience, and permit growth in visitation all while reducing impacts to park resources. This approach would facilitate greater operator flexibility, reward future OSV technological innovations, and reduce environmental impacts from OSVs, while allowing for increases in wintertime visitation. Should OSVs meet additional environmental performance standards, each transportation event size will be able to grow (up to two snowcoaches and eight snowmobiles per event) while reducing impacts to park resources.
- **Noncommercially Guided Snowmobile Access Program—**A program that permits duly authorized parties to enter Yellowstone National Park without a commercial guide. Individuals would be required to have successfully completed a certification process and possess a noncommercial snowmobile access permit.
- **Noncommercially Guided Snowmobile Trip—**A trip that is led by a noncommercial guide and is not for profit. Costs are evenly shared among all participants: no trip member may be paid to participate on the trip and no trip member may pay less than other participants. This includes all logistics, food, fuel, equipment, transportation, vehicle shuttle, and other costs. Preparation and conduct of the trip must be shared by all members of the group. Noncommercially guided snowmobile trips must be self-guided and may not hire commercial guides. Noncommercially guided snowmobile trips may not be used by any person or organization in any way to obtain a profit; doing so would result in the revocation of the permit and may jeopardize future noncommercially guided access to Yellowstone National Park by the trip leader and trip members.
- **Noncommercial Snowmobile Access Permit—**A permit that allows access to Yellowstone National Park for a single group of up to five snowmobiles for a specific date range (no more than 3 days and 2 nights). These permits would be awarded to through an annual lottery system, administered through www.recreation.gov.
- **Noncommercial Snowmobile Operator—**A person who has successfully completed the Yellowstone Snowmobile Education Certification Program (explained below) and is therefore certified as having the requisite knowledge and skills to operate a snowmobile in Yellowstone National Park. Noncommercial snowmobile operators must be at least 16 years of age by the day of the trip and must be in possession of a valid motor vehicle driver's license before entering the park.
- **Noncommercial Guide—**In addition to stipulations outlined above under noncommercial snowmobile operator, a noncommercial guide must obtain and must be in possession of a noncommercial snowmobile access permit as awarded and obtained through the lottery system. Noncommercial guides are directly responsible for the actions of their group. Each

noncommercial guide may lead no more than two trips per winter season, and must be at least 18 years of age by the first day of the trip. The noncommercial guide must have a working knowledge of snowmobile safety, general first aid, snowmobile repair, and navigational technique. Noncommercial guides may not advertise for profit and may not accept a fee or any type of compensation for organizing or leading a trip. Collecting a fee (monetary compensation), payable to an individual, group, or organization for conducting, leading, or guiding a noncommercially guided snowmobile trip is not allowed.

- **Unguided Snowmobile Access**—Unguided snowmobile access is defined as a visitor or group of visitors who enter the park by snowmobile without obtaining certification through the Yellowstone Snowmobile Education Certification Program, who do not possess the necessary entrance permits, or who are not accompanied by a commercial or noncommercial guide. Unguided snowmobile access is not permitted under any of the alternatives.
- **Yellowstone Snowmobile Education Certification Program—**A to-be-developed online snowmobile education program that all noncommercial snowmobile operators must complete before entering the park via snowmobile. Individuals who successfully complete the Yellowstone Snowmobile Certification Program (details below) will receive a certificate of completion, valid for the duration of the season.

ELEMENTS COMMON TO ALL ALTERNATIVES

The following describes elements of the alternatives that are common to all alternatives, including the no-action alternative.

ADMINISTRATIVE USE

Non-recreational, administrative use of snowmobiles would be allowed for park personnel and parties duly permitted under the provisions of 36 CFR 1.6, or other applicable permit authority. Park personnel and permitted parties must use snowmobiles that meet BAT requirements unless specifically otherwise authorized by the park superintendent. Such use would not be subject to guiding requirements. In addition, some snowmobiles that do not meet BAT requirements would be permitted for law enforcement, search and rescue, and other administrative purposes on a limited basis. Administrative use of snowmobiles may be supplemented with administrative snowcoaches.

NPS employees and their families living in the interior of Yellowstone (and their guests) must use BAT snowmobiles. The NPS would continue to provide snowcoaches and snowmobiles that meet BAT requirements for employee use. Employee-owned BAT snowmobiles may be used for up to six model years, and could continue to be used beyond six years if they are tested and certified to meet BAT requirements for emissions and sound outputs.

Concessioners and their employees and families living in the interior of Yellowstone (and their guests) may continue to use snowmobiles. All concessioner employee-owned snowmobiles operated in the park must continue to meet BAT requirements. Exceptions, such as non-BAT snowmobiles used to access power and telephone systems, would be granted on a limited basis. Families and guests of these concessioner employees must use snowmobiles that meet BAT requirements or snowcoaches.

Administrative OSV travel by NPS employees, their families, and their guests and by concession employees, their families, and their guests would be allowed only on groomed roads that meet safety criteria and that are identified for open for travel (exceptions could be made for administrative law enforcement and administrative search and rescue activities).

ACCESSIBILITY

All alternatives would continue to support the philosophy of universal access in the park. The NPS would continue to make reasonable efforts to ensure accessibility to buildings, facilities, programs, and services.

The NPS would develop strategies to ensure that new and renovated facilities, programs, and services (including those provided by concessioners) are designed, constructed, or offered in conformance with applicable policies, rules, regulations, and standards, including but not limited to the Architectural Barriers Act of 1968, the Americans with Disabilities Act of 1990 (ADA), the Rehabilitation Act of 1973, the Uniform Federal Accessibility Standards of 1984, and the Guidelines for Outdoor Developed Areas of 1999. The NPS would evaluate existing and new programs, buildings, activities, and services, including telecommunications and media, to determine current accessibility and usability by disabled winter visitors.

PLOWED ROADS

At a minimum, under all alternatives the following roads would continue to be plowed and private wheeled vehicles would be permitted:

- North entrance to Mammoth Hot Springs
- Mammoth Hot Springs to Upper Terrace Drive
- Mammoth Hot Springs to Tower Junction and the northeast entrance
- Roads in the developed areas at Mammoth Hot Springs, Tower Ranger Station, Lamar Ranger Station, northeast entrance, and Gardiner

Sand, or an equally environmentally neutral substance, may be used for traction on all plowed winter roads. No salt would be used and sand would be generally spread only in the shaded, icy, or hilly areas of plowed roads. Before spring opening, sand removal operations would be conducted on all plowed park roads.

NON-MOTORIZED ACCESS

- Non-motorized uses include cross-country skiing, backcountry skiing, hiking, and snowshoeing. Where feasible, the park would continue to set tracks for skiing on snow road edges. Backcountry non-motorized use would continue to be allowed in most of the park (see the exception for sensitive areas under “Elements Common to all Action Alternatives” below), subject to the Winter Severity Index program. The program restricts backcountry use of the park when winter snowpack and weather conditions become severe and appear to be adversely affecting wildlife.
- Ski and snowshoe use at the south and east entrances would be allowed to continue after roads close to motorized winter use (to allow for spring plowing). When spring plowing operations approach entrances, the roads would then be closed to skiing and snowshoeing for safety. Bear management closures of the park’s backcountry would continue as in previous years, preventing non-motorized use in these areas.
- Sensitive areas in the inner gorge of the Grand Canyon of the Yellowstone and McMinn Bench bighorn sheep area would continue to be closed to recreational winter use to provide for protection of sensitive resources.

EMERGENCY ACTIONS

None of the alternatives preclude closures for safety or resource protection. The superintendent would continue to have the authority to take emergency action to protect park resources or values.

MANAGEMENT ZONES

For all alternatives, the parks are divided into four management zones, as described below. Zones and their definitions do not change by alternative, although the intensity definition for each impact category may differ among the zones. Each zone is compared to one of the land classifications used under the Recreation Opportunity Spectrum (ROS), a recognized framework for inventorying, planning, and managing the recreational experience and setting of federal lands.

Developed Area—Areas under the direct influence of human development and dominated by human structures. These range in size from small areas, such as the Indian Creek warming hut, to large areas, such as Old Faithful. Structures include buildings, sewage treatment facilities, campgrounds, employee housing areas, maintenance yards and structures, boardwalks, hotels, and lodges. This zone is most similar to ROS classes "Rural" and "Urban." It includes areas within 100 yards of developed areas (but does not include backcountry cabins or utility lines).

Road Corridor—Areas directly influenced by roads; specifically, all primary and secondary roads open to either visitor or administrative motorized travel in the winter. As with the developed area, this zone extends 100 yards on either side of the road's center line. This zone is most similar to ROS class "Roaded Natural." Note that for purposes of this draft plan/SEIS this zone would not include roads open in the summer to motorized use but closed in the winter to OSV use. Some boardwalks and some utility lines would appear in this zone, but no buildings (which are zoned as developed areas).

Transition Zone—Areas indirectly influenced (mainly by sight and sound) by developed areas and roads. Specifically, they include all areas between 100 yards and 1.5 miles from either a developed area or a road corridor. This zone would include those roads closed to OSV travel in winter (with the possible exception of NPS authorized ski trail grooming equipment) but which may be open to motorized travel in summer. Yellowstone's Blacktail Plateau Drive, Bunsen Peak Road, and Lone Star Geyser Trail are examples of secondary roads included in transition zones. When a groomed ski trail is designated a transition zone, the zone would be 100 yards on either side of the groomed trail's center line. This zone would be most similar to ROS class "Roaded Natural" within 1/2 mile of roadways. From 0.5 mile to 1.5 miles from roads, "Semi-primitive Non-motorized" would be the nearest ROS class or, as is sometimes used, "Semi-primitive Wilderness," since these areas are recommended wilderness. Some utility lines could appear in this zone.

Backcountry—Areas where natural sights, sounds, and smells dominate and human-caused activities are minimal or completely absent. Specifically, this zone includes all areas more than 1.5 miles from the nearest road or developed area. This zone would be most similar to the "Primitive" ROS class.

MONITORING

The NPS would continue monitoring park resources; however, this may not be at the same levels or with the same research designs that have occurred in past years. This would provide the NPS with the ongoing information necessary to assess the impacts resulting from implementation of any alternative on park resources and values, visitor access, and to make adjustments, as appropriate, in winter use management.

EDUCATION AND OUTREACH

Under all alternatives, the park would continue to focus on education efforts directed at visitors along the northern road to Cooke City who visit the park using personal wheeled vehicles. The Albright Visitor Center in Mammoth Hot Springs would remain open to the public during the winter.

ALTERNATIVE 1: NO SNOWMOBILE/SNOWCOACH USE (NO-ACTION ALTERNATIVE)

The CEQ requires that the alternatives analysis in an EIS "include the alternative of no action" (40 CFR 1502.14(d)). The no-action alternative is developed for two reasons. First, a no-action alternative for a management plan represents the continuation of current management into the future, which may represent a viable alternative for meeting the agency's purpose and need. Second, a no-action alternative serves to set a baseline of existing impacts continued into the future against which to compare the impacts of the action alternatives (Director's Order 12, NPS 2011 section 2.7).

As of March 15, 2012, the interim regulation in effect for the 2011/2012 winter season (allowing up to 318 snowmobiles and 78 snowcoaches in the park per day) has expired. Under alternative 1, the park would not take any action to promulgate a new regulation, and therefore no public OSV use would be permitted in Yellowstone. If this alternative were implemented, Yellowstone would be operated like many northern and high elevation national parks (Glacier, Mt. Rainier, Lassen Volcanic, for example) that have limited wheeled vehicle access during the winter. However, non-motorized access and wheeled vehicle use along the northern road would still be allowed.

Under the no-action alternative, primary visitor access would be via wheeled vehicles from Yellowstone's north to northeast entrances. Yellowstone would be accessible for skiing and snowshoeing and the backcountry would remain open. Because there would be no motorized use in the interior of the park, the winter use season would begin once enough snow accumulates to allow for non-motorized uses. The east entrance road would be managed as backcountry. No administrative OSV travel would be allowed at the east entrance, and avalanche control operations would not be conducted along Sylvan Pass during the winter season. The park could be closed for wildlife management; for example, during particularly harsh winters certain portions of the park could be closed to skiing and snowshoeing to minimize impacts on wildlife.

ACTION ALTERNATIVES

Under the action alternatives, OSV use would be allowed and managed in the park. The action alternative descriptions provide details about the types of OSV use, as well as the level and location of OSV use.

ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

The following describes elements of the management actions common to all of the action alternatives.

Best Available Technology

BAT would continue to be required for snowmobiles and developed for snowcoaches. BAT requirements would vary by alternative. Specific BAT requirements are described for each alternative below.

Personal Protective Equipment

Personal protective equipment is recommended for snowmobilers, including helmet, snowmobile suit and gloves, proper footwear, and hearing protection. People traveling by snowcoach should also wear or have access to appropriate personal protective equipment including winter clothing, footwear, and hearing protection. Non-motorized users are advised to wear and carry personal protective equipment as appropriate for their winter travel. For all user groups, personal protective equipment should include avalanche rescue gear (shovel, probe, and transceiver), as appropriate.

Licensing and Registration

- OSV drivers must possess and carry a valid motor vehicle driver's license at all times. A learner's permit does not satisfy this requirement.
- Snowmobiles and snowcoaches must be properly registered and display a valid registration from a state or province in the United States or Canada, respectively.

Speed Limits

Maximum speed for all OSVs would be 35 miles per hour (mph). Speed limits could be lower in more congested areas or in wildlife sensitive corridors. For example, between West Yellowstone and Old Faithful. In developed areas, the speed limit would be 15 to 25 mph.

OSV Routes

OSV use would continue to be allowed only on designated routes, which are groomed roads that normally provide wheeled vehicle access in the summer. These winter use roads are shown in figure 2 for the action alternatives (alternatives 2, 3 and 4) and listed below with the exception of Fountain Freight (Flat) Road which will be closed to OSV use. Note that for alternative 3, the east entrance would be closed once the transition to snowcoaches is complete, and therefore the road between the east entrance and Yellowstone Lake would be closed at that time. No off-road or off-route OSV use would be permitted. The following routes would be open for OSV use:

- Grand Loop Road, from its junction with Upper Terrace Drive to Norris Junction
- Norris Junction to Canyon Junction
- Grand Loop Road, from Norris Junction to Madison Junction
- West Entrance Road, from the park boundary at West Yellowstone to Madison Junction
- Grand Loop Road, from Madison Junction to West Thumb
- South entrance road, from the south entrance to West Thumb
- Grand Loop Road, from West Thumb to its junction with the east entrance road
- East Entrance Road, from Fishing Bridge Junction to the east entrance
- Grand Loop Road, from its junction with the east entrance road to Canyon Junction
- South Canyon Rim Drive
- Lake Butte Road

FIGURE 2: OSV ROUTES UNDER ALL ACTION ALTERNATIVES

- Firehole Canyon Drive
- North Canyon Rim Drive
- Riverside Drive
- Roads in the developed areas of Madison Junction, Old Faithful, Grant Village, West Thumb, Lake, east entrance, Fishing Bridge, Canyon, Indian Creek, and Norris.
- The snowmobile route to Cave Falls would continue to operate. This route would be approximately 1 mile into the park to Cave Falls (a dead end). Up to 50 snowmobiles could enter this area per day; these snowmobiles would not be required to meet BAT requirements. This area would be exempt from commercial guiding and BAT requirements because the 1-mile, dead-end route does not connect to other snow roads in the park, and these requirements would be not applicable to a 1-mile stretch of road. The 50 snowmobile limit for the Cave Fall route would not be part of the snowmobile limits discussed below under the action alternatives.
- The park may open or close all designated oversnow routes, or portions thereof, in consideration of the location of wintering wildlife, adequate snowpack, public safety, and other factors related to safety and resource protection. All routes designated for snowmobile use would be open to snowcoaches.

