

**National Park Service
U.S. Department of the Interior**



**Zion National Park
Utah**

Finding of No Significant Impact Soundscape Management Plan

Background

In compliance with the National Environmental Policy Act, the National Park Service (NPS) prepared an environmental assessment (EA) to examine alternatives and environmental impacts associated with the proposal to develop and implement a Soundscape Management Plan (SMP) for Zion National Park (ZNP). The 2001 ZNP General Management Plan (GMP) identifies an overall desired condition for soundscape management: *Natural sounds predominate in ZNP. Visitors have opportunities throughout most of the park to experience natural sounds in an unimpaired condition. The sounds of civilization are generally confined to developed areas.* Because the GMP is very general in addressing soundscape issues, it also identified the need to develop a soundscape management plan to preserve *natural soundscapes and provide mitigation of intrusive noise from sources other than air tours.*

The SMP describes soundscape objectives tiered off the GMP desired condition for Natural Sounds, appropriate and inappropriate sound sources, soundscape objectives, soundscape indicators and standards, monitoring approaches and protocols, and methods for modifying the SMP using an adaptive management approach

Selection of the Preferred Alternative

Two alternatives were evaluated in the EA including alternative A (No Action) and alternative B (implement soundscape management plan). Alternative B is the NPS's preferred alternative because it best meets the purpose and need by: 1) Protecting the acoustic experience of park visitors and ensuring that natural sounds continue to play an important role in the enjoyment of park resources and values. Visitors to Zion appreciate and value natural sounds and where a soundscape management program will help ensure that the soundscape resource is preserved in an unimpaired condition for future generations; 2) Protecting acoustic conditions for wildlife and the role of the soundscape in ensuring healthy and dynamic ecosystems; 3) Providing an approach to managing the acoustic environment that is consistent with NPS policy; 4) Providing guidance and data for managers to use in collaborating with federal, state, county, tribal and local agencies on soundscape issues that could affect the park.

The SMP describes soundscape objectives, appropriate and inappropriate sound sources, management actions to mitigate those sound sources, soundscape indicators and standards to protect the ability for visitors and wildlife to experience natural sounds, monitoring approach and protocols, and methods for modifying the SMP using an adaptive management approach.

The soundscape objectives in the SMP are tiered to the GMP desired condition for Natural Sounds which states: *Natural sounds predominate in ZNP. Visitors have opportunities throughout most of the park to experience natural sounds in an unimpaired condition. The sounds of civilization are generally confined to developed areas.* The SMP objectives are identified for the frontcountry and wilderness zones and are as follows:

Soundscape Objectives for the Frontcountry Zone

- Natural sounds are audible and discernable, with common noise intrusions by visitors and park operations that are concentrated at locations near roads and heavily developed areas.
- Active intensive management is used to maximize noise free intervals and limit the intensity and duration of noise intrusions.
- Noise levels that interfere with general conversation rarely occur and are of limited duration except when caused by emergency services, search and rescue operations (sirens, search and rescue aircraft), and park operations (road repairs, grounds and building maintenance).
- Sound levels that interfere with interpretive programs do not occur except when caused by emergency services and search and rescue operations (sirens, search and rescue aircraft).
- Sound levels that exceed thresholds for sleep interruption rarely occur.
- Noise levels at common rock climbing areas should not interfere with effective communication among climbers.
- Noise levels that mask important auditory signals for wildlife should be uncommon and should be limited to locations near roads and heavily developed areas.
- Noise levels that affect wildlife behavior, distribution and numbers should be uncommon and should be limited to locations near roads and heavily developed areas.

Soundscape Objectives for the Wilderness Zone

- Only natural sounds are audible and discernable, except for short duration, infrequent human-caused sounds.
- Noise levels that interfere with general conversation are very rare and are of limited duration except when caused by emergency services, search and rescue operations (aircraft), and approved park operations (aircraft, motorized/mechanical tool use).
- Sound levels that exceed thresholds for sleep interruption are extremely rare.
- Noise levels at rock climbing areas and technical canyons should not interfere with effective communication among climbers and canyoneers.
- Noise levels that mask important auditory signals for wildlife should be rare.
- Noise levels that affect wildlife behavior, distribution, and numbers should be rare.

