UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
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DENVER, COLORADO 80202-2466

April 23, 2002

Ref: EPR-N

Steven F. Iobst
Assistant Superintendent
Grand Teton National Park
P.O. Box 170
Moose, Wyoming 83012

Re: Draft Supplemental EIS for Winter Use
CEQ# 020130

Dear Mr. Iobst:

As a Cooperating Agency in the Supplemental Winter Use Planning Process, and in accordance with our responsibilities under the corresponding Memorandum of Agreement with the National Park Service (NPS), the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Supplemental Environmental Impact Statement (DSEIS) for Winter Use Plans at Yellowstone and Grand Teton National Parks and John D. Rockefeller, Jr. Memorial Parkway (the Parks). We provide the following comments to assist NPS in producing a document that meets the intent of the National Environmental Policy Act (NEPA) and the terms of the Settlement Agreement that led to this Supplement. These comments are provided in accordance with EPA's responsibilities under NEPA and Section 309 of the Clean Air Act, and we hope they will be useful to you as you complete this supplemental analysis.

EPA thanks the NPS for the opportunity to participate in this SEIS as a Cooperating Agency. NPS has again fully involved the Cooperating Agencies at every point in this process. NPS was extremely responsive to the Cooperating Agencies, and we appreciate the almost weekly opportunity to provide input and ask questions. We also appreciate NPS' efforts to fully evaluate and utilize applicable information and input from the Cooperators. While the Settlement Agreement set a very tight time frame for this analysis, and though NPS received much of the new information much later than expected, the NPS planning and analysis team is to be commended for doing a remarkable job in assembling this DSEIS.

This DSEIS amends the Final Winter Use EIS (FEIS) issued in October, 2000. The two primary purposes of the DSEIS are as follows: 1) to solicit more public input, and 2) to include data from new snowmobile technology and other new information. This DSEIS analyzes four

alternatives that fall within the range of those alternatives presented in the FEIS.

- Alternative 1a represents the November 2000 Record of Decision (ROD), fully phasing in the transfer of motorized access to snowcoaches by 2003 - 2004. The existing ROD implements FEIS Alternative G with minor modifications.
- Alternative 1b is identical to 1a except implementation is extended one additional year, with full implementation in 2004 - 2005.
- Alternative 2, at full implementation, requires 50% lower emissions on all snowmobiles, and caps snowmobiles in Yellowstone at 1,300/day pending a carrying capacity analysis.
- Alternative 3, at full implementation, requires "best available technology" for reducing emissions and noise for all snowmobiles entering the Parks, and all snowmobiles would be accompanied by a NPS licensed guide. Alternative 3 caps use in Yellowstone at 930 snowmobiles per day until a carrying capacity analysis is completed.

EPA fully supports continued winter access to these National Parks. Given the analysis presented in the DSEIS, EPA is satisfied that if applicable regulation, law, and federal policy are followed, Park resources can be protected while maintaining motorized winter access to these Parks. While this comment letter will suggest some adjustments and additional analyses, EPA finds the Park Service again used the best-available information, scientific analyses, expert agency comment, and public input in assembling both the DSEIS and FEIS (as required by 40 CFR 1500.1(b)). The assessment of impacts in the DSEIS and FEIS is supported by an extremely thorough and credible body of human health, environmental, and wildlife science, much of which is site-specific to the Yellowstone ecosystem. NPS, academic and agency researchers have actively studied the impacts of snowmobile use for over 10 years in these Parks. The Yellowstone ecosystem has the benefit of more peer-reviewed scientific research on the effects of motorized winter recreation than any other place on earth.

EPA's primary concern with this supplemental analysis is that three of the four DSEIS alternatives (1b, 2 and 3) threaten to exceed National or Montana Ambient Air Quality Standards for carbon monoxide in the first year of implementation (2002-2003). NPS has the ability, information and authority to set interim limits to vehicle numbers that would assure compliance with Air Quality Standards. EPA encourages interim vehicle limits be sufficiently reduced in the FSEIS to assure compliance with these standards. Although complying with Air Quality Standards does not assure elimination of the impairment to visibility or human health caused by vehicle exhaust, it is an achievable first step toward resolving the impaired air quality in these Parks.