OSV Management

Early and late entries (before 7:00 a.m. or after 9:00 p.m.) for special tours would not be permitted, including departures from Snow Lodge. Limited exceptions would be allowed for administrative travel and emergencies.

Non-motorized Use Areas

Approximately 35 miles of road would continue to be groomed for cross-country skiing in the park. These roads are mainly used during the summer, and are closed to OSV use. The roads may be machine groomed for skiing. Existing and new routes could be evaluated in the future, and changes announced through one or more of the methods listed in 36 CFR 1.7(a). Existing groomed areas for cross-country skiing include the following:

- Bunsen Peak Trail: 6 miles
- Indian Creek Loop: 2.2 miles
- Upper Terrace Loop Trail: 1.5 miles
- Old Canyon Bridge Trail: 1 mile
- Lone Star Geyser Trail: 2 miles
- Practice Ovals: 0.3 mile
- Cloverleaf: 0.8 mile
- Cabin Track: 0.4 mile
- East Road Track: 0.9 mile
- Morning Glory Trail: 3 miles
- Black Tail Plateau Trail: 8 miles
- Tower Falls Trail: 2.5 miles
- Chittenden Loop Trail: 5.3 miles
- Riverside Trail: 1 mile

In addition to the machine groomed roads, parallel tracks are set on the sides of some of Yellowstone's snow roads, typically including the west entrance to Madison (14 miles one way); Madison to Old Faithful (16 miles one way); and Madison to Norris (12 miles one way). These are established each time the road is groomed (every two or three days) and may be obliterated by snowcoach and snowmobile travel.

Sylvan Pass Avalanche Control

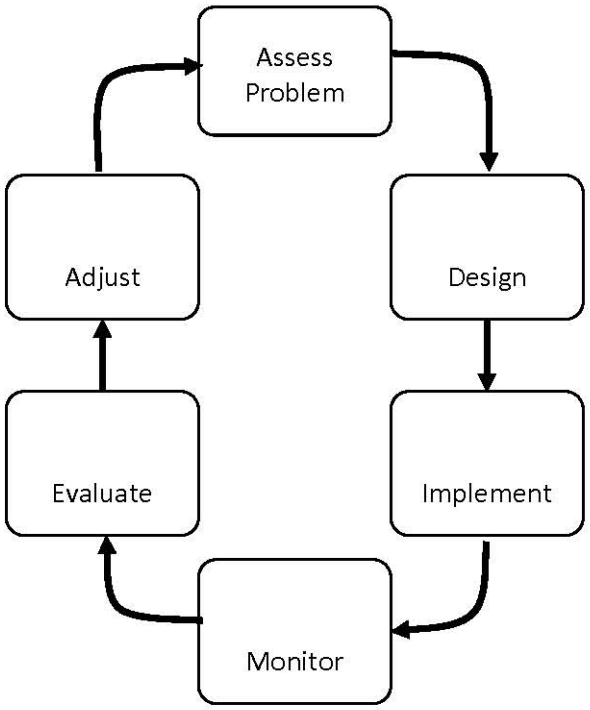
For action alternatives that include maintaining Sylvan Pass for OSV access (alternatives 2 and 4), the pass would continue to be operated in accordance with the Sylvan Pass Working Group Agreement. A combination of avalanche mitigation techniques may be used, including forecasting and helicopter and howitzer dispensed explosives. The results of the most recent safety evaluation of Sylvan Pass by the Occupational Safety and Health Administration (OSHA) and an Operational Risk Management Assessment (ORMA) would be reviewed and the NPS would evaluate additional avalanche mitigation techniques and risk assessment tools to further improve safety and visitor access. All actions implemented would take into consideration the implementation of the Sylvan Pass Working Group Agreement, allowing for the east entrance to be open from 8:00 a.m. to 9:00 p.m. with the road open to OSVs from 8:00 a.m. on December 22 through 9:00 p.m. March 1.

Adaptive Management

Adaptive management—learning by doing and then adapting/adjusting—is an important tool for resource management. It is based on the assumption that current scientific knowledge is limited and there is inherent uncertainty in plans. In 2007, the Department of the Interior released its Adaptive Management Technical Guide, defining the term and providing a clear process for building adaptive management processes into natural resource management (Williams et al. 2007). In 2008, the Department of the Interior codified the definition in regulation stating that adaptive management is "a system of management practices based on clearly identified outcomes and monitoring to determine whether management actions are meeting desired outcomes; and, if not, facilitating management changes that will best ensure that outcomes are met or re-evaluated" (43 CFR § 46.30). Additional guidance was provided in 2012 with the publication of *Adaptive Management: The U.S. Department of the Interior Applications Guide*, a new guide that provides federal, state, tribal, and other natural resource managers with tools to more effectively address the complexities and uncertainties involved in natural resource management. The Department regulations also direct its agencies to use adaptive management when appropriate (43 CFR 46.145).

Adaptive management is a continuing iterative process where a problem is first assessed, potential management actions are designed and implemented, those actions and resource responses are monitored over time, that data is evaluated, and actions are adjusted if necessary to better achieve desired management outcomes (see figure 3).

All action alternatives incorporate adaptive management initiatives that are designed to assist the park in meeting the objectives of this draft plan/SEIS. The adaptive management framework is provided in appendix C.



Source: Williams et al. 2007

FIGURE 3: GENERAL ADAPTIVE MANAGEMENT PROCESS DIAGRAM

DISCUSSION OF ACTION ALTERNATIVES

ALTERNATIVE 2: CONTINUE SNOWMOBILE/SNOWCOACH USE AT 2011/2012 WINTER SEASON INTERIM REGULATION LIMITS

Alternative 2 would continue winter use at the same levels as allowed under the interim regulations in effect from 2009 to 2012, which allowed for up to 318 snowmobiles and 78 snowcoaches per day in Yellowstone on the routes shown in figure 2. This alternative represents the continuation of conditions in the park that were in place for the 2009/2010, 2010/2011, and 2011/2012 winter seasons and incorporates concepts of fixed management (no daily variability in OSV numbers or sharing of allocations among gates). Routes open to snowmobiles and snowcoaches would remain the same as detailed in the original 2008 environmental assessment (EA) with the exception of Fountain Freight (Fountain Flat) Road, which would be closed to OSVs. These routes were reiterated in the 2009 interim regulation and 2011 Winter Use Plan/EIS and are restated under "Elements Common to All Action Alternatives" (see figure 2). Sylvan Pass (East Entrance Road) would be open for OSV travel in accordance with the Sylvan Pass Working Group agreement.

Snowmobile Management—The NPS would permit up to 318 snowmobiles per day into Yellowstone, all of which must meet BAT requirements. The maximum number per day would not vary. The routes open for snowmobile management are listed earlier in the chapter under "Elements Common to all Action Alternatives" (see figure 2).

All snowmobiles in the park would be required to travel with a commercial guide. No more than 10 snowmobiles, including that of the commercial guide, would be permitted per group. This is a change

from the 2009–2012 interim regulations that allowed for 11 per group. Visitors would pay the park entrance fee and would pay for the services of the commercial guide.

Entrance allocations would be fixed, meaning each entrance would allow entry up to its assigned number of snowmobiles per day. The exceptions would be Old Faithful and the north entrance, whose operator (currently Xanterra) could share allocations. See table 1 for specific entrance allocation numbers.

At maximum use, each snowmobile could hold two riders, resulting in a maximum daily use of 636 people. Although each snowmobile can accommodate two riders, an average utilization of snowmobiles is 1.4 riders, resulting in an average of 445 visitors by snowmobile daily.

TABLE 1: DAILY SNOWMOBILE ENTRY ALLOCATIONS UNDER ALTERNATIVE 2

Entrance	Commercially Guided Snowmobiles
West Entrance	160
South Entrance	114
East Entrance	20
North Entrance	12
Old Faithful	12
Total	318

Snowcoach Management—The NPS would permit up to 78 snowcoaches per day into Yellowstone. In addition to the snowmobile routes listed above, the following routes would be open to snowcoaches:

- Upper Terrace Drive in Mammoth to its junction with the north
- Roads in the developed area of Mammoth Hot Springs (rubber-tracked coaches only)
- Grand Loop Road, from Canyon Junction to the Washburn Hot Springs Overlook.

All snowcoaches operating in the park would be required to operate in accordance with a concessions contract and meet BAT requirements, as described further below. All snowcoaches would be driven by commercial drivers. Entrance allocations would be fixed, meaning each entrance would only allow entry to its assigned number of snowcoaches per day (as with snowmobiles, Xanterra allocations at North and Old Faithful could be shared). See table 2 for specific entrance allocation numbers. Visitors would pay the park entrance fee and those charged by the snowcoach operator.

TABLE 2: MAXIMUM DAILY SNOWCOACH ENTRY ALLOCATIONS UNDER ALTERNATIVE 2

Entrance	Commercially Guided Snowcoaches
West Entrance	34
South Entrance	13
East Entrance	2
North Entrance	13
Old Faithful	16
Total	78

At maximum use, the average capacity of a snowcoach is 12.3, resulting in a maximum daily use of approximately 959 snowcoach passengers, or 1,037 including the driver. Although each snowcoach can accommodate more riders, on average utilization of snowcoaches is 8 passengers, resulting in a daily average of 624 visitors via snowcoach or 702 including the driver.

Wheeled Vehicle Management—Under alternative 2, wheeled vehicle access would continue as described under "Elements Common to All Alternatives."

Non-motorized Use Management—Under alternative 2, non-motorized uses would continue as described under "Elements Common to All Alternatives."

BAT Requirements—BAT would continue to be required for snowmobiles, and would initially follow the same BAT requirements in place under the interim regulations. Beginning in the 2017/2018 season, the maximum allowable air and sound emissions for snowmobiles would be reduced, as discussed below. BAT standards would be implemented for snowcoaches in the 2017/2018 season. Specific BAT requirements would include the following:

- Air emission requirements would be no greater than 120 grams per kilowatt-hour (g/kW-hr) of carbon monoxide and 15 g/kW-hr for hydrocarbons.
- Sound restrictions would require a initially snowmobile to operate at or below 73 decibels (dB) measured using the A-weighted decibel (dBA) scale while at full throttle, according to Society of Automotive Engineers J192 test procedures (revised 1985) (SAE J192). Beginning in the 2017/2018 season, sound emissions requirements would be reduced to 71 dBA, following these same test procedures.
- Snowcoach BAT would require that snowcoach sound emissions measure 75 dBA at cruising speed. All existing snowcoaches would either need to meet BAT requirements by the 2017/2018 winter season or be removed from service. All new snowcoach vehicles put in service beginning in the 2013/2014 season would need to meet BAT requirements immediately. Snowcoach BAT is further described in appendix A.
- BAT sound standards for snowmobiles and snowcoaches would be measured in different ways due to the type of information available for each type of vehicle. Snowmobiles are tested and certified by the manufacturer; these tests are conducted using SAE J192 test procedures. Under these test procedures, snowmobile noise emissions are tested at full throttle. Full throttle does not necessary mean at top speed, but represents the highest speed the snowmobile reaches along a pre-determined course. Since there are no snowcoach industry specific testing standards for noise emissions, snowcoach measurements for sound are based on emissions testing that would be conducted in the park. These tests would be conducted at cruising speed, rather than full throttle. Because of these differences, throughout this plan/SEIS, sound standards are measured at full throttle for snowmobiles and at cruising speed for snowcoaches.
- For any class of OSV, if the U.S. Environmental Protection Agency (EPA) adopts standards that are more stringent than the requirements resulting from this draft plan/SEIS, the EPA standards would become the NPS standards.
- As part of limiting sound and pollution from OSVs, idling would be limited to no more than 3 minutes at any one time.

Dates of Operation and Transition to New Plan—Under alternative 2, conditions existing during the 2011-2012 winter seasons would continue and a transition period would not occur. The winter season dates, December 15 to March 15, would remain the same. Hours of operation for OSV use would be

between 7:00 a.m. and 9:00 p.m. As specified in the "Elements Common to All Action Alternatives" section, the east entrance would be open from December 22 through March 1 from 8:00 a.m. to 9:00 p.m.

ALTERNATIVE 3: TRANSITION TO SNOWCOACHES THAT MEET BAT REQUIREMENTS ONLY

Under alternative 3, OSV access into the park would transition to BAT snowcoaches. Alternative 3 would initially provide for both snowmobile and snowcoach access under interim regulation levels of up to 318 BAT snowmobiles and 78 snowcoaches per day until the 2017/2018 season. Beginning in the 2017/2018 winter season, all snowcoaches would need to meet BAT requirements and snowmobiles would begin to be phased out. Snowcoaches would completely replace snowmobiles within a 3-year period after the phase-out begins, by the 2020/2021 winter season. Under alternative 3, Sylvan Pass (the east entrance) would be closed to all OSVs from the east entrance to the Fishing Bridge Developed Area once the phase-out of snowmobiles is complete. Non-motorized use at the east entrance would include a backcountry experience along this route. In addition, non-motorized use would continue as described under "Elements Common to All Alternatives" and approximately 10 miles of side roads would become ski/snowshoe routes.

Snowmobile Management—Alternative 3 would initially allow for up to 318 BAT snowmobiles per day into Yellowstone. Daily snowmobile limits and entrance allocations during this time would be the same as listed in the "Elements Common to all Action Alternatives" section (refer to table 1 for specific entrance allocation numbers). Starting in the 2017/2018 winter season, a 3-year transition to BAT snowcoaches only would begin. As the number of BAT snowcoaches increase, the number of snowmobiles would decrease until there are up to 120 snowcoaches and zero snowmobiles.

Routes available to snowmobile use would be the same as those listed under "Elements Common to All Action Alternatives" (also see figure 2) except for Riverside Drive. In addition, once the transition to snowcoaches is complete, the road from the east entrance and the Fishing Bridge Developed Area would be closed.

Management of snowmobile use under alternative 3 would require all snowmobiles in the park, except those on Cave Falls Road, to travel with a commercial guide. There would be no more than 10 snowmobiles allowed per commercially guided group, including the commercial guide. Visitors would pay the park entrance fee and would pay for the services of the commercial guide.

Daily snowmobile levels would be fixed for the season and would not vary during the season. As snowmobile numbers are reduced each season, those daily entrance levels would also be fixed. See table 3 for specific initial entrance allocation numbers. As the number of snowmobiles in the park decreases, there would be a corresponding decrease to the entrance allocations for snowmobiles.