The GMP identifies, by management zone, the kinds of activities and developments that are appropriate to the purposes of the park (GMP pages 69-76). It is inferred in the SMP that the human-caused sounds generated by activities deemed appropriate in the GMP are also appropriate sound sources for the SMP. Although the sources of sound may be deemed appropriate, the GMP also recognizes that some noise associated with them is excessive, and should be mitigated to the greatest extent possible. Generally, mitigation can consist of educating park visitors, staff, and concessionaires, reducing the sound level, duration, frequency of occurrence, or changing the frequency spectrum of the sound to one less obtrusive in the soundscape.

The SMP also identifies other sources of human-caused sound that exist in, or affect the park that not consistent with park purposes. These are also outlined in the GMP. Zion National Park management and staff are obligated under law, policy, and in accordance with the GMP, to take steps in addressing inappropriate sound sources. The park does not have the authority to control the sound sources, but the park is committed to working with adjacent property owners, appropriate federal, state, and local agencies, and organizations to mitigate potential soundscape impacts as identified in the SMP.

The SMP identifies soundscape indicators that are tied to standards. The indicators will be monitored overtime to determine if the standard is being met. Data from monitoring will provide information to managers about the status and condition of park soundscape resources and values relative to law and policy, to assess the long-term effects of management actions on park resources and values, and to adjust the plan, through the adaptive management approach, as additional data are collected and understanding increases. This data will assist the park in determining whether existing management actions are sufficient to protect the park soundscape or if additional management actions need to be implemented.

For a complete description of soundscape protection decisions, refer to the Zion National Park Soundscape Management Plan dated September 2010.

Mitigation Measures

- Encourage visitors to be respectful of others by not shouting, yelling, loud conversations, or producing other excessive noise.
- Encourage and remind visitors to limit noise, turn off cell phones, deactivate beepers on cameras, and reduce volume on mp3 players.
- Encourage visitors to deactivate the beepers for locking doors and deactivate car alarms.
- Enforce quiet hours in campground. Consider expanding the quiet hours.
- Encourage visitors to avoid the use of generators in parking lots and campgrounds.
- Provide electric hookups in campgrounds where feasible to eliminate the need for generators.
- Develop and implement educational and interpretive programs on soundscapes.
- Discourage the use of stationary or handheld messaging devices on trails and in undeveloped areas.
- Add article in park paper on the importance of natural soundscape.
- Consider identifying and designating "Quiet Zones/Areas" in the Frontcountry. These areas will be identified on maps, through signs and interpretation. Visitors will be encouraged to be quiet enough to hear natural sounds in these areas.
- Limit use of amplification, use only when necessary and to the minimum level necessary (evening programs at amphitheaters and interpretive tours on shuttle bus, etc.).
- Manage parking areas to established capacity limits.
- Encourage maintenance and delivery trucks to deactivate back-up beepers where appropriate.
- Work with delivery companies to determine appropriate times for deliveries.
- Enforce existing noise ordinances (36 CFR §2.12).
- No idling of vehicles (tour busses, shuttles, etc.) in parking areas for layovers of more than 3 minutes (especially at Temple of Sinawava).
- Continue to require bus tour companies to comply with regulations that reduce noise levels (e.g., turning off engines when buses are parked).

- Consider quiet technology for replacement shuttle buses.
- Consider smaller speakers placed closer to the seats to keep public address system volume lower on shuttle buses.
- Encourage shuttle drivers to talk only on up canyon trips – allowing visitors the opportunity to experience a quieter trip down canyon.
- Continue operating the shuttle system.
- Consider shuttle bus timing/schedules to ensure opportunities for visitors to experience natural sounds in Zion Canyon.
- Eventually phase out private tour buses in Zion Canyon above Canyon Junction to reduce noise levels and eliminate the greatest source of noise in the canyon as identified in the GMP.
- Encourage quiet and courteous motorcycle riding through education.
- Discourage use of modified exhausts on motorcycles that increase noise levels.
- Require groups of organized motorcycle riders to acquire a special use permit.
- Any applications for organized motorcycle riders must go through the appropriate NEPA analysis.
- Consider ways other than aircraft to accomplish administrative tasks.
- Combine flights whenever possible.
- Require flight following using GPS or similar technology and reporting for all administrative flights.
- Minimize noise generated by park management activities by strictly regulating NPS and concession administrative use of noise producing machinery, including aircraft and motor vehicles.
- Any applications for commercial filming permits must comply with existing safety and aviation restrictions and must go through the appropriate NEPA analysis.
- Limit the hours of operation of motorized tools, loud vehicles, aircraft, etc. from 9:00 am to 5:00 pm. Protecting dawn, dusk and nighttime quiet.
- Minimize the use of leaf blowers, chainsaws, and other mechanical equipment. Consider other products that accomplish the same task (handheld non-power tools, brooms, rakes, electric powered mowers or trimmers, etc.).
- Educate staff on quieter tool choices and their use.
- Consider quiet technology when replacing equipment or contracting to the use of equipment. Prior to purchase, research will be conducted in regard to the best available technology and the quietest equipment will be identified and purchased unless there is an overwhelming reason not to.
- Ensure building alarm systems are maintained to reduce false alarms.
- Noise should be addressed in all NEPA analysis.
- Increase the use of quiet technology where appropriate.
- Encourage alternate forms of transportation when traveling in the park (shuttle, walk, bike, carpool, etc.).
- Consider hybrid or full electric vehicles when replacing vehicles.
- Sirens will only be used for emergencies.
- In designated and recommended wilderness, the use of motorized equipment will conform to the requirements of the Wilderness Act, minimum requirements procedures, and related NPS policies (DO-41: *Wilderness Preservation and Management*).
- Conduct minimum requirement procedures and NEPA analysis in Wilderness (emergency actions may be exempt).