In November, 2000, NPS issued a Record of Decision (ROD) that resolved the winter-use

threat to National and State Air Quality Standards as well as the significant impairments to human health, visibility, wildlife and soundscapes. This remedy was to begin with actions taken this past winter (2001-2002), with full implementation in 2003-04. EPA recently learned that some actions required by the ROD to reduce impacts to air quality this past winter were not implemented. The ROD is an active policy document and represents an agreement with the public for managing winter use in these Parks. EPA is concerned that air quality, human health and visibility continued to be impaired this past season. As discussed in our enclosed Detailed Comments, EPA is suggesting that interim limits be adjusted in each of the SEIS alternatives to assure compliance with air quality standards beginning this coming season (2002 - 2003).

Environmentally Preferred Alternative

EPA has carefully considered the new information, analysis and alternatives presented in the DSEIS, and we find FEIS Alternative G remains the environmentally preferred alternative. The analysis presented in this EIS clearly indicates FEIS Alternative G would provide the best available protection to human health, wildlife, air quality, water quality, soundscapes, visitor experiences, and visibility while maintaining motorized and non-motorized winter access to these Parks. We are confident that Alternative G will fully comply with all applicable environmental regulations, policy and Executive Orders. EPA has no objections to this alternative.

EPA Rating

Based primarily on the disclosure in this DSEIS that Alternatives 1b, 2 and 3 would likely result in noncompliance with air quality standards and that air quality could negatively impact human health, EPA is rating these three action alternatives EO-2 (Environmental Objections, 2 - Insufficient Information). Alternatives 2 and 3 are likely to be inconsistent with NPS environmental policy regarding protection of air quality and related values. "EO-2" indicates that the EPA review has identified environmental impacts including possible violation of environmental regulations that can and should be avoided in order to fully protect the environment. Corrective measures may require substantial changes to the alternatives or consideration of additional project alternatives. The identified additional information, data, analyses or discussion should be included in the Final SEIS (FSEIS). While Alternatives 1b, 2 and 3 all receive the same EO-2 rating, EPA notes that there are substantial differences in environmental performance between these alternatives (see enclosed Detailed Comments). EPA finds no environmental objection to the No Action Alternative (1a). A full description of EPA's EIS rating system is enclosed.

Because the decision maker can select from among alternatives in both the DSEIS and the FEIS, EPA is providing a brief assessment of the alternatives in the FEIS as well. Because FEIS Alternatives A, B, C, D, E and F would likely not comply with environmental regulation, policy and executive orders, EPA has expressed environmental objections with these alternatives (see

EPA comments on Draft and Final EISs). Again, EPA finds no environmental objection with Alternative G.

We appreciate the opportunity to review this DSEIS and provide comments. A set of detailed comments on the DSEIS is enclosed. Thank you for your willingness to consider our comments at this stage of the process, and we hope they will be useful to you. Should you have questions regarding these comments, please contact Phil Strobel of my staff at (303) 312-6704.

Sincerely,

Original signed by
Max H. Dodson
Assistant Regional Administrator for
Ecosystems Protection and Remediation

cc: Winter Use Cooperating Agency Liaisons

Enclosures

EPA Detailed Comments on the Winter Use DSEIS

Air Quality

DSEIS modeling indicates a potential exceedance of National Ambient Air Quality Standards (NAAQS) and Montana Ambient Air Quality Standards (MAAQS) for Alternatives 1b, 2 and 3 in the first implementation year (Tables 44 and 45, and p.182). In Alternatives 1b and 2, the 8-hour average CO concentration continues to threaten NAAQS into the second implementation year (Table 45). NPS has been aware of this significant air quality issue for a number of years, and we therefore do not understand why it is not addressed in the first implementation year in all alternatives considered in the DSEIS. EPA recommends that NPS reduce vehicle numbers in each of these alternatives in the FSEIS sufficient to eliminate the threat to air quality standards in any year.

Alternatives 2 and 3 both have elements that result in significant uncertainty in understanding their effects on future air quality, potentially extending the threat to air quality standards beyond that disclosed in the DSEIS. The following issues should be resolved in the FSEIS:

- At full implementation, Alternative 2 would require all snowmobiles, including public snowmobiles, to comply with an emission standard more stringent than EPA's current or proposed emission standard. Specifically, Alternative 2 would reduce carbon monoxide and hydrocarbon emissions in the 2004 - 2005 season by 50% from today's baseline. This is equivalent to EPA's proposed 2010 snowmobile emission standard and therefore NPS would, at a minimum, be implementing this standard ahead of EPA's proposed schedule. EPA is concerned with respect to Alternative 2, that despite requests from EPA, this document does not cite the authority by which the NPS or the States could implement vehicle emission standards more stringent than EPA's current standard. Without such congressionally-granted authority, the emission standards in this alternative appear to be infeasible. Without such authority, the interim vehicle cap is the only factor in Alternative 2 that would change the air quality performance of the alternative from today's conditions, potentially resulting in far less improvement to air quality than estimated in the DSEIS.
- Alternative 2 implements emission or technology requirements on rental and outfitter snowmobiles beginning this winter (2002-03). Given that the decision for this SEIS is not expected to become effective until December of this year, it is unlikely that rental and outfitters services will have adequate notice to purchase appropriate technologies. If NPS agrees this schedule is not feasible, the implementation schedule and modeling for this alternative should be updated in the FSEIS. Again, we would expect that NPS would alter the interim vehicle limits to be protective of Air Quality Standards in the FSEIS.
- Alternative 3 utilizes, but does not clearly define the term "best available technology"

(BAT) for reducing emissions and noise (the current definition is provided on p. 291). Clear definition of BAT is critical to understanding the environmental performance of Alternative 3 and therefore must be refined in the FSEIS. The current definition can result in several interpretations of "BAT," putting the magnitude of associated air quality benefits of this provision in doubt.

The current definition of BAT could be interpreted simply as requiring 4-stroke engines, with the assumption that they will improve over time. There are substantial differences between the emission and noise profiles of the 4-stroke snowmobiles currently on the market (*see "4-Stroke Technology" comments below*). If this becomes the chosen interpretation, then the air quality modeling for this Alternative significantly overestimates improvements to air quality and soundscapes, and the modeling should be revised prior to the FSEIS.

This current BAT definition might be interpreted as "the best available production model" on the market in each production year. In this case, the modeling in the DSEIS accurately reflects today's BAT. There is no guarantee, however, that BAT five years from now will be cleaner or quieter than today. (*see the "Best Available Technology" comment section below*)

The current BAT definition would not appear to allow NPS to require specific, available emission control technology, such as catalytic convertors, or muffler configurations *unless* they exist as standard equipment on the cleanest, quietest production snowmobile. The FSEIS should indicate whether this definition would allow NPS to require technology not available on production models, but that could feasibly be added.

The FSEIS definition should indicate how often BAT requirements would be updated (ex: every 1, 2 or 5 years).

The FSEIS definition should indicate how NPS would resolve issues such as a super-clean snowmobile model with poor noise performance, or visa-versa. In other words, it is possible, or even likely, that no individual snowmobile will have lowest emissions of CO, HC, PM *and* noise. It is therefore important that NPS define the criteria that will be used to select this technology.

EPA notes several apparent inconsistencies in the air quality modeling results that should be investigated prior to issuing the FSEIS:

- In order to allow comparison with the no action alternative, the Alternative 1a scenario should be included in the air quality model results Tables 44 - 72.

- Alternative 1b, Year 1 has no vehicle caps, yet has the same model results as Alt 3, Year 1 which does implement interim caps.
- Alternative 2, Year 1 estimates a 50% reduction in emissions compared to baseline. EPA would not expect a 50% reduction given the parameters in the alternative, where only 70% of snowmobiles (rentals and outfitters) are required to reduce emissions by 50%, and 30% of snowmobiles (public) would continue at baseline emission levels. This should result in less than a 50% reduction in Year 1.

Because the number of snowmobiles entering these Parks has increased dramatically since the late 1970's, EPA again encourages the Park Service to complete a screening-level, 24-hour average, prevention of significant deterioration (PSD) Class I increment analysis for particulate matter (PM_{10}). This information is necessary to fully understand whether current winter use, and proposed alternatives, would likely comply with Class I provisions of the Clean Air Act.

EPA looks forward to the addition of visibility modeling for Alternatives 2 and 3 in the FSEIS. Lacking this analysis, it is important to note that compliance with National and State Ambient Air Quality Standards does not assure that visibility or human health will be protected from further impairment. While air quality in these Parks has been bad enough to approach Ambient Air Quality Standards, frequent impairment to visibility and significant human health impacts are well documented. Visibility impairment is present whenever cold, calm days occur, and even on days far below peak snowmobile numbers.

With the lowest emissions of CO, PM_{10}, NO_X and HC (DSEIS, Table 73), Alternatives 1a and G would result in the best possible air quality in these Parks while still providing motorized access. When comparing the effects of Alternatives 2 with Alternative 3, it is clear that Alternative 3 would provide markedly better air quality through the use of BAT and lower vehicle numbers. Although, as expressed above, we have significant doubts and concerns regarding the ultimate air quality impacts associated with Alternatives 2 and 3, EPA believes that if these concerns can be resolved in the FSEIS, at full-implementation these alternatives would also comply with National and Montana Ambient Air Quality Standards.