TABLE 3: INITIAL DAILY SNOWMOBILE ENTRY ALLOCATIONS UNDER ALTERNATIVE 3

Entrance	Commercially Guided Snowmobiles
West Entrance	160
South Entrance	114
East Entrance	20
North Entrance	12
Old Faithful	12
Total	318

As with alternative 2, at maximum use, each snowmobile could hold two riders, resulting in a maximum of 636 passengers daily. Although each snowmobile can accommodate two riders, on average utilization of snowmobiles is 1.4 riders, resulting in daily average of approximately 445 passengers. At the end of the phaseout (winter 2020/2021 season), there would be zero snowmobile passengers.

Snowcoach Management—The NPS would initially permit up to 78 snowcoaches per day into Yellowstone. Daily snowcoach limits initially would be the same as under alternative 2 (refer to table 3 for specific entrance allocation numbers).Once all snowcoaches meet BAT requirements, by the 2017/2018 winter season, additional snowcoaches would be added with a corresponding decrease in snowmobile use up to a total of 120 BAT compliant snowcoaches per day. After a 3-year period, by the winter season 2020/2021, only BAT snowcoaches would be permitted in the park.

To achieve this alternative, the park would issue a prospectus that would allow for both guided snowmobile and snowcoach services, as described below in the "Transition Management" section.

Snowcoach routes under alternative 3 would be the same as snowmobile routes.

All snowcoaches operating in the park would be required to operate in accordance with a concessions contract and meet BAT requirements, as discussed below. All snowcoaches would be driven by a commercial driver. Daily snowcoach levels would be fixed and there would be no variation in the total number allowed day to day. Table 4 shows the initial daily snowcoach entry limits, and the limits at the end of the phaseout.

TABLE 4: DAILY SNOWCOACH ENTRY ALLOCATIONS UNDER ALTERNATIVE 3

Entrance	Commercially Guided Snowcoaches Before Phaseout	Commercially Guided Snowcoaches After Phaseout
West Entrance	34	62
South Entrance	13	10
East Entrance	2	0
North Entrance	13	19
Old Faithful	16	29
Total	78	120

At maximum use, prior to phase-out, until the winter season 2020/2021, the average capacity of a snowcoach is 12.3, resulting in a maximum of 959 snowcoach passengers daily, or 1,037 including the driver. Although each snowcoach can accommodate more riders, average capacity of snowcoaches is 8 passengers, resulting in a daily average of 624 passengers, or 702 including the driver.

If all allocations are used, maximum possible use after the phase-out, winter season 2020/2021 and beyond, would be 1,476 snowcoach passengers (1,596 with the driver), with an average of 960 passengers (1,080 with the driver).

These allotted snowcoach numbers would lead to an estimated 959 snowcoach passengers prior to the phaseout (1,037 with the driver), and up to 1,476 snowcoach passengers after the phaseout (1,596 with the driver), if all of the allocations are used.

Transition Management—To achieve this alternative, the park would issue a prospectus that would allow for guided snowmobile and snowcoach services. Each company that wins a contract would be given an allocation of snowmobiles and snowcoaches. The snowmobile totals of all contracts would not exceed 318. For snowcoaches, each contract would have an allocation that initially would equal a total of 78 coaches among all providers and would increase to a total of 120. At the end of each winter season, the NPS would request the number of BAT snowcoaches coming in service the following season from each OSV tour company. The tour company could request to replace snowmobiles with snowcoaches. For each snowcoach added, a reduction of seven snowmobiles would occur. Once the last BAT compliant snowcoach under each contract is added, any remaining snowmobiles on a given contract would be replaced by the last BAT compliant snowcoach. That is, the last snowcoach might replace anywhere from 7 to 13 snowmobiles. The full transition would be complete, and no snowmobiles would be permitted in the park beginning in the 2020/2021 winter season. All remaining snowmobile allocations would be required to be converted to snowcoach allocations.

Wheeled Vehicle Management—Under alternative 3, wheeled vehicle access would continue as described under "Elements Common to All Alternatives."

Sylvan Pass Management—The East Entrance Road would be open as described under alternative 2 until the 2020/2021 season. Beginning in the 2020/2021 season, the East Entrance Road would be closed to all travel no later than the first Monday following the first full week in November. The East Entrance Road could close earlier if deemed unsafe due to avalanche or weather conditions in the Sylvan Pass area.

The road from the east entrance to ¼ mile east of 5-mile bend would be designated for non-motorized travel (skiing and snowshoeing) and maintained by Resource and Visitor Protection staff using snowmobile-towed grooming equipment to set tracks. This would maintain and support existing skiing and snowshoeing opportunities currently originating from the Pahaska TePee area just outside the park and commensurate with similar opportunities occurring elsewhere in the park such as Blacktail Drive, Bunsen Peak, Tower Falls, Upper Terrace Loop and several trails at the Old Faithful area.

No grooming would occur between Fishing Bridge Developed Area and ¼ mile east of 5-mile bend on the east side of Sylvan Pass. This section of road would be closed to all OSV travel from ¼ mile east of 5-mile bend on the east side of Sylvan Pass to the Fishing Bridge Developed Area. This road segment would be designated for non-motorized travel at your own risk. A boundary gate would be installed ¼ mile east of 5-mile bend demarcating the area beyond the gate as containing significant and concentrated avalanche terrain hazard. The road would be groomed from the east entrance to ¼ mile east of 5-mile bend to facilitate access by skiers and snowshoers. No motorized travel would be permitted over Sylvan Pass between the fall closure and spring opening dates except in emergency situations.

There would be no use of explosives to mitigate avalanches on the pass or elsewhere in the park, including howitzer or helicopter dispensed explosives except in emergency situations.

The East Entrance Road would open in the spring when weather and avalanche conditions permit. The road would be open no sooner than the 3rd Saturday in April (theoretically two weeks earlier than the traditional opening day of the first Friday in May). The season would more closely match the public use season for the south end of the park; however, actual opening day for the east entrance would depend on avalanche and weather conditions. There would be no use of explosives to mitigate avalanches on the pass to facilitate spring opening.

Non-Motorized Management—Non-motorized uses, including cross-country skiing, backcountry skiing, hiking, and snowshoeing, would continue as described in the "Elements Common to All Alternatives" section.

Additional non-motorized backcountry use opportunities would be present on the east side of the park once the transition is complete and the east entrance is closed.

BAT Requirements—BAT requirements under alternative 3 would be the same as alternative 2.

Dates of Operation and Transition to New Plan—Because alternative 3 begins with levels that have already been in effect from 2009 to 2012, there would be no transition year. Dates of operation and operating hours would be the same as under alternative 2 for all gates except the east gate.

ALTERNATIVE 4: MANAGE OSV USE BY TRANSPORTATION EVENTS

Under alternative 4, OSV access to the park would be managed by transportation events. A transportation event would initially equal one snowcoach or a group of seven snowmobiles (seasonal average; groups could not exceed a maximum of 10 snowmobiles) travelling together within the park. This management strategy is based on the concept of comparability; that impacts to park resources and the visitor experience resulting from a snowcoach or a group of snowmobiles are comparable to each other. For example, regarding the behavioral and physiological responses of wildlife to OSVs, recent behavioral monitoring data and modeling indicates that snowmobiles are slightly more likely to elicit a visible behavioral response from bison or elk but snowcoaches elicit slightly stronger levels of behavioral responses, such as movement or flight (Borkowski et al. 2006; McClure et al. 2009; White et al. 2008). For soundscapes, specifically length of time a discrete transportation event is audible, data collected at 14 different locations in the park from 2005 to 2011 show that groups of snowmobiles were heard, on average, 3 minutes, 4 seconds while snowcoaches were heard on average 2 minutes, 46 seconds. The overall difference in elapsed time between snowmobiles and snowcoaches averaged only 17 seconds over a total of 1,127 events. Regarding visitor satisfaction and experience, 100% of visitors stated in a recent survey that they were either ‘very satisfied’ (87%) or ‘somewhat satisfied’ (13%) with their overall experience in the park in winter (Friemund et. al 2009). For additional details and examples see chapter 4.

The park would permit up to 110 transportation events daily, of which up to 50 daily transportation events may be groups of snowmobiles. Managing by OSV transportation events is an approach that bases management on the impact of OSV groups. This approach would facilitate greater operator flexibility, reward future OSV technological innovations, and reduce environmental impacts from OSVs, while allowing for increases in wintertime visitation. Should OSVs meet additional environmental performance standards, each transportation event size would be able to increase, allowing the seasonal average group size for snowmobiles to go from 7 to 8, and allowing up to 2 snowcoaches per transportation event, while reducing impacts to park resources.

Alternative 4 would allow for a total of 110 transportation events each day, which would be distributed among the providers via concessions contracts. Operators would decide whether to use their daily allocation for snowmobiles or snowcoaches, or a mix of both, but no more than 50 daily transportation events parkwide could come from snowmobiles.

Under alternative 4, all snowmobile use would be guided. Most would be commercially guided, but some noncommercially guided use would be allowed. Four transportation events per day (one per gate) of up to 5 snowmobiles each would be reserved for noncommercially guided access. Each noncommercial guide would be allowed to lead up to 2 groups per season and permits for this opportunity would be allocated via an on-line lottery system. Noncommercial guiding is further explained in appendix B. The Sylvan Pass entrance would remain open per the Sylvan Pass Working Group Agreement. Similar to the other action alternatives, all snowcoaches would be driven by a commercial driver. All noncommercially guided snowmobiles would need to meet BAT standards.

Snowmobile Management—Snowmobile use would be managed by transportation events and would include the following:

- For snowmobiles, a transportation event would be one group of snowmobiles.

- Group size for commercially guided groups would need to average 7 snowmobiles per group over the season, and could not exceed 10 per group on any day. For example, operators may choose to maximize group sizes up to 10 snowmobiles per group during busy times, such as holidays. If so, group sizes would need to be smaller at other times during the season to ensure that group sizes averaged 7 snowmobiles per group.

- Each operator would be responsible for keeping track of their average use and reporting these numbers to the park on a monthly basis. Although operators would report the average group size numbers to the park on a monthly basis, the group size average limits are only applicable to the end of the season. Concessioners would be required to submit a monthly use report to summarize daily visitor use, including the number of snowmobiles, number of people, number of day and overnight tours, and the number of allocations, if any, used from another concessioner. Should concessioners exceed allowed averages they would receive an unsatisfactory reporting rating that may result in temporary or permanent suspension of their concession contract.

- Each operator would be able to use their allocations of transportation events for snowmobiles, snowcoaches, or a mix of both, as long as no more than 50 total events come from snowmobiles on a given day. Daily allocations and entrance distributions for transportation events under alternative 4 are shown in table 5.

- The maximum number of guided transportation events for snowmobiles would be 50, with 46 of those transportation events allocated to commercially guided trips and 4 allocated to noncommercially guided snowmobile trips.

- Noncommercially guided groups could have a maximum of five snowmobiles per group, including a noncommercial guide, and all noncommercially guided snowmobiles would be required to meet BAT standards.

- At the highest potential level of use, with all 50 snowmobile events used in a single day, there could be a maximum of 480 snowmobiles in the park, as shown in table 5. Although this is the maximum number of snowmobiles that could be permitted into the park on a single day, this level of use would not occur every day because commercially guided group sizes must average 7 over the season, and noncommercially guided groups could not exceed a group size of 5.

- The average maximum use would be 342 snowmobiles per day (322 commercially guided snowmobiles plus 20 noncommercially guided snowmobiles).

- Current BAT standards will remain in place through the 2016/2017 season. New BAT standards will take effect for the 2017/2018 season and will be 90 g/kwh for carbon monoxide, 15 g/kwh for hydrocarbons, and 68 dBA for noise emissions (SAE J192)

- If all snowmobiles in a given group meet enhanced BAT (E-BAT), emitting a maximum of 66 dBA (2 dBA less than the BAT standard of 68 dBA via SAE J192), the average group size for snowmobiles could increase to a seasonal average of 8 snowmobiles per group. In that case, average maximum daily use would be 388 snowmobiles per day (see table 6), of which 368 would be from commercially guided use. The actual number of snowmobiles each day in the park

could be less, given changes in demand and how operators allocate their transportation events. If more events are used for snowcoaches, the result would be fewer snowmobiles.

TABLE 5: DAILY SNOWMOBILE ENTRY LIMITS UNDER ALTERNATIVE 4

Entrance	Transportation Events for Commercially Guided Snowmobiles	Transportation Events for Noncommercially Guided snowmobiles	Commercially Guided Snowmobiles Maximum (460 total on a peak day)	Commercially Guided Snowmobiles Average (322 total)	Commercially Guided Snowmobiles Average (if all meet additional "Established Standards" (368))
West Entrance	23	1	230	161	184
South Entrance	16	1	160	112	128
East Entrance	3	1	30	21	24
North Entrance	2	1	20	14	16
Old Faithful	2	0	20	14	16
Total	46	4	460	322	368

TABLE 6: MAXIMUM NUMBER OF SNOWMOBILES IN THE PARK IF ALL TRANSPORTATION EVENTS ARE USED

	46 Transportation Events from Commercially Guided Tours	4 Transportation Events for Noncommercially Guided Groups	Total Snowmobile use in the Park
Peak Day (10 snowmobiles per commercially guided group, 5 per noncommercially guided group)	460	20	480
Average Day (7 snowmobiles per commercially guided group, 5 per noncommercially guided group)	322	20	342
Average Day if all Snowmobiles meet enhanced BAT (8 snowmobiles per commercially guided group, 5 per noncommercially guided group)	368	20	388

The snowmobile BAT standards for sound emissions under alternative 4 would originally be 73 dBA and starting in the 2017/2018 winter season, sound emission requirements would be reduced to 68 dBA, as further discussed below in the "BAT Requirements" section. This reduction would make the park quieter, and it would make sound emissions from a group of snowmobiles comparable with the sound emissions from a snowcoach,

All existing oversnow routes in the park, as listed in the "Elements Common to all Action Alternatives" section, would be open to snowmobile use, with areas subject to occasional closure to allow for non-motorized uses. Commercial operators at a gate would be able to share allocations within that gate (for example, operators at the west gate could trade allocations among each other) but allocations could not be traded between different gates. Fees for snowmobile use through commercial operators would continue as described under alternative 2.

Noncommercial Guiding—One noncommercially guided snowmobile group (as defined above in the "Definitions" section), with up to 5 snowmobiles per group, would be allowed through each of the four entrances per day. Non-commercial guides would be required to complete a training program that would

be developed in cooperation with interested parties and stakeholders. Noncommercial allocations would be awarded through an online lottery. Noncommercial guides would be limited to leading two groups per winter season in the park. Further detail on the proposed noncommercial guide program is provided in appendix B.

Snowcoach Management—Snowcoach use would be managed by transportation events and would include the following:

- For snowcoaches, a transportation event would initially equal one snowcoach, regardless of coach size.

- The number of snowcoaches per event could rise from 1 to 2 if both snowcoaches meet enhanced BAT (E-BAT), emitting no more than 71 dBA (4 dBA less than the 75 BAT standard). In order to be considered a single transportation event, the two snowcoaches would be required to travel together closely, keeping a safe distance between them.