- Engage in the planning efforts of other agencies in which there is a potential to impact park soundscapes. Seek cooperating agency status when appropriate.
- Work with FAA and the NPS Natural Sounds Program to develop an air tour management plan in accordance with Public Law 106-181.
- Work with the Department of Defense to address soundscape issues with military overflights.
- Work with FAA, state and local government, and other parties in developing plans for new or expanded airport facilities, or altered flight routes, that can potentially affect the park.
- Work with adjacent land owners, inholders, or other land management jurisdictions to mitigate impacts of sources of noise from those lands.
- Encourage the use of new, quieter snowmobile and OHV technology.
- Seek active partners to develop and implement quieter technology in and out of ZNP.

Alternatives Considered

The EA evaluates two alternatives: Alternative A - No Action and Alternative B – Proposed Action/Preferred Alternative. Alternative A represents no change from current management direction or level of management intensity and involves continuing with the present course of action expressed in existing park management documents. Alternative B includes the development of a management plan that describes appropriate and inappropriate sound sources, soundscape objectives, soundscape indicators and standards, monitoring approaches and protocols, and methods for modifying the plan using an adaptive management approach.

Environmentally Preferred Alternative

Alternative B is the environmentally preferred alternative. The environmentally preferred alternative is determined by applying the six criteria suggested in §101 the National Environmental Policy Act. According to these criteria, the environmentally preferred alternative should 1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; 2) assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings; 3) attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences; 4) preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice; 5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and 6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative B (Proposed Action) is the environmentally preferred alternative because it best addresses the six evaluation factors for the following reasons.

- It fulfills the responsibilities of each generation as trustee of the environment for succeeding generations and ensures for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings by proactively monitoring the park soundscape to determine if standards identified in Alternative B to protect the soundscape are being met. Alternative B also identifies management actions that could be implemented to meet the goal of protecting the park soundscape.
- Alternative B attains the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences by identifying human-caused sound sources that are appropriate to the management of the

park. Alternative B also identifies potential management actions to mitigate any undesirable or unintended consequences of those sound sources.

- Alternative B preserves the important historic, cultural, and natural aspects of our national heritage through the actions identified to protect the park soundscape.
- Alternative B achieves a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities by identifying human-caused sound sources appropriate for the management and enjoyment of the park and identifying actions to mitigate any unwanted adverse effects of those sounds.
- Alternative B neither adds, to or takes away from the NPS's ability to achieve balance between population and resource use or enhance the quality of renewable resources.

Why the Preferred Alternative Will Not Have a Significant Effect on the Human Environment

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Implementation of the preferred (selected) alternative will result mostly in short- and long-term beneficial impacts. Because there is variation in natural ambient levels and acoustic conditions throughout the park, the intensity of the beneficial impact will vary. In Frontcountry areas, where existing noise levels are higher the effect will be greater. In areas with lower natural ambient levels and fewer noise events, the intensity of beneficial impacts will be less. With the positive changes in acoustic conditions, through the implementation of the SMP, the soundscape resource will move toward achieving the identified acoustic objectives leading to long-term, moderate beneficial impacts to visitor experience. Visitors will be able to more fully experience the park – the rustling of leaves, the call of the canyon wren, water echoing off canyon walls.