In summary, EPA is very concerned that although exceedance of Ambient Air Quality Standards is entirely avoidable, the DSEIS indicates these standards are threatened in the first two implementation years with several alternatives (1b, 2 and 3). EPA finds that Alternatives 1a, 1b and G would, at full-implementation, provide and perpetuate the best possible air quality and visibility in these Parks, comply with all applicable regulation and federal policy with respect to air quality and related values, and eliminate the visibility impairment experienced in these Parks.

Human Health

As discussed in the FEIS and DSEIS and the February 2000 NPS report "Air Quality Concerns Related to Snowmobile Usage in National Parks, there are existing, significant human health impacts associated with winter use in these Parks. EPA's proposed rulemaking for setting Recreation Vehicle Emission Standards (including snowmobiles) also discusses the health effects from exposure to exhaust from these vehicles (Federal Register/Vol. 66, No. 194, October 5, 2001).

An important issue we haven't seen discussed in any document associated with this process is the potential additive or synergistic toxic effects due to exposure to multiple chemicals. Human-health based NAAQS, OSHA and NIOSH standards are set assuming healthy individuals in a healthy environment, and do not consider synergistic effects nor individuals with respiratory or other impairments. In these Parks, human exposures do not occur to the individual chemical or physical constituent alone, they occur to a mixture of constituents. As a result, the synergistic impacts may be greater or less than the additive impacts from multiple human toxins. For example, both benzene and carbon monoxide affect red blood cells. Benzene acts in the bone marrow to reduce the number of effective red blood cells released into the bloodstream. Carbon monoxide binds to hemoglobin on red blood cells preventing the binding of oxygen, and subsequently, delivery of oxygen to the tissues. If someone already has a reduced number of red blood cells circulating, and those red blood cells are unable to release oxygen to the tissues, the effects may be felt at levels below the health standards for either chemical alone, especially if the individual is already compromised (e.g., existing cardiovascular conditions or chronic obstructive pulmonary disease). Particulate matter can also affect the respiratory system's ability to deliver oxygen and may further exacerbate effects from CO and benzene exposure. In another example, CO, benzene and formaldehyde have all been documented at elevated levels in the Parks. These three chemicals are all associated with neurological effects such as headaches, nausea, dizziness, or central nervous system depression.

Given the ongoing concern regarding employee health in the Parks, NPS may want to consider a more frequent workplace monitoring program for CO, toxic constituents, and particulate matter. EPA can provide more detailed consultation on possible monitoring protocols on request.

In summary, EPA is pleased that the NPS is addressing the continuing human health issues present in these National Parks. The DSEIS indicates that snowcoaches (Alternatives G, 1a and 1b) produce substantially less CO, PM and HC per visitor than even the very cleanest of snowmobiles. The DSEIS discloses both air quality and visitor safety (less vehicles, no first-time drivers, lower accident rate) benefits associated with the snowcoach alternatives, leading to the conclusion that the snowcoach mode of visitor transportation is most protective of public and

employee health.

EPA's Proposed Snowmobile Emission Regulation

The DSEIS (p.102) includes an up-to-date summary of EPA's proposed snowmobile emission regulation for reducing carbon monoxide (CO) and hydrocarbon (HC) emissions. The DSEIS (p. 103) also includes a list of SEIS analysis and implementation issues associated with EPA's proposal.

As EPA has indicated several times during this process, even EPA's proposed 2010 standard (50% reduction of CO and HC) would not require 4-stroke technology. Manufacturers have indicated to [EPA] that two-stroke engines equipped with direct fuel injection systems could reduce HC emissions by 70 to 75 percent and reduce CO emissions by 50 to 60 percent. It should therefore be made clear in the FSEIS that Alternative 2 would not require 4-stroke technology.

Best Available Technology

In our air quality comments above, EPA expresses the need for a clearer definition of "BAT." In addition to that request, we offer the following information to assist NPS in assessing the near-term air quality benefits of snowmobile BAT.

NPS received emission data for two, 4-stroke, low-horsepower, touring snowmobiles (Arctic Cat and Polaris). Both of these vehicles are currently available on the market. As documented in the DSEIS, the Arctic Cat snowmobile has significantly lower emissions than the Polaris. This is because Arctic Cat utilizes a production-model, 3-cylinder, Suzuki automobile engine with highly engineered emission controls. That emission technology is not currently available to manufacturers using non-automotive engines. It is therefore unlikely that other manufacturers will soon have emission levels similar to the Arctic Cat vehicle.