- Each operator would be able to use their allocation of transportation events on snowmobiles or snowcoaches. In total, 110 transportation events would be distributed among the operators and entrances to be used for snowmobiles or snowcoaches.

- Under this framework, the initial maximum number of snowcoaches could be 106 if all transportation events were used for snowcoaches, because 4 transportation events would be reserved for noncommercially guided snowmobile access.

- Should the maximum allocation of snowmobiles be used, 60 snowcoaches and 480 snowmobiles per day (as described above under Snowmobile Management) would be permitted on a maximum use day. These two allocations represent the extreme potentials of this scenario. It is likely that actual use would end up somewhere in between these extremes.

- At some point in the future, if all snowcoaches meet the enhanced BAT, the number of snowcoaches in the park on a daily basis would range from 120 snowcoaches (if all snowmobile allocations are used) to 212 snowcoaches (if no snowmobile allocations are used, but 4 would remain for noncommerically guided use). Entrance distribution for snowcoaches is shown in table 7.

TABLE 7: DAILY SNOWCOACH ENTRY LIMITS UNDER ALTERNATIVE 4

Entrance	60 Total Snowcoaches (if all 50 snowmobile events are used)	120 Total Snowcoaches (if all 50 snowmobile events are used and all snowcoaches meet additional "sound standards")	110 Total Snowcoaches (if zero snowmobile events are used)	220 Total Snowcoaches (if zero snowmobile events are used and all snowcoaches meet additional "sound standards")
West Entrance	26	52	47	94
South Entrance	10	20	17	34
East Entrance	2	3	2	4
North Entrance	10	20	17	34
Old Faithful	12	25	23	46
Total	60	120	106	212

Similar to other action alternatives, all snowcoaches operating in the park would be required to operate in accordance with a concessions contract and meet BAT requirements, as described in detail below. Private snowcoaches would not be permitted (all snowcoaches must be driven by a commercial driver) and fees for snowcoach use through commercial operators would continue.

Wheeled Vehicle Management—Under alternative 4, wheeled vehicle access would continue as described under "Elements Common to All Alternatives."

Non-Motorized Use Management—Non-motorized uses, including cross-country skiing, backcountry skiing, hiking, and snowshoeing, would continue as described in the "Elements Common to All Alternatives" section.

BAT Requirements—BAT would continue to be required for snowmobiles, and would initially follow the same BAT requirements in place under the interim regulations. Beginning in the 2017/2018 season, the maximum allowable air and sound emissions for snowmobiles would be reduced, as discussed below. BAT standards would be implemented for snowcoaches in the 2017/2018 season. Specific BAT requirements would include the following:

- Air emission requirements would initially be no greater than 120 grams per kilowatt-hour (g/kW-hr) of carbon monoxide and 15 g/kW-hr for hydrocarbons. Beginning in the 2014/2015 season, carbon monoxide emissions would be reduced to 90 g/kW-hr.
- Sound restrictions would initially require a snowmobile to operate at or below 73 dB measured using the dBA scale while at full throttle, according to SAE J192 test procedures (revised 1985). Beginning in the 2017/2018 season, sound emissions requirements would be reduced to 68 dBA, following these same test procedures.
- Snowcoach BAT would require that snowcoach sound emissions measure 75 dBA, at cruising speed. All existing snowcoaches would either need to meet BAT requirements by the 2017/2018 winter season or be removed from service. All new snowcoach vehicles put in service beginning in the 2013/2014 season would need to meet BAT requirements immediately. Snowcoach BAT is further described in appendix A.
- BAT sound standards for snowmobiles and snowcoaches would be measured in different ways, as described under alternative 2.
- For any class of OSV, if the EPA adopts standards that are more stringent than the requirements resulting from this draft plan/SEIS, the EPA standards would become the NPS standards.
- As part of limiting sound and pollution from OSVs, idling would be limited to no more than 3 minutes at any one time.
- Enhanced BAT:
  - If all snowmobiles in a given group meet enhanced BAT, emitting a maximum of 66 dBA (2 dBA less than the BAT standard of 68 dBA), the average group size for snowmobiles could increase to a seasonal average of 8 snowmobiles per group.
  - The number of snowcoaches per event could rise from 1 to 2 if both snowcoaches meet enhanced BAT, emitting no more than 71 dBA (4 dBA less than the 75 BAT standard). To be considered a single transportation event, the two snowcoaches would be required to travel together closely, keeping a safe distance between them.

Dates of Operation and Transition to New Plan—Under alternative 4, date and times of operation would be the same as under alternative 2.

Under alternative 4, a two-season transition period would be put in place to prepare for the implementation of the new winter-use plan. Provisions of the 2011/2012 interim regulation would continue during this transition.

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

For various reasons, some alternatives or actions were initially considered but eliminated from further study. Those alternatives and actions dismissed from further consideration did not meet the definition of a reasonable alternative, as stated by the CEQ. The CEQ states that, "Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant." In addition, they also meet project objectives, resolve need, and alleviate potentially significant impacts to important resources. An alternative is not automatically rendered unreasonable if it requires the amending of a park plan or policy; causes a potential conflict with local, state, or federal law; or lies outside the scope of what Congress has approved or funded or outside the legal jurisdiction of the NPS. The rationales for dismissal are presented in this section.

The following alternatives were considered but dismissed. These dismissed alternatives, when combined with the alternatives fully evaluated above, constitute the full range of alternatives the NPS is required to consider under NEPA.

SOUND EVENT MANAGEMENT, WITH VEHICLE LIMITS AND OTHER ELEMENTS FROM THE DRAFT PLAN/SEIS PUBLIC SCOPING

During public scoping for this draft plan/SEIS, which occurred in February 2011, the public was presented with a range of alternatives that included two alternatives that managed OSV use by sound events. After public scoping concluded, the NPS analyzed the public comments and revisited the range of alternatives. It was determined that these two alternatives were very similar in nature and therefore they were combined into a single alternative, which is analyzed in this draft plan/SEIS as alternative 4. This alternative has been renamed "Transportation Events" from "Sound Events" to reflect the variety of impacts, including sound, managed by this alternative.

As part of the creation of a single transportation event alternative, the elements of those preliminary alternatives were also reexamined. The element that required operators to offer both snowmobile and snowcoach trips was removed from this combined alternative. Public comments noted that this element would require operators to develop additional infrastructure to accommodate different vehicle types and would require a very large financial output to comply, as well as additional land that is not available in these communities. They also noted that the current operations tend to specialize in one type of OSV transportation over another, and companies would not be able to sustain adding an additional mode of transportation. Because of these factors, commenters felt that this requirement would be unfair and discriminatory for operators. The NPS considered this input and removed this element from consideration in this draft plan/SEIS because it would be unreasonably expensive to the individual operators and appears to have little relevance to the overall management issues and impacts being analyzed in this plan/SEIS.

The element that limited park entrance to commercial wheeled or rubber-tracked vehicles during the first two weeks and last two weeks of the season (December 15–29 and March 1–15) was removed from further analysis. This element was based on an assumption that recent winter conditions were trending toward later opening and earlier closing dates. Public comment during scoping noted that the historic

opening dates that this element was based on were skewed by a few unusually late years within the 10 years considered, and that this was not the general trend for opening dates. In addition, the public felt that if the NPS quit plowing the roads earlier in November, the likelihood park roads would have sufficient snow to facilitate oversnow travel by December 15 would be higher. Upon reexamination of this element, the assumption underlying this element appears unsupported, so it was removed from consideration in this draft plan/SEIS. However, as is currently the case, the NPS maintains the authority to open late or close early based on winter conditions in any given year.

Allow Winter Use at 2004 Plan Levels (Alternative 3 in the 2011 Winter Use Plan/EIS) or Higher Levels

The 2011 Winter Use Plan/EIS looked at an alternative that would allow for up to 720 snowmobiles and 78 snowcoaches a day. During public scoping for this draft plan/SEIS, commenters requested that this alternative again be considered or offered other higher number scenarios, such as up to 1,000 snowmobiles, that they felt should be considered in this process. This alternative, or other alternatives that consider higher use numbers, has been considered in numerous past planning processes for winter use at Yellowstone. The most recent completed process, the 2011 Winter Use Plan/EIS, found that at levels of 720 snowmobiles and 78 snowcoaches per day, there would be long-term adverse impacts to soundscapes at moderate to major levels, which would limit the NPS's ability to minimize impacts. Further, this alternative did not meet objectives related to visitor use, wildlife, and sound as well as other alternatives did. Implementing use levels at the 2004 Winter Use Plan levels or higher was not carried forward for further analysis because the result of the impact analysis showed that the alternative would not meet the objectives of this plan or NPS policies. In addition, implementing use levels at the 2004 Winter Use Plan levels would not meet park mandates to protect the soundscape of the park, a scenario inconsistent with park statements of purpose and significance. The NPS is aware of no changed circumstances or new information that would alter the analysis of these issues in the 2011 Winter Use Plan/EIS, and thus does not believe it needs to be analyzed again in this plan/SEIS.

Implement Variable Management (Alternative 6 in the 2011 Winter Use Plan/EIS) and Provide a Variety of Use Levels and Experience for Visitors (Alternative 7 in the 2011 Winter Use Plan/EIS)

The 2011 Winter Use Plan/EIS considered two alternatives that looked at varying the use level, possibly on a daily basis, throughout the winter season. These two alternatives were initially proposed to provide a range of experiences throughout the winter season, including high motorized use days and low (to no) motorized use days. Public comment on these two concepts was received during the comment period on the 2011 Winter Use Plan/DEIS as well as during public scoping for this draft plan/SEIS (for alternative 7).

Public comment stated that variability, as set up in these two alternatives, was not desirable for operators or visitors. From the operators' side, it was too complex to implement and too difficult to maintain needed infrastructure. For example, commenters stated that it would not be economically feasible to buy the number of machines needed to take advantage of high use days, when those machines would not be used during other parts of the season. They also noted that visitors with multi-day trips may not be able to get the visitor experience they were looking for throughout their trip if the level of use changed day to day. The variability was also viewed as too complex by visitors, who were looking for more certainty when planning their trip. Other commenters felt that the low and high use days were not equitably distributed, and that the high use days would allow for too much use. For the NPS, this alternative would result in unexpected impacts to park operations since the concept of variability was difficult to communicate and complex in implementation. Based on these comments, the NPS reconsidered the idea of variable use

against its objectives and determined that, due to the complexity and confusion evident in public comment, this concept would not meet the objectives to increase visitor understanding or to improve coordination and communication regarding winter use. Because the idea of variable use would not meet the objectives of the plan, and would be difficult to implement technically and logistically for both the NPS and operators, alternatives 6 and 7 from the 2011 Winter Use Plan/EIS were not carried forward for further analysis. Moreover, the NPS is aware of no relevant changed circumstances or new information that would alter the analysis of these issues from the 2011 EIS, and thus does not believe it needs to be analyzed again in this plan/SEIS.

Additional Suggestions for Noncommercially Guided Use

During public scoping for this draft plan/SEIS, the public offered many suggestions related to how a noncommercially guided program could be executed at Yellowstone. Some of these suggestions included increasing the trips allowed, such as allowing one trip a day for each operator or allowing up to five groups a day, increasing the percentage of noncommercially guided use (ranging from 10 percent to 25 percent), and considerations for training and educating noncommercial guides. These concepts were evaluated and the noncommercially guided element presented during public scoping was modified to allow for one noncommercially guided group per day from each entrance (originally proposed as one total group per day). These limits would be part of the initial program, which could be expanded in the future. Appendix B of this draft plan/SEIS provides more information on noncommercially guided use (see also alternative 4).

Limit Routes Where OSVs are Permitted to the South Entrance Only

During public scoping, commenters suggested that, due to potential impacts on animal migration patterns, OSV use should be limited to the South Entrance Road only (to Old Faithful) and that no OSVs should be permitted in the remainder of the park. As stated in the 2011 Winter Use Plan/EIS, the best available evidence regarding road grooming and bison distribution suggests the following: first, the observed changes in bison distribution that have occurred were likely consequences of natural population growth and range expansion, which would have occurred regardless of the presence of snow-packed roads (Bjornlie and Garrott 2001; Coughenour 2005; Gates et al. 2005; Bruggeman et al. 2009a). Second, road grooming did not change the population growth rates of bison relative to what may have been realized in the absence of road grooming (Gates et al. 2005; Bruggeman et al. 2006; Fuller 2006; Wagner 2006). Third, there is no evidence that bison preferentially used groomed roads during winter (Bjornlie and Garrott 2001; Bruggeman et al. 2006). Fourth, road segments used for travel corridors appeared to be overlaid on what were likely natural travel pathways, including narrow canyons and stream corridors (Gates et al. 2005; Bruggeman et al. 2009b). And fifth, bison use of travel corridors that include certain road segments would likely persist whether or not the roads were groomed (Gates et al. 2005; Bruggeman et al. 2009a).

Data on the bison population and its movements in the Yellowstone area prior to extensive hunting by humans and in the absence of OSVs are unavailable. Therefore, the vast majority of detailed information on bison was collected during the recent population expansion and in the presence of road grooming. Because bison migrate to lower ranges for improved forage, it is impossible to determine after the fact, and in the absence of a control population, what precise impact, if any, road grooming and winter use have on bison winter range expansion and population growth (Bruggeman et al. 2007, 2009a).

Though it is impossible to conclusively resolve these issues, the park has spent much of the past ten years studying the available data, in numerous studies (as described above) and previous winter use plans. Based on existing data, it does not appear that migration patterns are affected by OSV use. There is therefore no basis to limit visitation to just one park entrance. Limiting the visitation without such a basis

would not meet the purpose of this plan, since limiting motorized use, if it is otherwise appropriate, would deprive most park visitors of this opportunity for no reason. For these reasons, this alternative was dismissed from further consideration. These bison migration issues were also addressed in the 2011 Winter Use Plan/EIS. NPS is aware of no relevant changed circumstances or new information that would alter the analysis of these issues from the 2011 Winter Use Plan/EIS, and thus does not believe it needs to be analyzed again in this draft plan/SEIS.

CHANGE THE OPENING DATE OF SYLVAN PASS SO IT IS THE SAME AS THE REST OF THE PARK

The operation of Sylvan Pass has inherent safety concerns that are present when working in an avalanche zone. Recognizing the technical and logistical challenges associated with operating Sylvan Pass in the winter, the NPS coordinated with stakeholders to form the Sylvan Pass Working Group. Working cooperatively with this group, the opening and closing dates of Sylvan Pass were determined in order to maximize safety and provide enough time for the NPS to take care of the logistics for opening the pass. In order to change these dates, a separate planning process with the Sylvan Pass Working Group would be required, which is outside the scope of analysis for this draft plan/SEIS, and therefore it was not carried forward for further consideration.

PROHIBIT CROSS-COUNTRY SKIING ON ROADS GROOMED FOR OSV TRAVEL

During public scoping for this draft plan/SEIS, commenters suggested prohibiting cross-country skiing (or other forms of non-motorized recreation) on roads groomed for OSV travel.