Wildlife will also be exposed to reduced levels of noise and have greater opportunities to experience important sounds related to communication, predator prey relationships, mate selection, territory establishment and other functions. These changes are short- and long-term moderate and beneficial.

Wilderness characteristics and values will be enhanced by implementation of the preferred alternative. Wilderness will be more *untrammelled by man*, and *the imprint of man's work* will be less apparent and noticeable. A decrease in noise will enhance *the primeval character and influence of wilderness; the preservation of natural conditions (including the lack of man-made noise); and outstanding opportunities for solitude and a primitive and unconfined type of recreational experience*. The effects from changes in the acoustic environment will be long-term, moderate and beneficial.

Activities to build, maintain, or restore park resources and facilities will have both beneficial and adverse effects from the implementation of the preferred alternative. Adverse effects could include the time it takes to learn and use equipment with quiet technology and the limitation on the hours of the day where noise making machinery and tools can be used. These impacts will be short-term because staff will become more proficient with the quieter tools and can better schedule work around the quiet hours. Beneficial effects include minimizing staff, visitors, and wildlife exposure to noise. Overall, the effects of implementing the preferred alternative will result in minor short-term

adverse impacts to park operations however benefits to soundscapes, visitor experience, and wildlife from reduced noise levels will help to offset any adverse impacts to park operations.

The degree to which the proposed action affects public health or safety

Research has documented several adverse health effects from human-caused noise including: hearing impairment, interference with speech, interference with sleep, cardiovascular stress, anxiety, impaired task performance, and negative social behavior.

The preferred alternative will have an overall long-term beneficial effect on public health and safety by reducing human-caused noise. Implementing the standards and the management actions designed to mitigate the effects of human-caused noise identified in the plan will lower the human-caused sound level, decrease the amount of time humans and animals are exposed to noise, decrease the amount time that speech is interfered with because of loud noise, and decrease the number of noise events that interrupt sleep. These all have a beneficial minor to moderate short- and long-term effect on the health and safety of staff and visitors.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

The preferred alternative will not have measurable impacts on the unique characteristics of the geographic area including park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. There are no prime or unique farmlands within or the near vicinity of the park. The actions identified in the SMP will not adversely affect unique characteristics of the geographic area or ecologically critical areas. Effects to historic and cultural resources are discussed later in this document.

The actions identified in the SMP will not affect wetland characteristics or functions. Wetlands will not be degraded or lost due to the implementation of the proposed actions in the SMP.

In 2009 Congress designated over 140 miles of river and tributaries within the park as wild and scenic rivers. The majority of the designated rivers are within the Wilderness Zone. The proposed actions identified in the SMP will not adversely impact the free-flowing condition, water quality, or the outstandingly remarkable values for which the river were designated.

The degree to which the effects on the quality of the human environment are likely to be highly controversial

The soundscape objectives, standards and management actions identified in the SMP are intended to improve the soundscape conditions on the park. The majority of the public who commented on the SMP were in favor of this protection. A segment of this group thought that more protection should be afforded to the Wilderness Zone. The standards identified for the Wilderness Zone were based on existing data and NPS direction that standards must be attainable. The SMP also provides a monitoring and adaptive management approach that will allow management to review data collected and if standards are achieved, they can be reassessed to allow for continued improvement of soundscape conditions over time.

The degree to which the possible effects on the quality on the human environment are highly uncertain or involve unique or unknown risks

The effects of implementing a soundscape management plan are fairly straightforward and do not pose uncertainties. The environmental process has not identified any effects that may involve highly unique or unknown risks.

The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

The soundscape objectives, standards, and management actions identified in the SMP are specific to ZNP. They are based on the park enabling legislation, park purposes, significance and goals as identified in the GMP (2001), the desired conditions identified in the GMP, and other pertinent park planning and management documents. While other units of the NPS may use the SMP format and possibly the indicators, each NPS unit will craft their plan to meet their park specific needs. So this SMP is not expected to set a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

Cumulative effects were analyzed in the environmental assessment and no significant cumulative impacts were identified. Cumulative effects from implementing the SMP were generally beneficial.