Touring snowmobiles make up approximately 10% of current snowmobile sales. With total annual sales of about 140,000 snowmobiles, the estimated annual touring market is only 14,000 machines. The touring market is then spread mainly among the four major manufacturers. The 4-stroke touring snowmobiles currently make up a fairly small percentage of the touring market, and have a unit cost that is approximately $3,000 to $5,000 above similar horsepower 2-stroke machines. In testimony to EPA regarding the Notice of Proposed Rulemaking for snowmobile emission standards, Polaris discussed its "Indy Frontier" 4-Stroke, stating, "It remains to be seen whether the cost and performance characteristics of this product will be accepted in the market place." If in fact the market does not accept and sustain the production of these low horsepower 4-stroke snowmobiles, it is likely that BAT in the near future will actually emit more pollutants than the best snowmobiles available today. The FSEIS

should therefore recognize that there is some doubt in the projection of emissions benefits associated with Alternative 3.

4-Stroke Technology

It is important to note in the FSEIS that 4-stroke technology, by itself, does not guarantee low emissions or quiet operation. There are numerous examples of 4-stroke automobiles and motorcycles that would never be considered clean or quiet in the context of a National Park setting. In particular, carbon monoxide emissions can be significant in 4-strokes engines lacking highly engineered, automobile-type emission controls. It is possible that direct injection 2-stroke technology will outperform most 4-stroke snowmobiles with respect to CO emissions.

This past season, Yamaha introduced a high-performance, 4-stroke, 150 horsepower snowmobile. This snowmobile utilizes a motorcycle engine with approximately three times the horsepower of the touring snowmobiles. While there are no emission or noise data yet available for the Yamaha snowmobile, it is almost certain to have emission and noise levels significantly higher than the touring 4-strokes assessed in the DSEIS. It is not clear whether the Yamaha machine will result in a trend toward high-horsepower 4-strokes. It should be noted that given equivalent emission control technology, as horsepower increases, emissions and noise will also increase.

Finally, because of the significantly higher cost of 4-stroke snowmobiles (from $3000 to $5,000 more per unit than similar-horsepower touring models), it is possible that rental and guide operations, to remain competitive, would be economically unable to implement this technology unless specifically required by NPS policy or EPA regulation.

Snowcoach Emissions

Snowcoaches are typically powered by light-duty gasoline truck (LDGT) engines. EPA's Tier 2 emission regulation for light-duty trucks will begin phase-in during 2004. As the snowcoach fleet builds and turns over, this Tier 2 regulation will result in even cleaner operations for these vehicles than estimated in this DSEIS.

Though Alternative G would require conversion to BAT snowcoaches over time, it is important to point out that this EIS process has not attempted to analyze the emissions from "best available" snowcoach technology. Great effort has gone into assessing emissions and noise from the best of current snowmobile technology, yet there is no equivalent analysis for snowcoach BAT. The DSEIS utilizes EPA's LDGT emissions factors, which are a reasonable estimate of the average emissions from snowcoaches currently operating in the Parks. The FSEIS should specifically indicate that in comparing Alternative 3 to Alternative 1, Alternative 3 analyzes BAT for snowmobiles while Alternative 1 does not analyze BAT for snowcoaches.

In December, 2001, Southwest Research Institute (SwRI) published a report titled, "Determination of Snowcoach Emissions Factor." This report is reprinted in Appendix D (p. D-23). For this report, SwRI tested one snowcoach, a 2-wheel drive (tracks on back wheels, skis on front) 15-passenger van with a V-10 engine. This report provides the first laboratory test of snowcoach emissions. The test was conducted in both "open-loop" and "closed loop" operational modes that resulted in two dramatically different emission profiles. For example, carbon monoxide emissions in grams/mile were 129 times higher in open-loop mode. Unfortunately, as the report states, it is not known how often snowcoaches operate in closed-loop vs. open-loop mode. Based on the SwRI study, and knowledge of current operating characteristics and emission-control technologies, EPA would expect that snowcoaches in these Parks utilizing modern LDGT engines would operate in closed-loop mode except under extreme conditions such as hard acceleration from stop, or climbing steep grades. Because of the dramatic difference in emissions in the two operating modes, this report is of little use in the SEIS analysis of snowcoach emissions. It is unfortunate that NPS was not consulted in designing this study. We hope that future snowcoach emission studies can be coordinated with, or funded by NPS to provide the following:

- With NPS guidance regarding input requirements of the air quality model, and regarding the assumptions used in testing, the data could be directly utilized in air quality modeling.
- NPS could assure that all parameters needed to make management decisions are included in the test procedure. Particulate matter emissions data are necessary in analyzing air quality, visibility and human health effects. Particulate matter emissions were not among the constituents monitored in this study.
- A field analysis of the time spent in open-loop vs. closed-loop mode is critical.
- NPS should collect and provide additional information from snowcoach outfitters regarding operating conditions (gas milage, time spent at idle, transit time between locations, average number of snowcoach passengers, etc.). The SwRI report was limited to data from just one snowcoach outfitter.
- NPS, emissions experts, and outfitters could provide guidance in selection of snowcoach configurations intended to typify worst-case, average, and best-technology snowcoach emissions.

EPA's review of the SwRI report indicates snowcoach emissions are likely within the range of the estimated emissions used by NPS in the DSEIS. EPA would like to see this test redone with as much of the above information as possible, and including more than one typical snowcoach configuration (ex: Bombardier, Mattracks). Even if the testing cannot occur until after the SEIS process in complete, this information will prove useful to NPS in making future management decisions including carrying capacity analyses. Despite these concerns and

recommendations, EPA is satisfied that the DSEIS provides a reasonable estimate of snowcoach emissions based on the best available information. EPA concludes, based on the information provided in the DSEIS, that snowcoaches are now, and will likely continue to be, the most protective form of visitor transportation for air quality and related values.

Noise/Soundscapes

The DSEIS demonstrates convincingly that snowcoaches are the least-impacting form of visitor transportation in frequency, magnitude and duration of noise impacts.

Wildlife

New information included in this DSEIS did not alter the FEIS conclusions regarding wildlife impacts from winter use. Due largely to the dramatically decreased number of vehicles and reduced noise impacts, the DSEIS again concludes that snowcoaches are least impacting mode of visitor transportation to wildlife.

EPA notes a potential conflict with the all snowmobile alternatives and federal regulation. NPS has stated (ROD, p.19), "Even with technical advances in snowmobiles, the impacts of snowmobile use on wildlife, especially ungulates using groomed routes, constitutes disturbance and harassment at a time when individual animals are particularly challenged for survival." The new information in this DSEIS indicates that when this statement was written, NPS had accurately estimated the "technical advances" in today's snowmobiles. According to NPS regulation (36 CFR 2.18(c)), snowmobiles are allowed in National Parks "only when their use is consistent with the park's natural, cultural, scenic and aesthetic values, safety considerations, park management objectives, and will not disturb wildlife or damage park resources." To assist the public in understanding the relationship between the alternatives and current regulation, the FSEIS should provide an indication of how alternatives comply with this regulation and other relevant policies.

Socio-Economics

The following are EPA's concerns in the DSEIS evaluation of economic & regional impacts:

- Although it is unstated in the DSEIS, the 1999 Winter Visitor Survey did not include educational information to indicate that substitute sites for YNP and GTNP exist for snowmobiling in the Forest. Survey results were based on people's understanding (or lack thereof) of existing snowmobiling opportunities within and outside the Parks. The small declines of experienced, non-resident snowmobile visitors (13.3%) compared to outfitter-led trip visitors (45.5%) indicate that experienced visitors better understand alternative sites and opportunities. Survey results indicate a minority of clients visit gateway communities only to visit the Parks. If outfitters do a credible job advertising

alternative sites with similar recreation values near the Parks, the decline in clients should be smaller than 45.5%, likely closer to the13.3% figure for non-resident visitors.

- Based on the information in the DSEIS it does not appear the economic analysis considered the increased visits by cross-country skiers and snowshoers that is likely to occur if snowmobiling is curtailed or eliminated in the Park. The Survey focused exclusively on *existing* ski and snowshoe visitors, or those that have demonstrated tolerance for current park conditions. It is likely that the impacts to lodging and food business could be partially offset by enhanced motorized and non-motorized recreation in the Parks by visitors who previously have not visited because of the noise and air pollution associated with snowmobiles. This potential shortcoming could be corrected in the FSEIS, to include consideration of substitute activities that are enhanced by Park snowmobile closures.