The purpose of this draft plan/SEIS is to consider if motorized use is appropriate and if so, when and where it should be allowed in the interior of Yellowstone. The plan considers existing non-motorized uses in the park, such as cross-country skiing, to the extent of making sure that experience is still provided for and does not create visitor use conflicts with motorized uses. The draft plan/SEIS will analyze any such visitor use conflicts and related impacts. Beyond that consideration, however, wholly prohibiting cross-country skiing or other non-motorized uses on groomed roads would be outside the scope of this planning effort.

Moreover, the NPS feels that the suggested prohibition would restrict the range of visitor activities in the park, and would not be consistent with NPS management policies. Specifically, Section 8.2 of the NPS *Management Policies 2006* states that the NPS will "provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the parks." Non-motorized access is also discussed in Section 9.2 which states, "Depending on a park unit's size, location, resources, and level of use, the Service will, where appropriate, emphasize and encourage alternative transportation systems, which may include a mix of buses, trains, ferries, trams, and preferably non-motorized modes of access to and moving within parks. In general, the preferred modes of transportation will be those that contribute to maximum visitor enjoyment of, and minimum adverse impacts on, park resources and values." The NPS believes that maintaining the existing level of non-motorized access to Yellowstone in the winter is consistent with this management policy, and therefore limiting it was dismissed from further analysis in this draft plan/SEIS.

EXPAND NON-MOTORIZED USES IN YELLOWSTONE

During public scoping for this draft plan/SEIS, commenters suggested including additional provisions for non-motorized use such as establishing a yurt system, increasing the areas where non-motorized use should be allowed, and providing days where only non-motorized use is permitted.

The purpose of this draft plan/SEIS is to consider if motorized use is appropriate and if so, when and where it should be allowed in the interior of Yellowstone. The plan considers existing non-motorized uses in the park, such as cross-country skiing and snowshoeing, to the extent of making sure that experience is still provided for and does not create visitor use conflicts with motorized uses. Consideration of new non-motorized uses or infrastructure such as establishing a yurt system is outside the scope of this planning effort, and therefore was not carried forward for further analysis.

ALTER THE ROAD GROOMING SCHEDULE

The existing road grooming schedule is variable and is determined by on-the-ground conditions including road conditions, moisture, snow fall, and temperature. Because grooming can only occur during certain times based on these factors, adjusting grooming to a set schedule is not logistically possible and would not provide the needed results to increase visitor safety in the park, therefore, it was not carried forward for further analysis.

WEIGHT/PSI REQUIREMENTS FOR SNOWCOACHES

The 2011 Winter Use Plan/EIS considered elements that would restrict the pounds per square inch (psi) for snowcoaches as a mechanism to address rutting. However, this element was not carried forward for analysis in the draft plan/SEIS. The psi requirements discussed in the 2011 draft Winter Use Plan/EIS were developed from existing snowcoaches without on-the-ground field analysis. Without detailed study that evaluates variables including psi and snow conditions such as density, grooming regimes, track design and configuration, etc., it is difficult to determine actual effects of psi requirements on road conditions and the potential for rutting. The NPS acknowledges that larger snowcoaches leave ruts on the roads that present a safety hazard to other users. To address this concern, the NPS is dedicated to further understanding this issue and to develop mitigation strategies once this is studied further and determinants of rutting are positively identified. After further study should any size or weight restrictions for snowcoaches be necessary, these restrictions will be incorporated in the concessioners annual operating plans. Therefore, this element was not carried forward for further analysis.

ALLOW FOR PRIVATE SNOWCOACHES AND SNOWMOBILES

During public scoping for this draft plan/SEIS, commenters suggested that personal snowcoach use be allowed and/or that operators be able to donate the use of snowcoaches to non-profit groups without having those snowcoaches deducted from their daily allotment. The use of private snowcoaches, like the use of private snowmobiles, would create safety concerns for visitors and NPS staff. Winter conditions can be hazardous due to severe expected and unexpected storms and fast changing conditions. Private snowcoaches or snowmobiles may lack the necessary equipment needed in case of emergency. Elements in the alternatives that allow noncommercially guided snowmobiles addressed this concern through required training and required equipment. As detailed in appendix B, noncommercial guides would be required to possess the necessary safety equipment, including but not limited to a radio, tow rope, map, and first aid kit In addition, increased stress would be placed on park operations to address emergency response needs from untrained users, as well as increased road maintenance from additional snowcoaches. With regard to the donation of OSVs by operators, in order to account for the impacts of use, even donated OSVs must be considered part of the allotment. Therefore, allowing private snowcoaches or snowmobiles, other than those in noncommercially guided groups, would not meet visitor use or health and safety objectives for this draft plan/SEIS and were not carried forward for further analysis.

MANDATE USE OF E-FUELS

During public scoping for this draft plan/SEIS, commenters suggested that OSV be required to use of ethanol blended fuels (E-10). At this time, this alternative element is not feasible due to the lack of availability in the local area. As this technology becomes more available, the NPS will revisit this requirement and can incorporate it into concession contracts as necessary. Because it is not technically feasible at this time, this alternative was not carried forward for further analysis.

REVISE BAT REQUIREMENTS FOR SNOWMOBILES TO BE LESS RESTRICTIVE (FOR EXAMPLE, ADOPT EPA STANDARDS)

Currently Yellowstone snowmobile standards are more stringent than EPA standards. The EPA regulations are designed to meet nationwide needs, and do not necessarily provide the added level of protection needed to protect park resources and values. If the current standards were revised to meet EPA regulations, less protective measures would be in place. BAT requirements for Yellowstone allow for hydrocarbon level of 15 grams per kilowatt hour (g/kW-hr), but EPA requirements allow for 75 g/kW-hr. Likewise, for carbon monoxide, the NPS BAT requirements call for 120 g/kW-hr, but the EPA requirements allow for 275 g/kw-hr. In both cases, the EPA standards are more than double, and in the case of hydrocarbon five times more, than the NPS requirements. With limits increased to twice, or more, than currently permitted, impacts to air quality and visibility in the park would be expected to increase. Additionally, as stated under Section 1.8 of the NPS *Management Policies 2006*, the NPS "has an obligation to demonstrate and work with others to promote leadership in environmental stewardship." The NPS believes that setting BAT requirements above EPA standards (and not allowing lower standards) is consistent with this policy and meets the plan objectives to promote improvements in technologies for winter use. This alternative was dismissed because the anticipated impacts would not meet the objectives of this plan, as well as NPS policies.

ALLOW SNOWBIKES AND KITE-SKIING (AND OTHER USES)

Snowbikes are modified bicycles with large, low-pressure tires to facilitate use on groomed routes. Kite-skiing is similar to kite-surfing with the exception of using the surface snow and using snow skis. Kite-skiing in the park is currently prohibited under the 2010 Superintendent's Compendium (February 9, 2010) (url: http://www.nps.gov/yell/planyourvisit/upload/supt_compendium.pdf. This alternative is outside the scope of this draft plan/SEIS as it does not meet the purpose of managing motorized use. Although the draft plan/SEIS does consider non-motorized uses, it does so in the context of existing uses to ensure they can continue, without conflicting with motorized uses. Similarly, due to impacts on park resources and safety concerns, dog sledding, ski-joring, and snowplanes are outside the scope of this draft plan/SEIS. Although outside the scope of this planning effort, these uses may be considered at another time through a separate planning effort. The NPS believes that the use of snowbikes and kite-skiing could conflict with and/or create safety hazards along routes on which substantial numbers of snowmobiles and snowcoaches operate, such as the groomed roads in Yellowstone, which would not meet the health and safety objectives of this draft plan/SEIS. These uses may also create potential conflict with park resources, would have unknown impacts to park wildlife, and would not meet natural resource objectives. Within units of the national park system, bicycles may only be used on park roads, parking areas, and on routes designated for such use by special regulation. Opportunities for snowbiking and kite skiing do exist in the area, outside of the park.

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION IN THE 2011 WINTER USE PLAN/FINAL EIS

A number of alternatives and actions were considered but dismissed in the 2011 Winter Use Plan/Final EIS. For the following issues, NPS is aware of no relevant changed circumstances or new information that would alter the analysis of these alternatives and actions, and thus does not believe they need to be analyzed any further in this plan/SEIS.

- Establish a monorail system in Yellowstone
- Allow use of personal vehicles on plowed roads
- Options for management of Colter Pass to the east of Cooke City, Montana (US-212)
- Remove limits to OSV use and eliminate BAT requirements (return to 1983 regulations/"pre-managed era"
- Closure or additional management for the North to Northeast Entrance Road
- Open the interior of the park during spring/fall seasons
- Designate an area for off-trial or extreme snowmobiling
- Manage/limit OSV use on a daily basis, based on weather and other resource conditions.

For a detailed description of why these alternatives and actions were not carried forward, refer to the 2011 Winter Use Plan/Final EIS which can be found at the Yellowstone Winter Use website (http://www.nps.gov/yell/parkmgmt/winterusetechnicaldocuments.htm_).

HOW ALTERNATIVES MEET OBJECTIVES

As stated in chapter 1 of this document, all action alternatives selected for analysis must meet all objectives to a large degree. The action alternatives must also address the stated purpose of taking action and resolve the need for action; therefore, the alternatives were individually assessed in light of how well they would meet the objectives for this draft plan/SEIS, which are stated in chapter 1 of this document. Alternatives that did not meet the objectives were not analyzed further (see the "Alternative Elements Considered but Dismissed from Further Consideration" section in this chapter).

Table 8 is a summary of alternative elements. Table 9 compares how each of the alternatives described in this chapter would meet the plan objectives. Chapter 4 of this document describes the effects of each alternative on each impact topic. These impacts are summarized in table 10. Tables 8–10 are included at the end of this chapter.

CONSISTENCY WITH THE PURPOSES OF NEPA

The NPS requirements for implementing NEPA include an analysis of how each alternative meets or achieves the purposes of NEPA, as stated in sections 101(b) and 102(1). CEQ Regulation 1500.2 establishes policy for federal agencies' implementation of NEPA. Federal agencies shall, to the fullest extent possible, interpret and administer the policies, regulations, and public laws of the United States in accordance with the policies set forth in NEPA (sections 101(b) and 102(1)); therefore, other acts and NPS policies are referenced as applicable in the following discussion.

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

   All of the alternatives proposed would manage OSV use in a manner to best protect the resources, but the degree to which they accomplish this goal would vary. Alternative 1 would meet the four resource related objectives (wildlife, soundscapes, air, and wilderness) to a large degree because visitor OSV use would no longer be permitted within the interior of Yellowstone. The absence of visitor OSV use would result in a near absence of air and sound emissions, as well as disturbance to wildlife. Alternative 1 would most fully meet the purpose of fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations, by providing most of the interior of the park free of air and noise emissions, as well as wildlife disturbance, during the harsh winter conditions.

   Alternatives 2, 3, and 4 would allow OSV use in the park, but at levels that are near or below current use levels. Wildlife, air, and sound monitoring, as well as modeling conducted for this draft plan/SEIS, has shown that although impacts to these resources would occur, they would be well below any regulatory standard and within NPS *Management Policies 2006*. Monitoring and modeling has also shown that these OSV use levels could occur, and the resources would be preserved for succeeding generations. These alternatives would include OSV management measures such as commercially guided OSV use, BAT snowmobiles, and the conversion to BAT snowcoaches, which would further act to preserve park resources. Alternative 4 would allow for a small amount of noncommercially guided use, up to four trips a day with five vehicles in each group. All members of the noncommercially guided group operating a snowmobile would be required to complete the Yellowstone Snowmobile Education Certification Program, receive an on-site orientation session with a ranger, as well as carry the necessary safety equipment. Although the potential exists for non compliance with rules and regulations from noncommercially guided groups, Yellowstone law enforcement would be present to ensure compliance. Should there be a high level of non-compliance from these groups, the noncommercially guided program would be re-evaluated through adaptive management. Alternative 4 also has the potential to increase the number of transportation events over current conditions with improved technologies. These increases would only occur if additional established standards were exceeded, and the increase would result in no additional impacts to park resources.

2. Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.

   All alternatives meet this purpose to some degree because the park is a safe visitor destination that is both esthetically and culturally pleasing. The action alternatives (alternatives 2, 3, and 4) increase safety to a degree by requiring OSV users in the park to travel with a commercial guide who has been trained in addressing fast changing winter conditions, has the equipment to quickly communicate with the park and others in case of an emergency, and is required to carry emergency equipment. Under alternative 4, the limited groups of noncommercial guides would also be required to attend training and to carry such equipment (see appendix B). These alternatives also require BAT for snowmobiles and the development of BAT for snowcoaches, which would reduce air and noise emissions that can be hazardous to employee and visitor health. Alternative 4 provides for improved BAT for snowmobiles and incentives for developing quieter snowmobiles and snowcoaches. For alternatives 2 and 4, the opening of Sylvan Pass would require NPS to conduct avalanche control activities in this area. There are inherent risks to operating in an active avalanche area, and for this reason, these alternatives would only meet this purpose to some degree. Alternative 3 would include the same OSV management measures as the other action alternatives, but Sylvan Pass would be closed to OSV use and the NPS would not be

required to conduct avalanche control operations in that area. Because this risk would be reduced, alternative 3 would meet this purpose to a large degree.

Alternative 1 would, on the whole, reduce risks associated with OSV use, even OSV use that is managed such as in the case in Yellowstone. Whereas these risks would be reduced, non-motorized users in the interior of the park would face increased risks from the absence of OSVs or other park facilities to assist in case of emergency. This use, however, especially in the interior of the park, is expected to be low, therefore alternative 1 meets this purpose to a large degree.

3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

   All of the action alternatives offer a wide range of visitor use opportunities, including snowmobile use (which would be phased out under alternative 3) and snowcoach use. However, the type and diversity of winter use allowed under a particular alternative could provide for a variety of different visitor experiences in the park, or lead to resource degradation or risks to health and safety with higher levels of use. Alternative 2 allows for levels of use that are similar to recent years, which would provide for a variety of uses and resource protection. Based on monitoring results of current use levels, visitors would have various opportunities for use and resources would still be offered protection. Alternative 3 would reduce overall OSV use to 120 snowcoaches by the end of the 3-year transition period (winter season 2020/2021). The lower level of OSV use could result in less disturbance to resources, but because alternative 3 would remove one mode of visitor access, it would only meet this purpose to a moderate degree. Alternative 4 would allow for use similar to current levels, with 110 transportation events (compared to the average of 123 that currently are permitted). This alternative would also allow for a potential increase in use should technology improve and OSVs become quieter. The addition of a limited amount of noncommercially guided use under alternative 4 would provide another visitor experience. As detailed in appendix B, this program would be administered in a way that would provide benefits to visitor use and experience without degradation, risk of health or safety, or other undesirable and unintended consequences.

   Alternative 1 would allow for non-motorized use within the park, but would not allow for visitor OSV use in the interior of the park. Due to the distance and harsh weather conditions, many visitors would not be able to reach the interior of Yellowstone, and features like Old Faithful, without the use of OSV; therefore, alternative 1 meets this purpose to only some degree.

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.