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The actions described in this EA will protect archeological resources by decreasing human-caused noise throughout the park. This will result in no adverse effect on archeological resources. The actions described in this EA will improve the ability for visitors to enjoy and learn about historic structures by limiting the amount and level of human-caused noise in these areas. There will be no effect on the structures themselves; which will result in a no adverse effect on historic structures. The actions described in this EA will have no adverse effect on cultural landscapes. There will be some positive effect on cultural landscapes because of the decrease in human-caused noise park wide as described in the plan. A letter dated August 26, 2010 from the Utah State Historic Preservation Office confirms the NPS determination of *no adverse effect* from the actions proposed in the plan as per §106 of the National Historic Preservation Act.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

A letter from the U.S. Fish and Wildlife Service dated August 16, 2010 concurred with park findings that actions outlined in the SMP are not likely to adversely affect threatened or endangered species or their habitats. Implementation of actions to protect soundscapes will protect an animal's ability to locate food, protect young, and find a mate, which is necessary and beneficial to the survival of species.

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment

The action will not violate any federal, state, or local laws or environmental protection laws.

Appropriate Use

Sections 1.5 and 8.1.2 of NPS *Management Policies* underscore the fact that not all uses are allowable or appropriate in units of the National Park System. The proposed use was screened to determine consistency with applicable laws, executive orders, regulations, and policies; consistency with existing plans for public use and resource management; actual and potential effects to park resources; total costs to the Park Service; and whether the public interest will be served. The soundscape management plan is consistent with the park's general management plan and other related park plans. And the goals, objectives, and management actions outlined in the soundscape management plan are consistent with NPS policy as described in NPS *Management Policies* 2006 §1.5, 8.1.2, and 8.2. With this in mind, the NPS finds that the implementation of a soundscape management plan is appropriate for Zion National Park.

Impairment

National Park Service's *Management Policies, 2006* require analysis of potential effects to determine whether or not actions would impair park resources. The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service (NPS) managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

However, the laws do give the NPS the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS the management discretion to allow certain impacts within park, that discretion is limited by the statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values. An impact to any park resource or value may, but does not necessarily, constitute impairment, but an impact would be more likely to constitute impairment when there is a major or severe adverse effect upon a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be less likely to constitute impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values that are subject to the no-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological

resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;

- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. The NPS's threshold for considering whether there could be impairment is based on whether an action would have major (or significant) effects.

Impairment findings are not necessary for visitor use and experience, socioeconomics, public health and safety, environmental justice, land use, and park operations, because impairment findings relate back to park resources and values, and these impact areas are not generally considered park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. After dismissing the above topics, topics remaining to be evaluated for impairment include: soundscapes; wildlife, threatened and endangered animal species and animal species of concern; and wilderness. The following analysis evaluates whether or not the applicable resources carried forward in this document would be impaired by the preferred alternative.

- **Soundscapes** – Sounds play an important role in maintaining healthy and diverse ecosystems in ZNP. Properly functioning soundscapes are important for animal communication, territory establishment, predator and prey relationships, mating behaviors, nurturing young and effective use of habitat. Visitors to ZNP appreciate and value natural sounds and a soundscape management program will help ensure that the soundscape resource is preserved in an unimpaired condition for future generations. Appropriate sounds and sound levels are essential to ensuring an authentic experience of cultural and traditional landscapes, resources, and values. This SMP outlines an approach to manage and protect the acoustic environment for visitor enjoyment and for wildlife needs. The preferred alternative will result in changes to acoustic conditions that will move the soundscape resource toward the desired condition as outlined in the GMP leading to long-term moderate beneficial effects to the soundscape resource, there will be no impairment to park soundscapes.
- **Wildlife, Threatened and Endangered Animal Species and Animal Species of Concern** – Many animals, insects and birds decipher sounds to find desirable habitat and mates, avoid predators and protect young, establish territories and to meet other basic survival needs. Scientific studies have shown that wildlife can be adversely affected by sounds and sound characteristics that intrude on their habitats. ZNP is home to 6 species of amphibians, 28 species of reptiles, 79 mammal species, 289 bird species, and 7 fish species. Several threatened and endangered animals and animal species of concern either occur within ZNP including: Mexican spotted owl, California condor, and peregrine falcon. The SMP outlines a strategy to protect acoustic conditions for wildlife and the role of the soundscape in ensuring healthy and dynamic ecosystems. As the preferred alternative is implemented, wildlife will be exposed to reduced levels of noise and have greater

opportunities to experience important sounds related to communication, predator prey relationships, mate selection, territory establishment and other functions. The preferred alternative will result in changes to acoustic conditions that will move the soundscape resource toward the desired condition as outlined in the GMP leading to long-term, moderate beneficial impacts to wildlife, there will be no impairment to wildlife.