- With the trend of growing visitation by snowmobile enthusiasts to the area, reduced use associated with Alternative 1 by residents and non-residents of 8.6% and 13.3%, respectively, may be more than offset by annual increases in snowmobilers (p. 154). Future visitation could therefore be relatively stable or even increase among those groups that support current snowmobile outfitters (though perhaps reducing their growth opportunities).

- The DSEIS points out that the local impacts associated with Alternative 1 are offset by increases in snowmobiling activity elsewhere, both in and outside the GYA. It should be stressed that alternatives exist, and that there is little or no loss in overall economic activity in the three-State region associated with closures. Hence, any benefit-cost analysis should recognize that benefits and overall economic output are diminished little, if at all, and instead there is the potential for transferring regional impacts and benefits to other parts of the three-State region.

- All winter recreation in the Greater Yellowstone area amounts to only $63 million, or 1.1% of the total 5-county economy. With Alternative 1, snowmobiling declines only 8.6% to 45.5% for the three snowmobiling groups. Therefore, the loss to the local economy from Parks snowmobile closure is a maximum of $11.1 million (FEIS p.126), or about 0.2% of the regional economy. Factoring in the missing substitute activities – increased visits by current non-visitors (because of improved air quality and reduced noise) who ski, snowshoe, and/or would use snowcoaches for non-snowmobiling visitation and were not surveyed – may more than offset snowmobiling losses to the local economy because additional non-snowmobiling visitors may be more likely to be destination visitors and provide greater support to lodging and other businesses to a

greater extent than the resident snowmobilers in particular that their visits offset. Overall outfitter gains for snowcoach visitation, skiing, and snowshoeing may partially or wholly offset losses to snowmobile outfitters. In any case, the overall regional economic impact is likely to be even smaller than the 0.2% reported in the DSEIS, and may in fact be positive for the overall regional economy and the Park gateway communities (see next bullet).

- In evaluating whether economic impacts overall are positive or negative, there is a need to determine what would happen to other recreation in the GYA and in the three-State area. The DSEIS (p. 155) discusses the impacts from Alternative 1 on the three-State economy stating, "This is a negligible impact in the context of the 3-state economy. This estimated reduction would be lessened to the extent that nonresidents would choose to recreate at other locations within the 3-state region, but outside the GYA. The extent of any such substitution behavior is unknown." There is reason to believe that recreation users will pursue the same recreation uses elsewhere ("substitution behavior") in the three-State region, and within the greater Yellowstone area. Some area snowmobile users may even visit by snowcoach and/or snowshoe or ski in the Parks if they are closed to snowmobiles. It is not clear whether snowmobile users who responded to the survey had an opportunity to indicate whether they would switch recreation activities.

- The EIS does not address how the *values* of Park experiences change in response to snowmobile closures, with other visitors enjoying the experiences. It appears that only *outputs* were evaluated, without any discussion of benefits and values in the DSEIS. The stated purposes of decreasing wildlife impacts, reducing air pollution, improving visibility, reducing noise impacts, etc. all have economic values that are not monetized, quantified, or even described qualitatively in this analysis. Survey data based on those values, if they were completed and evaluated, could overwhelm possible costs to the regional economy and indicate substantial economic benefits to the region and the nation. A Federal decision should be based on sound benefit and cost decision criteria, both monetized and non-monetized, in addition to regional impacts. NPS could dramatically improve this analysis with a National survey on the benefits that the U.S. public places on natural resource protection and snowmobile use in the Parks.

For questions regarding these socio-economic comments, please contact Brad Crowder, EPA Economist, 303-312-6396.

Alternatives

This DSEIS analyzes two new alternatives (Alternatives 2 and 3) for allowing continued snowmobile access to these Parks, and one new alternative (1b) that requires snowcoaches. As

intended, these alternatives fall within the range of alternatives analyzed in the FEIS. This DSEIS is tiered to the Winter Use FEIS. The decision maker therefore can select from the full range of alternatives and their components from these two documents. For this reason, it may help reviewers if the "Range of Alternatives" discussion (DSEIS p.15) were to include a summary of the major elements of the FEIS alternatives. It would also be useful if this section in the FSEIS were to include a more direct discussion or table representing the similarities and differences between the DSEIS alternatives, and those alternatives analyzed in the FEIS. For example, our review found that the following major elements of Alternatives 2 and 3 were also analyzed in the FEIS:

- Alternatives B and D provide assertive, but time consuming, approaches to limit snowmobile use to cleaner and/or quieter technology. Alternatives E and F would could also result in cleaner, quieter snowmobiles, though the approach is less active.
- Alternatives B and F require best available technology for emissions and/or noise.
- Alternatives B and D require development of technologies to meet stated sound objectives.
- Alternative F requires guides accompanying all snowmobiles.
- Alternatives B and D implement an aggressive information and enforcement program to encourage appropriate winter recreation behavior and etiquette.
- Alternatives B and E assertively state adaptive management provisions that would likely have resulted in future caps on snowmobile numbers or area closures.
- Alternatives B, D and E include interim snowmobile caps until a carrying capacity or other required analysis can be completed. Alternative B caps daily use at 1481 total vehicles per day in the three Park Units pending carrying capacity analysis. Alternative E would cap use based on an incentive system for applying new technology.

The most significant difference between DSEIS Alternatives 2 and 3 and the FEIS Alternatives allowing snowmobiles (B-F) is in the lower interim vehicle cap in Alternatives 3. Alternative 3 places an interim daily cap on snowmobiles at 1130 vehicles across the three Park units with no limit on snowcoach numbers. Alternative 2 places an interim daily cap of 1850 snowmobiles in Year 1, with no limit on snowcoach numbers or on snowmobiles on Grassy Lake Road. In Year 3 and beyond, the daily cap in Alternative 2 drops to 1450. In Alternatives B, D, E, 2 and 3, the areas open to snowmobiling and the number of vehicles would ultimately be determined by a carrying capacity analysis. EPA expressed concerns with these interim caps in the Air Quality section above.

In reviewing the alternatives in the FEIS and DSEIS, EPA concluded that FEIS Alternative G provides the best available protection to human health, wildlife, air quality, water quality, soundscapes, visitor experiences, odor and visibility. We have also reviewed the alternatives for allowing continued snowmobile access (A, B, C, D, E, F, 2 and 3) to determine

which would provide the best protection of these Park resources while still allowing snowmobile use. Of the FEIS and DSEIS alternatives that allow continued snowmobile access to the Parks, Alternative F would be by far the most protective of Park resources including air quality, human health, visibility, wildlife, and natural soundscapes.

Alternative F:

- Eliminates all winter access to the Yellowstone interior from the West and Mammoth entrances, and from Tower, thereby eliminating, across most of the winter wildlife range, impairment to air quality, visibility, human health, soundscapes, and wildlife. Eliminates all oversnow motorized access to Grand Teton, Jackson Lake and the Parkway except Grassy Lake Road and north of Flagg Ranch into Yellowstone.

- Caps use at the average daily use for each road segment in areas of the Parks that remain open.
- Requires best available market technologies for reducing oversnow vehicle sound and emissions.
- Requires all snowmobiles to be accompanied by an NPS-permitted guide.

The NPS has stated, (ROD, p. 19) "The continued use of snowmobiles as provided in the alternatives studied other than alternative G [the snowcoach alternative] is found to be inconsistent with the health and integrity of resources existing in the three park units." Since NPS found even the most protective of snowmobile alternatives to be inconsistent with the health and integrity of Park resources, the decision maker appears limited to selecting among Alternatives G, 1a and 1b in order to adequately protect these resources.

Purpose and Need

One of the primary purposes of this DSEIS is to obtain and analyze new information from snowmobile manufacturers regarding emissions from current 4-stroke production models, and any other new, relevant information available since the ROD was signed in November, 2000. This DSEIS, for the first time, gives NPS and the public the benefit of laboratory-generated snowmobile emissions data reflecting the current best available technology from two snowmobile manufacturers. The data include both carbon monoxide and hydrocarbon emissions, but are lacking the particulate matter emissions data requested and needed by NPS for analysis of human health, air quality and visibility. Nonetheless, thanks to this new information, NPS and the public can now be assured that despite the lack of test data, FEIS Alternatives B and D were remarkably accurate in setting and analyzing emission objectives that could be acheived by the new technology. The new information provided regarding snowmobile technologies is largely within the range of the information and alternatives considered in the FEIS. FEIS Alternatives B and D projected that snowmobile emissions from new technology would be approximately

halfway between the values submitted by Arctic Cat and by Polaris. The new information on emerging technologies indicates that Alternative D actually analyzed a noise standard (60 db) which is far more restrictive than can be achieved by the quietest of today's vehicles. Since we can now be assured that the FEIS accurately estimated likely emission gains from new technology, it is not surprising that the conclusions regarding impacts from snowmobile use remain largely unchanged in the DSEIS. The new information does not alter EPA's support for Alternative G as the environmentally preferred alternative.