   Because none of these alternatives would result in impacts to cultural or historic resources that would exceed minor, these topics were dismissed from further analysis in this draft plan/SEIS. Overall, because any impacts to cultural or historic resources would not exceed minor, all alternatives would preserve important historic and cultural aspects of our national heritage in the long-term and would meet this purpose to a large degree. For natural resources, all alternatives would meet objectives to a moderate degree. However, alternative 4 would more fully meet these objectives because the amount of transportation events would be reduced by approximately 10 percent compared to alternatives 2 and 3. Alternative 4 would allow for use similar to current levels, with 110 transportation events as compared to the average of 123 that currently are permitted (alternative 2) or the 120 that would be permitted under alternative 3.

   As discussed under criteria 3, alternatives 2 and 4 would best support diversity and variety of individual choice (to a large degree) because of the multiple options provided for experiencing the park in the winter. All of the action alternatives would provide some access to the park,

including OSV access. Alternative 1 (meeting the criteria to some degree) would limit the variety of choice by discontinuing visitor OSV use in the interior of the park.

5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

   Balancing population and resource use under this draft plan/SEIS would include protecting the resources unimpaired for the enjoyment of present and future generations and providing access for visitors to experience the natural resources of the park. NPS *Management Policies 2006* states that the enjoyment contemplated by the Organic Act is broad; it is the enjoyment of all the people of the United States and includes enjoyment both by people who visit parks and by those who appreciate them from afar. It also includes deriving benefit (including scientific knowledge) and inspiration from parks, as well as other forms of enjoyment and inspiration. For all alternatives, except alternative 1, in which visitors would continue to have opportunities to enjoy from afar through programs such as the Old Faithful webcam, and well as information and literature posted online. As described in this chapter, alternatives 2, 3, and 4 would provide for OSV use in the park, with management measures (BAT for all OSV and guiding requirements) and use levels (at or below recent levels) that would provide a level of protection to park resources to allow for their future enjoyment. Likewise, alternative 1, which would not allow for OSV use, would also protect park resources. All of the alternatives evaluated would meet this purpose.

6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

   For reasons discussed above, the action alternatives (alternatives 2, 3, and 4) would promote enhancing renewable resources such as air quality and soundscapes in varying degrees because all alternatives require the use of BAT for snowmobiles and the development and implementation of BAT for snowcoaches. Under alternative 4, by using quieter OSV technologies, operators would be provided the opportunity to increase use, while minimizing impacts to park resources. The second purpose, "approach the maximum attainable recycling of depletable resources," is less relevant to the development of this winter use plan because it relates to "green" building or management practices. There would be little construction related to any alternatives so this purpose would not apply.

   As discussed in chapter 1 of this document, each of the alternatives would require the park to continue to operate under the energy use guidelines and requirements stated in the NPS *Management Policies 2006*, Executive Order 13123, Greening the Government through Effective Energy Management; Executive Order 13031, Federal Alternative Fueled Vehicle Leadership; Executive Order 13149, Greening the Government Through Federal Fleet and Transportation Efficiency; and the 1993 NPS Guiding Principles of Sustainable Design. Therefore each alternative would fully meet this purpose.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the Department of the Interior NEPA Regulations (43 CFR Part 46) and CEQ's Forty Questions, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (section 101(b)) (516 DM 4.10). The CEQ's Forty Questions (46 FR 18026) (Q6a) further clarifies the identification of the environmentally preferable alternative stating, "this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources."

Alternative 1, the no-action alternative, was identified as the environmentally preferable alternative because public OSV use would no longer be permitted within the park. With winter use limited to minimal administrative OSV use, there would be the least amount of impact on the biological and physical environment within the park. As noted in table 9, the no-action alternative meets the objectives related to resources (wildlife, air, sound, and wilderness) to the greatest degree due to the lack of recreational OSV use. By best meeting these objectives, the no-action alternative would cause the least amount of damage to the biological and physical environment. Although administrative OSV use and non-motorized use would occur, the use levels would be low and impacts to resources would be minimal. The no-action alternative does provide for minimal administrative use to "winter keep" structures in the interior of the park, therefore it would also protect and preserve the historic and cultural resources.

NATIONAL PARK SERVICE PREFERRED ALTERNATIVE

The "agency's preferred alternative" is the alternative that the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. To identify the preferred alternative, discussions were held among NPS managers, scientists, and environmental specialists regarding the alternatives analyzed in the Draft Supplemental EIS. The structure of the discussions followed guidance from the Council of Environmental Quality, which defines the preferred alternative as the alternative, "which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors" (Question 4a of the Council on Environmental Quality's 'Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations (1981).

The deliberations considered the statutory mission of the NPS and Yellowstone National Park, the results of the impact analysis presented in the Draft Supplemental EIS, how well each alternative meets the purpose, need and objectives of the Draft Supplemental EIS, and the public and agency comments received on winter use during this and previous planning processes.

Alternative 4 was identified as the preferred alternative due to its potential to make the park cleaner and quieter than it has been in past winter seasons, while at the same time allowing for increases in park visitation. Rather than focusing solely on numbers of OSVs allowed in the park, alternative 4 focuses on the impacts that result from OSV use, and recognizes that impacts to wildlife and park visitors are usually experienced based on groups of vehicles, rather than each individual vehicle. The analysis in the Draft Supplemental EIS shows that a group of 7 snowmobiles and one snowcoach have comparable impacts to park resources such as air, sound and wildlife.

Through its implementation of BAT for snowcoaches and its new standards for snowmobile BAT, alternative 4 would promote advances in technology, and because it allows for both snowmobile and snowcoach use, it allows for a variety of visitor experiences. Alternative 4 also provides for greater operator flexibility because it allows the operator to decide whether to use his or her allocation of transportation events on snowmobiles or snowcoaches.

The NPS will consider comments on this Draft Supplemental EIS and may modify or adjust the preferred alternative accordingly. Any modifications or adjustments will be disclosed in the published final Supplemental EIS. A Record of Decision will follow the final Supplemental EIS and will be made available to the public.

TABLE 8: SUMMARY OF ALTERNATIVE ELEMENTS

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
General Description	Once the 2009 interim regulation expires (after the 2010/2011 season) there would be no regulation in its place and OSV use would be no longer permitted. Administrative OSV use would continue as needed. Visitors could ski or snowshoe into the park.	OSV use would continue at levels described under the 2009 to 2012 interim regulations – up to 318 snowmobiles and up to 78 snowcoaches per day.	OSV access into the park would transition to BAT compliant snowcoaches. The transition to snowcoaches would begin in the 2017/2018 winter season, when all snowcoaches must meet BAT requirements. Snowcoaches would replace snowmobiles within a 3-year period (by the 2020/2021 winter season).	Alternative 4 would allow for increases in visitation while reducing transportation-generated noise and air impacts. OSV access to the park would be managed by transportation events. A total of 110 transportation events would be allowed each day. Operators would have the flexibility to allocate their transportation events between snowmobiles and snowcoaches, with up to 50 events available for snowmobile events daily. If OSVs meet enhanced BAT there is the potential for increased use. Noncommercial guiding would be included under this alternative.
Elements Related to Snowmobile Use				
Daily Snowmobile Limits (with allocations by entrance)	n/a	Up to 318 snowmobiles per day (Actual current average is about 191 per day). Entrance allocations (by number of snowmobiles): • West – 160 • South – 114 • East – 20 • North – 12 • Old Faithful – 12	Up to 318 snowmobiles per day through 2017/2018 winter season. Entrance allocations (by number of snowmobiles): • West – 160 • South – 114 • East – 20 • North – 12 • Old Faithful – 12	110 transportation events would be allowed each day, with no more than 50 transportation events from snowmobiles. A transportation event would allow one snowcoach or one group of snowmobiles, with an average group size of 7 snowmobiles. (Each group of snowmobiles may have up to 10 vehicles, but must average a group size of 7 snowmobiles over the course of a winter season.) If snowmobiles meet enhanced BAT the alternative allows for a potential increase in the number of vehicles per transportation event – from a seasonal average of 7 to an average of 8 snowmobiles per group. Maximum allowed snowmobile transportation event entrance allocations (by gate): • West – 23 • South – 16 • East – 3 • North – 2 • Old Faithful – 2 In addition, four noncommercially guided events, with up to 5 snowmobiles per group, would be permitted each day, one from each entrance.
Variable snowmobile numbers	n/a	Daily snowmobile levels would be fixed for the season. No variation would occur.		Snowmobile numbers could vary daily, depending on how operators use their transportation events. Up to 50 daily transportation events could be allocated to snowmobiles.
Variable entrance allocations	n/a	Entrance allocations would be fixed (may not be shared between entrances).		The total number of transportation events at each gate would be fixed, but transportation events could be traded between operators. This would not apply to noncommercially guided snowmobile groups.
Snowmobile Guide Requirements, including maximum group size (if applicable)	n/a	100% commercially guided. Group size (including guide's snowmobile):10		100% guided – commercial and noncommercial guiding allowed. Group size for commercial operations (including guide):10 maximum, average of 7 averaged over a season. Four transportation events (one per gate) of up to 5 snowmobiles each would be reserved for noncommercially guided access. Each noncommercial guide would be allowed to lead up to 2 groups per season and permits for this opportunity would be allocated via an on-line lottery system.

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
BAT Requirements for Snowmobiles	n/a	BAT required for snowmobiles. Starting in the 2017/2018 season, the BAT sound standards for snowmobiles would be reduced from 73 dBA to 71 dBA.	No changes to BAT for sound standards because snowmobiles would be phased out.	BAT would be required for commercially and noncommercially guided snowmobiles. Initially, the BAT sound standard for all snowmobiles would be 73 dBA and the carbon monoxide standard would be 120 g/kW-hr. Starting in the 2017/2018 season, the BAT sound standard would be reduced to 67 dBA and the carbon monoxide standard would be reduced to 90 g/kW-hr.
Cost of snowmobile use	n/a	Park entrance fee. Cost of snowmobile guide and rental.	Park entrance fee. Cost of snowmobile guide and rental.	Park entrance fee (for commercially and noncommercially guided groups). Cost of snowmobile guide and rental. BAT snowmobile rental fees. Lottery fees for noncommercially guided groups.
Elements Related to Snowcoach Use				
Daily Snowcoach Limits (with allocations by entrance)	n/a	Up to 78 snowcoaches per day. Entrance allocations (by number of snowcoaches): • West – 34 • South – 13 • East – 2 • North – 13 • Old Faithful – 16	Up to 78 snowcoaches per day initially, allocated by entrance the same as in alternative 2. Once all snowcoaches meet BAT, increase to up to 120 BAT snowcoaches per day (with a corresponding decrease in snowmobiles over a 3-year period as snowcoach numbers increase). Entrance allocations after transition (by number of snowcoaches): • West – 62 • South – 10 • East – 0 • North – 19 • Old Faithful – 29	A transportation event would initially equal one snowcoach or one group of snowmobiles (average of 7 snowmobiles in one group, not to exceed 10, averaged over the season). The number of snowcoaches per event could increase from 1 to 2 over time if each snowcoach meets enhanced BAT (each snowcoach emits less than 71 dBA of sound). Snowcoach entrance allocations (by transportation events) if all 50 snowmobile events are used: • West – 26 • South – 10 • East – 2 • North – 10 • Old Faithful – 12 Snowcoach entrance allocations (by transportation events) if none of the commercial snowmobile events are used (106 events, with 4 events reserved for noncommerically guided snowmobile use): • West – 47 • South – 17 • East – 2 • North – 17 • Old Faithful – 23
Variable snowcoach numbers	n/a	Daily snowcoach levels would be fixed for the season. No variation would occur.		Snowcoach numbers could vary daily, depending on which vehicles the operators allocate their transportation events to. Up to 50 transportation events may be allocated to groups of snowmobiles daily. If all 50 snowmobile allocations are used, 60 allocations would be available for snowcoach use. If no snowmobile allocations are used, 106 snowcoach transportation events would be available to operators.
Variable entrance allocations	n/a	Entrance allocations would be fixed (may not be shared between entrances).		Entrance allocation would be flexible, based on the demand at the three snowcoach entry locations (i.e., sharing among operators at a single entrance).
Snowcoach Guide Requirements	n/a	Common to all action alternatives: snowcoach entry by commercial guide only.		

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Snowcoach BAT requirements	n/a	BAT would be developed and implemented for snowcoaches by the 2017/2018 season. BAT for snowcoaches would require sound emissions to be less than 75 dBA.		BAT would be developed and implemented for snowcoaches by the 2017/2018 season. BAT for snowcoaches would require sound emissions to be less than 75 dBA. With enhanced BAT, two snowcoaches would be allowed in a group if both snowcoaches have sound emission of 71 dBA or less.
Wheeled Vehicle Access – Common to all alternatives: Wheeled vehicle access would continue along the road between Mammoth Hot Springs and Cooke City. No other roads would be plowed for wheeled vehicle use.				
Other/General Elements				
Road Grooming	Allow for the minimal road grooming needed to maintain administrative access. Sylvan Pass would not be maintained.	Continue road grooming. Manage Sylvan Pass in accordance with the Sylvan Pass Working Group agreement.	Continued road grooming would be needed to maintain snowcoach and administrative access. Sylvan Pass would be closed to vehicle traffic and would not be maintained.	Continue road grooming. Manage Sylvan Pass in accordance with the Sylvan Pass Working Group agreement.
Zoning –Temporal and Spatial	n/a	Continue temporal and spatial zoning of some side roads (e.g., snowcoaches only in the morning, snowmobiles and snowcoaches in the afternoon).	The east side of the park would only be available for non-motorized use once transition to snowcoaches is complete. OSV use would not be permitted from the east entrance to the Fishing Bridge Developed Area.	Continued temporal and spatial zoning of some side roads (e.g., snowcoaches only in the morning, snowmobiles and snowcoaches in the afternoons).
Opportunities for non-motorized recreation use	Park would be open for skiing and snowshoe access. Most of the park would be considered “backcountry” for this type of use.	Continue to groom 35 miles of secondary park roads for cross-country skiers and snowshoers. Use will be permitted subject to Winter Severity Index.		
Dates/Length of Winter Season	The season would start when accumulation of snow allows for non-motorized use. It would continue into March, depending on snow levels and any closures for wildlife management and spring road plowing).	Common to all action alternatives: No change in current dates for motorized and non-motorized winter use in the park.		
Estimated number of daily vehicle passengers (excludes Mammoth to Cooke City) Maximum numbers assume 2 people per snowmobile and 12.3 per snowcoach. Average numbers assume 1.4 people per snowmobile and 8 per snowcoach.	Zero OSVs	Maximum • Snowmobile = 636 • Snowcoach = 959 • Total = 1,595 Average • Snowmobile = 445 • Snowcoach = 624 • Total = 1,069	Maximum • Snowmobile passengers = 636 (0 after phaseout) • Snowcoach passengers = 959 (1,476 after phaseout) • Total = 1,519 (1,476 after phaseout) Average • Snowmobile passengers = 445 (0 after phaseout) • Snowcoach passengers = 624 (960 after phaseout) • Total = 1,069 (960 after phaseout)	See “Table 8a: Alternative 4 Visitation Levels.”
Transition Period (when limits under a new regulation, that are different from current limits, would take effect)	The 2009 to 2012 interim regulations expired. No transition period.	The 2009 to 2012 interim regulations would continue. No transition period.	The 2009 to 2012 interim regulations would continue until the 2017/2018 season, after which time a 3-year phase out of snowmobiles would occur.	There would be a two-season transition period to prepare for implementation of the new winter use plan. Provisions of the 2009 to 2012 interim regulations would continue during this transition.
Adaptive Management Program	No adaptive management program would be implemented.	Adaptive management would be implemented as outlined in appendix C.		