- **Wilderness** – Zion has 124,462 acres of designated wilderness and 9,047 acres of recommended wilderness. This means that 90 percent of the park is managed as wilderness, as per NPS policy. In managing these areas, the Wilderness Act and NPS policy requires that the characteristics and values associated with wilderness be protected and preserved. This SMP outlines an approach to manage and protect the acoustic environment in wilderness. As the preferred alternative is implemented the amount of time that human-caused sound could be heard will decrease. Maximum and median noise free intervals will increase and deviation from natural ambient will be reduced. As a result wilderness characteristics and values will be enhanced. Wilderness will be *untrammelled by man*, and *the imprint of man's work* will be less apparent and noticeable. A decrease in noise will enhance *the primeval character and influence of wilderness; the preservation of natural conditions (including the lack of man-made noise); and outstanding opportunities for solitude and a primitive and unconfined type of recreational experience*. Overall, changes in acoustic conditions will move the soundscape resource toward the desired condition as outlined in the GMP leading to long-term, moderate beneficial impacts to wilderness characteristics and values.

In addition, mitigation measures as described in the preferred alternative will further lessen the degree of impact to and help promote the protection of these resources. In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of the preferred alternative.

Public Involvement

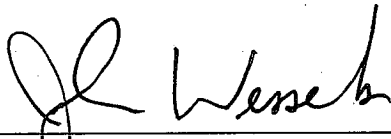
The environmental assessment was made available for public review and comment during a 30-day period ending September 7, 2010. To notify the public of this review period, a press release was mailed to stakeholders, affiliated Native American tribes, interested parties, and newspapers. Copies of the document were sent to certain agencies and interested parties; made available in local repositories; and posted on the NPS Planning, Environment, and Public Comment website. Fifty five comments were received during this review period. Substantive comments are addressed in the Errata Sheets attached to this FONSI. The FONSI and Errata Sheets will be sent to those that requested copies.

Conclusion

As described above, the preferred alternative does not constitute an action meeting the criteria that normally require preparation of an environmental impact statement (EIS). The preferred alternative will not have a significant effect on the human environment. Environmental impacts that could occur are limited in context and intensity, with generally beneficial impacts that range from localized to widespread, short- to long-term, and minor to moderate. There are no unmitigated adverse effects on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, the National Park Service has determined that an EIS is not required for this project and thus will not be prepared.

Approved:



9/17/14

John Wessels
Regional Director, Intermountain Region, National Park Service

Date

Errata Sheets

Soundscape Management Plan

Zion National Park

According to National Park Service (NPS) policy, substantive comments are those that 1) question the accuracy of the information in the environmental assessment (EA), 2) question the adequacy of the environmental analysis, 3) present reasonable alternatives that were not presented in the EA, or 4) cause changes or revisions in the proposal.

Some substantive comments may result in changes to the text of the EA, in which case, they are addressed in the *Text Changes* section of the Errata Sheets. Other substantive comments may require a more thorough explanatory response and are addressed in the *Response to Comments* section. The NPS responds to all substantive comments in either or both of these sections. Below you will find responses to substantive comments and clarifications to the document.

Text Changes

Page 29 - to be added following the first paragraph following Figure 6: According to the NPS Visitor Experience and Resource Protection (VERP) Handbook, standards represent the point at which management must take action to protect the resource. Standards do not represent ideal resource conditions, rather standards are defined as the minimally acceptable condition.

According to the VERP Handbook (p. 59 emphasis added):

“...it may be determined that the amount of bare ground at campsites is a key measure of the naturalness of resource condition. Thus, the amount of bare ground at campsites may be a good resource indicator. Moreover, it may be determined that when the amount of bare ground exceeds 50% of the total campsite area, most visitors and agency personnel believe that impacts are **unacceptable**. Thus, the resource standard for bare ground at campsites in zone ‘x’ may be set at 50% of the total campsite area.

Similarly, it may be determined that the number of encounters with other groups along trails is a key measure of the opportunities for solitude. Thus, the number of trail encounters with other groups per day may be a good social indicator. Moreover, most visitors may report that once they encounter more than three groups along a trail per day, they no longer have an **acceptable** level of solitude. Thus, the social standard for the number of trail encounters per day in zone ‘y’ may be set at three— **a minimally acceptable social condition...**

The reason for standards is to 'draw a line in the sand,' which clearly shows when conditions are unacceptable and action must be taken. “

Additionally, an important characteristic of effective standards is that they must be realistic and attainable. According to the VERP Handbook,

“Standards must reflect conditions that are attainable. In some cases, managers or the public may prefer conditions that are better than can realistically be achieved. For example, an unrealistically low standard for encounter rates that prohibits most of the visitors from using the resource may not be politically feasible. Moreover, such extreme measures that would place serious restrictions on visitors may not be ethically defensible unless an

extraordinary situation, such as imminent loss of a significant resource, would justify the action.

In some cases where existing conditions are significantly below standards (in a highly impacted natural area, for example), strict standards could be set even though achieving the standard could be many years in the future. A standard in this situation would be used to measure long-term improvement in conditions."

Data collected at Zion National Park (ZNP) and presented in the Affected Environment section of the EA indicate that acoustic conditions are highly impacted by noise from aircraft overflights and other sources. The standards presented in Tables 5 and 6 represent a considerable improvement to those conditions. The standards represent realistic and attainable conditions, however achieving the referenced conditions will likely take several years of focused and effective management actions including working closely and cooperatively with Federal Aviation Administration (FAA) to address noise effects from overflights.

As discussed in the Monitoring and Adaptive Management section, the Soundscape Management Plan (SMP) also incorporates an adaptive management approach to reassessing standards. If acoustic monitoring indicates that standards established in this plan are being achieved, adaptive management dictates that a reassessment of the standards be conducted to determine if revisions to the standards are warranted. Other factors such as changes in the availability of new research, an increased understanding of the effects of noise on visitors, wildlife and other resources, a major change in technology, or a significant, unanticipated event occurring inside or outside the park boundary could lead to a reassessment and possible revision of standards. The overall goal of soundscape management at ZNP is protection, restoration, and improvement of acoustic conditions for the enjoyment of future generations. Establishing, monitoring, and reassessing standards when appropriate is an important tool in achieving that goal.

Page 2 - to be added to the end of paragraph 5 under the *Background* heading: For many visitors the ability to hear clearly the delicate and quieter intermittent sounds of nature, the ability to experience interludes of extreme quiet for their own sake, and the opportunity to do so for extended periods of time are important reasons for visiting national parks and one of the driving forces behind the development of this plan.

Page 51 - add as an additional Cumulative Impacts Scenario Section: Increase in Aviation Activity, Projected increases in aviation activity over ZNP are not available. However, based on FAA estimates (FAA 2007), commercial aircraft operations (the sum of air carrier and commuter/air taxi) at all U.S. airports, towered and non-towered, are projected to increase from 28.3 million in 2006 to 37.3 million in 2020. These forecasts imply an average annual growth rate of 2.0 percent for both the intermediate and extended forecast periods, respectively.

The number of general aviation operations at towered and non-towered airports is forecast to increase from 80.9 million in 2006 to 92.1 million in 2020. These forecasts imply an average annual growth rate of 0.9 percent over both the intermediate and extended forecast periods. Much of the growth is the result of increased use of the turbine fleet for business/corporate related flying. For the purposes of the cumulative analysis for this EA, it is assumed that changes in aviation activity over ZNP will be consistent with those at the national level. [Federal Aviation Administration (2007) FAA Long-range Aerospace Forecasts Fiscal Years 2020, 2025 and 2030]

Pages 54, 57, 59, 61, 63 - to be added to the cumulative impacts analysis for all topics

analyzed: It is assumed that an increase in any air traffic over the park, whether they are high-altitude air carrier/commercial or general aviation, would add to the human-caused noise in the park. The noise levels, amount of time audible, and the number of noise events these aircraft would produce would be a component of the data collected through the park acoustic monitoring program. This data would be included in the analysis process to determine if standards are being met. As identified in the management actions, the park would collaborate with the Department of Defense to address soundscape issues with military overflights and with FAA, state and local government, and other parties in developing plans for new or expanded airport facilities, or altered flight routes, that can potentially affect the park. This and other mitigation identified in the plan would partially mitigate these effects which would long-term beneficial and minor.

Response to Comments

Comment 1 – Aviation noise trend should be quantitatively estimated, for baseline purposes at least as far back as 1978, using available FAA air traffic data records, along with more current NPS data.