TABLE 8A: ALTERNATIVE 4 VISITATION LEVELS

Scenario	Snowmobile Events Used	# of Commercial Events	Group size of Commercial Events (not including guide)	# of Non-commercially guided events	Group size of Noncommercially guided events (includes noncommercial guide)	Maximum snowmobile visitors for that group size	Average number of snowmobile visitors for that group size	Snowcoach Events Used	# of snowcoaches per event	Maximum number of snowcoach visitors	Average number of snowcoach visitors
What would a day look like where the maximum number of snowmobile events are used, all of which would reach the maximum group size of 10?	50	46	9	4	5	940	658	60	1	738	480
What would an average day look like where the maximum number of snowmobile events are used, with a group size of 7?	50	46	6	4	5	640	448	61	1	738	480
What would a day look like were no commercially guided transportation events are used for snowmobiles, and all snowcoach events are used?	4	0	0	4	5	40	28	106	1	1304	848
Enhanced BAT: What would a day look like where all OSV met enhanced BAT and the maximum number of snowmobile events are used, all of which would reach the maximum group size of 10?	50	46	9	4	5	940	658	60	2	1476	960
Enhanced BAT: What would an average day look like under enhanced BAT, where the maximum number of snowmobiles was used, with an average of 8?	50	46	7	4	5	740	518	60	2	1476	960
Enhanced BAT: What would a day look like were no commercially guided transportation events are used for snowmobiles, and all enhanced BAT snowcoach events are used?	4	0	0	4	5	40	28	106	2	2607	1696

* Maximum numbers assume 2 people per snowmobile and 12.3 per snowcoach. 12.3 is based on the average maximum capacity of the existing fleet. Average numbers assume 1.4 people per snowmobile and 8 per snowcoach, based on average visitation over the past three winter use seasons.

TABLE 9: HOW ALTERNATIVES MEET OBJECTIVES

Objective	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Visitor Use, Experience, and Accessibility				
Provide the opportunity for visitors to experience and be inspired by Yellowstone's unique winter resources and values while ensuring resource protection.	Meets objective to some degree because the interior of the park would be closed to OSV use, greatly limiting the visitors that can experience this area. The park would continue to provide a virtual experience for all, including administration of the website to provide understanding and appreciation of the park's winter resources to those unable to visit the park. Visitors could continue to experience the park virtually through the park's website.	Meets objective to a large degree, because visitors would be able to experience the interior of the park with OSVs from all entrances. Daily use limits of 318 snowmobiles and 78 snowcoaches would be similar to current use levels, which monitoring has shown allow for resource protection. Visitors could continue to experience the park virtually through the park's website and webcam at Old Faithful.	Meets objective to a moderate degree because visitors would be provided the opportunity to experience the interior of the park using OSV; however, after the transition period, visitors would only be able to enter the park via snowcoach. This alternative would reduce overall OSV traffic, reduce them below current levels, and ensure resource protection. Visitors could continue to experience the park virtually through the park's website and webcam at Old Faithful.	Fully meets objective because visitors would be able to experience the interior of the park using OSVs from all entrances. In addition, provisions are made to allow for increases in use, while reducing or minimizing impacts to park. The addition of noncommercial guiding would provide an additional use opportunity. Visitors could continue to experience the park virtually through the park's website and webcam at Old Faithful.
Increase visitor understanding and appreciation of the park's winter resources.	Meets objective to some degree because the interior of the park would be closed to OSV use, greatly limiting the visitors that can experience this area, but the park would continue to provide a virtual experience for all, including administration of the website to provide understanding and appreciation of the park's winter resources to those unable to visit the park.	Fully meets objective because visitors have the opportunity to visit the interior of the park and view Yellowstone in the winter, wildlife, and the park's unique geothermal features. In addition, the park would continue to provide a virtual experience for all, including administration of the website and web cam at Old Faithful to provide understanding and appreciation of the park's winter resources to those unable to visit.	Fully meets objective because visitors have the opportunity to visit the interior of the park and view Yellowstone in the winter, wildlife, and the park's unique geothermal features. In addition, the park would continue to provide a virtual experience for all, including administration of the website and web cam at Old Faithful to provide understanding and appreciation of the park's winter resources to those unable to visit.	Fully meets objective because visitors have the opportunity to visit the interior of the park and view Yellowstone in the winter, wildlife, and the park's unique geothermal features. In addition, the park would continue to provide a virtual experience for all, including administration of the website and web cam at Old Faithful to provide understanding and appreciation of the park's winter resources to those unable to visit.
Provide access for winter opportunities in the park that are appropriate and universally accessible.	Meets objective to some degree because transportation to the interior of the park would no longer be available, but non-motorized uses and virtual visitation would continue.	Meets objective to a large degree because access to winter opportunities in the interior of the park would include both snowmobile and snowcoach use. Access would be provided for a wide range of visitors.	Meets objective to a moderate degree because access to winter opportunities in the interior of the park would include both snowmobile and snowcoach use, with the eventual phase out of snowmobiles. The lack of snowmobile access would reduce the winter opportunities available. Access would be provided for a wide range of visitors.	Meets objective to a large degree because access to winter opportunities in the interior of the park would include both snowmobile and snowcoach use. Access would be provided for a wide range of visitors.
Resources				
Wildlife: Manage winter use so that it does not disrupt the winter wildlife ecology, including sensitive species.	Meets objective to a large degree because wildlife in the interior of the park, including sensitive species, would no longer have interactions with recreational OSVs. Interactions with non-motorized users would continue on a limited basis.	Meets objective to a moderate degree because wildlife, including sensitive species, in the interior of the park have the potential to be displaced by the use of OSVs. Winter use levels would be similar to current levels, which would minimally disrupt studied wildlife species at the population level.	Meets objective to a moderate degree because wildlife in the interior of the park, including sensitive species, may be displaced by the use of OSVs. The number of OSVs in the park would be less than current levels once the transition to snowcoaches is complete, which would minimally disrupt studied wildlife species at the population level.	Meets objective to a moderate degree because wildlife in the interior of the park, including sensitive species, have the potential to be displaced by the use of OSVs. Winter use levels would be similar to current use, which would minimally disrupt studied wildlife species at the population level. Managing by transportation events would provide for fewer intervals of use and fewer disturbance events for wildlife within the park. Because there would be approximately 10% fewer transportation events under alternative 4 than alternatives 2 and 3, this alternative meets this objective to a greater degree than the other action alternatives.
Sound: Manage winter use to protect naturally occurring background sound levels and to minimize loud noises.	Meets objective to a large degree because minimal OSV use (administrative use only) would occur in the interior of the park.	Meets objective to a moderate degree because OSV use would occur in the interior of the park, but at levels that still allow for times of natural quiet.	Meets objective to a moderate degree because OSV use would occur in the interior of the park, but at levels that still allow for times of natural quiet.	Meets objective to a moderate degree because OSV use would occur in the interior of the park, but at levels that still allow for times of natural quiet. Because there would be approximately 10% fewer transportation events under alternative 4 than alternatives 2 and 3, and because managing by transportation events would provide for more intervals of quiet within the park, this alternative meets this objective to a greater degree than the other action alternatives.

Objective	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Air Quality: Manage winter use to minimize impacts to resources that may be affected by air pollution including visibility and aquatic systems.	Meets objective to a large degree because minimal OSV use (administrative use only) would occur in the interior of the park and air emissions would be at very low levels.	Meets objective to a moderate degree because OSV use, and air emissions from that use, would continue in the interior of the park. Levels of use would be similar to current use levels, which monitoring has shown to be below all regulatory standards.	Meets objective to a moderate degree because OSV use, and air emissions from that use, would continue in the interior of the park. Levels of use would be similar to current use levels, which monitoring has shown to be below all regulatory standards.	Meets objective to a moderate degree because OSV use, and air emissions from that use, would continue in the interior of the park. Levels of use would be similar to current use levels, which monitoring has shown to be below all regulatory standards.
Wilderness: Manage winter use to protect wilderness character and values.	Meets objective to a large degree because minimal OSV use (administrative use only) would occur in the interior of the park.	Meets objective to a moderate degree because OSV use would occur in the interior of the park; however, modeling and observations in the park have shown that disturbances, specifically noise, would be limited in time and duration.	Meets objective to a moderate degree because OSV use would occur in the interior of the park; however, modeling and observations in the park have shown that disturbances, specifically noise, would be limited in time and duration.	Meets objective to a moderate degree because OSV use would occur in the interior of the park; however, modeling has shown that disturbances, specifically noise, would be limited in time and duration. Management by transportation events would further limit the duration of disturbances. Because there would be approximately 10% fewer transportation events under alternative 4 than alternatives 2 and 3 (which would average 123 and 120 transportation events, respectively), this alternative meets this objective to a greater degree than the other action alternatives.
Health and Safety				
Seek to manage access in the winter for the safety of all visitors and employees, including limiting impacts from emissions, noise, and known hazards.	Meets objective to a large degree because recreational OSV use would not occur in the interior of the park. Emissions, noise, and known hazards would be reduced because the interior of the park would be closed to the public, as would Sylvan Pass; however, non-motorized use (skiing and snowshoeing) would be permitted in the interior of the park, resulting in known hazards from harsh winter conditions.	Meets objective to some degree as OSV and non-motorized use would be permitted in the interior of the park, following guidelines and regulations to promote the health and safety of visitors such as hours of operation, BAT and guiding requirements. Visitors would have the potential to be exposed to emissions, noise, and known hazards. Additionally, Sylvan Pass would continue to operate and workers would continue to be exposed to hazardous conditions inherent in conducting operations in an avalanche prone area.	Meets objective to a large degree because OSV and non-motorized use would be permitted in the interior of the park, following guidelines and regulations to promote the health and safety of visitors such as hours of operation, BAT and guiding requirements. Visitors would have the potential to be exposed to emissions, noise, and known hazards. Sylvan Pass would not continue to operate, greatly reducing the risk to park staff that would no longer be exposed to the hazardous conditions inherent in conducting operations in an avalanche prone area.	Meets objective to some degree as OSV and non-motorized use would be permitted in the interior of the park, following guidelines and regulations to promote the over the health and safety of visitors such as hours of operation, BAT and guiding requirements. Visitors would have the potential to be exposed to emissions, noise, and known hazards. Additionally, Sylvan Pass would continue to operate and workers would continue to be exposed to hazardous conditions inherent in conducting operations in an avalanche prone area.
Coordination and Cooperation				
Improve coordination and communication regarding winter use management with park partners, gateway communities, and other stakeholders.	Fully meets objective because the park would continue to coordinate and communicate with park partners, gateway communities, and other stakeholders.			
Park Management/Operations				
Develop and implement an adaptive management program that includes monitoring the condition of resources.	Meets objective to a large degree because the adaptive management program under no action would differ from the action alternatives. It would focus on monitoring park resources in the near absence of OSVs and understanding if changes to limited administrative OSV use and non-motorized uses are needed.	Fully meets objective because adaptive management would occur under these alternatives.		
Promote advances of vehicle technology (OSVs) that will reduce impacts and facilitate continuous improvement of technology over time.	Does not meet objective because OSVs would not be allowed into the park, reducing the incentive for the development of new technology.	Meets objective to a moderate degree because BAT requirements would continue to be implemented for snowmobiles and would further be developed and implemented for snowcoaches. No additional steps would be taken to promote technology.	Meets objective to a moderate degree because BAT requirements would continue to be implemented for snowmobiles and would further be developed and implemented for snowcoaches.	Meets objective to a large degree because BAT requirements would continue to be implemented for snowmobiles and would further be developed and implemented for snowcoaches. In addition, incentives to improve environmental performance of OSVs thorough enhanced BAT would reward innovation and commitment to lower impact OSVs and allow for increased use, without impacting park resources, should these reductions occur.

Objective	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Provide for winter use that is consistent with the park priority to provide critical visitor services at core locations.	Meets objective to some degree because services in the northern area of the park (Mammoth) would continue to be provided. Due to lack of OSV access, services in the interior of the park would not continue.	Meets objective to a large degree because services in the northern area of the park (Mammoth) would continue to be provided and OSV use would allow for the continuation of services in the interior of the park in the winter.		

TABLE 10: IMPACT SUMMARY

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Wildlife and Wildlife Habitat, including Rare, Unique, Threatened, or Endangered Species, and Species of Concern				
Bison/Elk	Based on an analysis of the available data and literature regarding bison and elk in the greater Yellowstone area, the no-action alternative would result in short and long-term negligible adverse impacts on bison and elk in the park, because OSV use would be limited to minimal administrative use and non-motorized use would be more limited, resulting in no observable impacts. Human activity during the winter months would be reduced. Cumulative impacts under alternative 1 would be long-term minor to major adverse. Alternative 1 would contribute minimally to cumulative impacts because there would be no visitor OSVs in the park.	Alternative 2 would allow for use levels similar to the 2009 to 2012 interim regulations, with BAT requirements, guiding regulations, speed limits, and restrictions on OSV access to park roads only. Continued monitoring and assessment would allow for additional restrictions to be established should impacts greater than those predicted in this draft plan/SEIS are observed. Thus, overall impacts on bison and elk under alternative 2 would be short and long-term minor to moderate adverse. Cumulative impacts would be long-term minor to major adverse, of which alternative 2 would contribute minimally.	The existing data suggest that while intensity and amount of impact to elk and bison from snowmobiles and snowcoaches differ, overall the impact of these OSVs on elk and bison is comparable. Thus, restricting OSVs to just snowcoaches would not eliminate adverse effects on wildlife. However, the available literature on bison and elk indicate that lower OSV numbers reduce wildlife displacement, behavior or physiology-related energy costs, and the potential for adverse demographic impacts, resulting in short and long-term minor to moderate adverse impacts. Cumulative impacts on bison and elk under alternative 3 would be long-term minor to major adverse, to which alternative 3 would contribute only a small amount.	Alternative 4 would allow for use levels similar to those permitted under the 2009 to 2011 interim rules, with an approximately 10% reduction in the number of transportation events. Should all OSVs meet enhanced BAT group sizes would increase, but the number of transportation events would stay the same. The allowance for up to four noncommercially guided snowmobile groups per day is not expected to increase in and displacement responses by bison and elk. Continued monitoring and assessment would allow for additional restrictions to be established should impacts greater than those predicted in this draft plan/SEIS be observed. Thus, overall impacts under alternative 4 would be short- and long-term minor to moderate adverse. Cumulative impacts would be long-term minor to major adverse, of which alternative 4 would contribute minimally.
Lynx/Wolverine	Alternative 1 would result in short- and long-term negligible adverse impacts on lynx and wolverines in the park because OSV use would be limited to minimal administrative use and there would be no observable impacts, with long-term beneficial impacts from the removal of human presence. Cumulative impacts of alternative 1 would be long-term minor to major adverse, of which alternative 1 would contribute minimally, if at all.	This alternative would maintain and allow OSV use at Sylvan Pass, the area of the park where human-wolverine interactions would be most likely to occur. However, daily entrance limits restrict the east entrance to just 20 snowmobiles and two snowcoaches per day, (approximately five transportation events), resulting in little use in this area, and minimal disturbance to wolverines. Restrictions on movements of lynx or wolverines during the winter months due to the presence and use of OSV routes in other areas of the park may limit reproductive success, dispersal, and overall genetic sustainability of the species, but such impacts are difficult to predict. Therefore, impacts predicted under this alternative would be short- and long-term minor adverse, with the potential for moderate adverse impacts if lynx and wolverines travel to other areas of the park. Cumulative impacts to lynx and wolverines under alternative 2 would be short-and long-term moderate adverse, of which alternative 2 would contribute a minimal amount.	Under this alternative Sylvan Pass would be closed to OSV use and maintenance activities would cease in the area of the park where human-wolverine and lynx interactions are most likely to occur. With a similar number of transportation events to alternative 2, (120 daily transportation events under alternative 3 versus 123 average events under alternative 2) restrictions on movements of lynx or wolverines during the winter months due to the presence and use of OSV routes in other areas of the park may limit reproductive success, dispersal, and overall genetic sustainability of the species, but such impacts are difficult to predict. Therefore, impacts predicted under this alternative would be short- and long-term minor adverse, and long-term beneficial from the removal of human presence at Sylvan Pass. Cumulative impacts to lynx and wolverines under alternative 3 would be long-term moderate adverse, to which alternative 3 would contribute minimally.	This alternative would allow OSV use at Sylvan Pass, the area of the park where human-wolverine interactions would be most likely. Furthermore, restrictions on movements of lynx or wolverines during the winter months due to the presence and use of OSV routes in other areas of the park may limit reproductive success, dispersal, and overall genetic sustainability of the species, but such impacts are difficult to predict. Therefore, impacts predicted under this alternative would be long-term minor adverse, with the potential for moderate adverse impacts if lynx and wolverines travel outside the eastern sector of the park. Overall, impacts would be reduced from use levels permitted under the 2009 to 2011 interim regulations, as the number of daily transportation events would be reduced. Should all OSVs meet enhanced BAT, the overall number of transportation events would not increase and impacts would not be expected to increase. Cumulative impacts to lynx and wolverines under alternative 4 would be moderate adverse, of which alternative 4 would contribute a minimal amount.
Trumpeter Swans/Eagles	Alternative 1 would result in short- and long-term negligible adverse impacts on swans and eagles in the park because OSV use would be limited to minimal administrative use and there would be no observable impacts. Cumulative impacts would be long-term moderate adverse, and alternative 1 would contribute minimally to the overall cumulative impacts to eagles and swans.	Alternative 2 would limit impacts to swans and eagles through use-limits, guiding requirements, and little overlap of OSV use with the active swan nesting season. Given these conditions and the mitigation measures discussed above, impacts to eagles and swans under alternative 2 would be localized short- to long-term negligible to minor adverse. Cumulative impacts would be long-term moderate adverse, and alternative 2 would contribute a small amount to the overall adverse cumulative impacts.	Alternative 3 would limit the impacts to swans and eagles through use limits, guiding requirements, and little overlap between OSV use and the active swan nesting season. The slight reduction in the number of transportation events when compared to those currently allowed (alternative 2) and guiding requirements would limit impacts to eagles and swans under alternative 3 and result in localized short and long-term, negligible to minor, adverse impacts, with impacts slightly less than alternative 2. Cumulative impacts would be long-term moderate adverse, and alternative 3 would contribute a small amount to the overall adverse cumulative impacts.	Alternative 4 would limit impacts to swans and eagles through use-limits, providing training for and limiting noncommercially guided snowmobile groups, and little overlap of OSV use with the active swan nesting season. Given these conditions and the mitigation measures that would be implemented, impacts to eagles and swans under alternative 4 would be localized short- to long-term negligible to minor adverse, and would be less than alternatives 2 or 3 due to the reduced number of transportation events. Cumulative impacts would be long-term moderate adverse, and alternative 4 would contribute a small amount to the overall adverse cumulative impacts.

	Alternative 1: No Action - No Snowmobile / Snowcoach Use	Alternative 2: Continue Snowmobile/Snowcoach Use at 2011/2012 Winter Season Interim Regulation Limits	Alternative 3: Transition to Snowcoaches that Meet BAT Requirements Only	Alternative 4: Manage OSV Use by Transportation Events
Gray Wolves	Alternative 1 would result in short- and long-term negligible adverse impacts on wolves in the park because OSV use would be limited to minimal administrative use and there would be no observable impacts. The limited human presence would have long-term beneficial impacts. Cumulative impacts would be long-term, minor, adverse, and alternative 1 would contribute a small amount to the overall cumulative impacts.	Alternative 2 would result in short- and long-term negligible to minor adverse impacts on wolves in the park because OSV use would be limited to current use levels, which would reduce the frequency of OSV encounters, and limit the duration of interaction and the approach distance of OSV users due to guiding requirements. Cumulative impacts would be long-term minor adverse, and alternative 2 would contribute a small amount to the overall adverse cumulative impacts.	Alternative 3 would result in short- and long-term negligible to minor adverse impacts on wolves in the park because OSV use, or total number of transportation events, would be slightly reduced from the levels permitted under the 2009 to 2011 interim regulations (alternative 2) and limits duration and approach distance of OSV users when encountering wolves due to guiding requirements. Cumulative impacts would be long-term minor adverse, and alternative 3 would contribute a small amount to the overall adverse cumulative impacts.	Alternative 4 would result in short- and long-term negligible to minor adverse impacts on wolves in the park, with impacts less than those expected under alternatives 2 and 4. OSV use, specifically the number of transportation events, would be reduced from the levels permitted under the 2009 to 2011 interim regulations, which would reduce the frequency of OSV encounters with wolves. Should all OSVs meet enhanced BAT it would not increase the overall number of transportation events and would not be expected to increase impact levels beyond a minimal level. Cumulative impacts would be long-term minor adverse, and alternative 4 would contribute a small amount to the overall adverse cumulative impacts.
Air Quality	The effects of alternative 1 on air quality and visibility would be long-term minor adverse. Cumulative impacts would result in long-term minor adverse impacts on air quality.	Alternative 2 would have short-term moderate adverse impacts on air quality prior to 2017/2018, but the long-term effects of alternative 2 would be minor adverse. The effect of alternative 2 on air quality would be long-term moderate adverse. The effect of alternative 2 on visibility would be long-term negligible adverse, before, during and after the transition to BAT snowcoaches. Cumulative impacts to air quality and visibility would be long-term minor adverse.	The effects of alternative 3 on air quality would be long-term minor adverse. The effect of alternative 3 on visibility would be long-term negligible adverse. Cumulative impacts to air quality and visibility would be long-term minor adverse.	The effects of alternative 4 on air quality would be long-term minor to moderate adverse. The effect of alternative 4 on visibility would be long-term negligible adverse. Cumulative impacts to air quality and visibility would be long-term minor to moderate adverse.
Soundscapes and the Acoustic Environment	The effects of alternative 1 on soundscapes would be long-term, minor to moderate, and adverse due to administrative OSV use. Moderate impacts would be limited to travel corridors. Cumulative impacts to soundscapes would be long-term, minor to moderate and adverse.	The effects of alternative 2 on soundscapes would be long-term, moderate and adverse due to the level of OSV use permitted. Cumulative impacts to soundscapes would be long-term, moderate and adverse.	The effects of alternative 3 on soundscapes would be long-term, minor to moderate and adverse, both before and after the phaseout to BAT snowcoaches only. Cumulative impacts to soundscapes would be long-term, minor to moderate and adverse.	The effects of alternative 4 on soundscapes would be long-term, minor to moderate and adverse. Cumulative impacts to soundscapes would be long-term, minor to moderate and adverse.
Visitor Use, Experience, and Accessibility	Restricting winter access to the interior of the park by non-motorized means would result in long-term major adverse impacts on the visitor use and experience to all visitors, including those with mobility impairments. Winter visitors desiring either or both non-motorized and motorized experiences would be affected by loss of access. Overall cumulative effects would be long-term major adverse.	Under alternative 2, continuing OSV use and access at the same levels as the 2009 to 2012 interim regulation limits would meet recent demand for winter visitation, including visitors with mobility impairments. Both motorized and non-motorized winter users would experience the benefits of continued access to the park's interior Therefore, alternative 2 would result in long-term benefits to visitor use and experience. Cumulative impacts to visitor use and experience under alternative 2 would be long-term and beneficial.	Under alternative 3, changes in visitor experience created by the transition to snowcoach access only would result in parkwide, long-term benefits compared to the no-action alternative. Both motorized and non-motorized winter users would experience the benefits of continued access to the park's interior. However, the opportunity to experience the park by snowmobile would be lost for all park users, including those with mobility impairments. This would result in some visitors' expectations not to be met and result in long-term minor to moderate adverse impacts. Overall, alternative 3 would result in long-term beneficial impacts to visitor experience and access, with long-term moderate adverse impacts from the phaseout of the snowmobile experience but the maintenance of other winter experiences in the park. Cumulative impacts to visitor use and experience would be long-term beneficial and long-term moderate adverse.	Under alternative 4, management by transportation event and inclusion of noncommercially guided snowmobile tours would increase visitor opportunities, resulting in parkwide, long-term beneficial impacts compared to the no-action alternative for visitor use and experience and visitor accessibility. If visitors are able to experience winter use, but not in the mode they desire due to how operators user their allocations, there would be the potential for long-term moderate adverse impacts. The amount of access into the park would remain around current levels, with the potential to increase, and they types of experiences available would increase while impacts to all resources, including visitor use, experience, and accessibility, would remain the same or decrease due to a decrease in the number of transportation events compared to the conditions allowed under the 2009 to 2011 interim regulations. Both motorized and non-motorized winter users would experience the benefits of continued access to the park's interior, and operators would have the ability to choose the type of service they provide. Resource conditions would remain largely unchanged from recent years. Overall, alternative 4 would result in long-term benefits to visitor experience and access. Cumulative impacts would be beneficial.
Health and Safety	Overall, air pollution and noise levels would be limited to administrative OSV use and would be minimal, and the closure of Sylvan Pass would reduce the avalanche risk to staff. Therefore, impacts to health and safety would be long-term negligible adverse and long-term beneficial to health and safety, with the potential for long-term minor adverse impacts from the possibility of non-motorized users being out in harsh winter conditions with minimal support facilities. Cumulative impacts would be long-term, negligible adverse.	Under alternative 2, impacts to human health and safety would be long-term negligible adverse from air and noise emissions, long-term moderate adverse from the operation of Sylvan Pass, and long-term minor adverse from user conflicts and exposure to the elements. Cumulative impacts under alternative 2 would be long-term minor adverse.	Under alternative 3, impacts to human health and safety would be long-term negligible adverse from air and noise emissions, long-term beneficial from the closure of Sylvan Pass, and long-term minor adverse from user conflicts and exposure to the elements, both before and after the transition to snowcoach only. Cumulative impacts would be long-term negligible adverse.	Under alternative 4, impacts to human health and safety would be long-term negligible adverse from air and noise emissions, long-term moderate adverse from the operation of Sylvan Pass, and long-term minor adverse from user conflicts and exposure to the elements. Cumulative impacts would be long-term minor adverse.

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Socioeconomic Values	The impacts are estimated to be negligible, adverse, and long term for the three-state area, the five-county area and Cody and Jackson, Wyoming. West Yellowstone is projected to experience minor, adverse, long-term impacts. As described earlier, the adverse direct impacts would be most directly felt by communities and businesses near the park, especially in areas that have a higher proportion of business tied directly to park visitation. At the north entrance, Gardiner, Montana, might experience beneficial impacts if visitors who would have visited the other entrances switch to the North. The IMPLAN modeling captures the indirect and induced effects as well. As individual businesses are adversely affected, they would reduce purchases of other goods and services from suppliers. Conversely if individual businesses are beneficially affected they would increase the purchase of goods and services from suppliers. These feedback effects impact sectors of the economy beyond those that are influenced directly by visitors. Cumulative impacts would be long-term negligible adverse or beneficial cumulative impacts on the socioeconomic environment. In West Yellowstone cumulative negligible to minor adverse impacts could result.	In conclusion, compared to alternative 1, alternative 2 would result in beneficial, long-term impacts for the three-state area, the five county area, and the communities of Cody and Jackson. In West Yellowstone, the beneficial, long-term impacts would be larger on average. Alternative 2 continues current management, under which there has been some increase in visitation, especially for snowcoach use. Cumulative impacts would be long-term beneficial.	Compared to alternative 1, alternative 3 is expected to have on average beneficial, long-term impacts for all the communities except Cody, as seen in tables 62, 63, and 64. In order to generate larger beneficial impacts under this alternative, demand for snowcoach tours must increase to more than make up for the eventual phaseout of snowmobiles. Cumulative impacts would be long-term beneficial.	Compared to alternative 1, alternative 4 is expected to have on average beneficial, long-term impacts for all the communities, as seen in tables 62, 63, and 64. Cumulative impacts would be long-term beneficial.
Park Operations and Management	Alternative 1 would have long-term negligible adverse impacts to park operations because staffing and resource requirements would be covered by existing funding, as well as long-term benefits from the potential reallocation of staff to other areas of the park during the winter season. In addition, fuel requirements and greenhouse gas emissions would be reduced from current levels because the number of staff needed in the interior of the park, and therefore OSV use, would be reduced. Cumulative impacts under alternative 1 would be long-term, negligible to minor adverse, of which alternative 1 would contribute a large part.	Alternative 2 would result in long-term negligible to minor adverse impacts because the staffing and resource requirements would be similar to those currently funded, and this level of funding would be expected to continue. Any additional resources required may impact park operations, but through other funding sources or reallocation of resources, would not have a noticeable impact on park operations. Cumulative impacts under alternative 2 would be long-term negligible to minor adverse, of which alternative 2 would constitute a large part.	Alternative 3 would result in long-term negligible to minor adverse impacts to park operations and management because the staffing and resource requirements for implementation of the alternative would likely be met with existing funding sources and because costs would be slightly less than current operations. Cumulative impacts under alternative 3 would be long-term negligible to minor adverse, of which alternative 3 would constitute a large part.	Alternative 4 would result in long-term negligible to minor adverse impacts to park operations and management because the staffing and resource requirements for implementation of the alternative would likely be met with existing funding sources and because costs would be comparable to current operations. Additional management required under this alternative would be accommodated through existing staff or from lottery fees associated with the noncommercial guiding program. Cumulative impacts under alternative 3 would be long-term negligible to minor adverse, of which alternative 3 would constitute a large part.