Response 1 – The ZNP SMP/EA and the ZNP Acoustical Monitoring Summary Report, which is incorporated by reference in the EA, contain information regarding the aircraft noise levels and percentage of time that aircraft are audible based on data collected by Wyle Labs in 2001. While aviation noise trend-line data would provide an additional layer of data, it is not essential to a reasoned choice among alternatives.

Comment 2 – Concerned about the use of the term desired condition. And we suggest substituting the term "Interim Acceptable Condition," in naming this standard, for the life of this plan.

Response 2 – The desired condition referenced in the SMP on page 23 is the Natural Sounds desired condition from the ZNP General Management Plan (GMP) (page 12 of the GMP). As stated in the SMP "The [SMP] objectives support the overall desired condition for soundscape management."

A detailed explanation of the definition and use of standards in park planning was added to the SMP (refer to the Text Changes above). This explanation clarifies that standards are not expressions of desired conditions. Rather, standards are a threshold that illustrate when conditions are unacceptable and action must be taken. The explanation also indicates that once achieved, standards should be reassessed to promote the continued improvement of soundscape conditions over time. This will be achieved through the implementation of the adaptive management approach outlined in the SMP.

Comment 3 – Director's Order-47 says that "objectives must be consistent with the goal of returning the soundscape to as near natural condition as possible over time – the time frame for said restoration to be established in appropriate planning documents." The ultimate goal for Zion should then also correspond with the longer timeline likely required.

Response 3 – The NPS planning guidance recommends that Implementation Plans such as SMP address the "foreseeable future" or approximately 5 to 10 years. The standards presented in the plan represent considerable improvements to current acoustic conditions in the park. Achieving the referenced conditions will likely take several years of focused and effective management actions including working closely and cooperatively with FAA to address noise effects from overflights. Once standards have been achieved, management can modify the standard to continue progress toward the long-term protection desired condition as stated in the GMP.

Comment 4 – Desired conditions for wilderness ought to be more stringent.

Response 4 – A detailed explanation of the definition and use of standards in park planning was added to the SMP (refer to the Text Changes above). This explanation clarifies that standards are not expressions of desired conditions. Rather, standards are a threshold that illustrate when conditions are unacceptable and action must be taken. The explanation also indicates that once achieved, standards should be reassessed to promote the continued improvement of soundscape conditions over time. This will be accomplished through the implementation of the adaptive management approach outlined in the SMP.

The desired condition referenced in the SMP on page 23 is the Natural Sounds desired condition from the ZNP GMP (page 12 of the GMP). As stated in the SMP “The [SMP] objectives support the overall desired condition for soundscape management.”

Comment 5 – The SMP could still anticipate an extended timeline/schedule and circumstances for bringing inappropriate audibility levels down, first to the levels which existed when NPS recommended Wilderness designation in 1978, eventually to 0% time audible.

Response 5 – As discussed in the Monitoring and Adaptive Management section, the plan incorporates an adaptive management approach to reassessing standards over time. If acoustic monitoring indicates that standards established in this plan are being achieved, adaptive management dictates that a reassessment of the standards be conducted to determine if revisions to the standards are warranted. Other factors such as changes in the availability of new research, an increased understanding of the effects of noise on visitors, wildlife and other resources, a major change in technology, or a significant, unanticipated event occurring inside or outside the park boundary could lead to a reassessment and possible revision of standards. The overall goal of soundscape management at ZNP is protection, restoration, and improvement of acoustic conditions for the enjoyment of future generations. Establishing, monitoring, and reassessing standards when appropriate is an important tool in achieving that goal.

Comment 6 – It does not require amending the GMP or producing a new GMP, to develop new audibility levels. By 2040, most likely 2030, the Park will come under a new GMP, which could specify stringent quantitative standards, such as those shown for 2040 and 2050.

Response 6 – The NPS planning guidance recommends that Implementation Plans such as SMPs address the “foreseeable future” or approximately 5 to 10 years. The standards presented in the plan represent considerable improvements to current acoustic conditions in the park. Achieving the referenced conditions will likely take several years of focused and effective management actions including working closely and cooperatively with FAA to address noise effects from overflights.

Comment 7 – If the FAA does not cooperate with noise abatement needs, the Wilderness Zone faces “impairment”, or “substantial impairment”, a subject which would need to be carried forth into Secretarial level discussions between Department of the Interior and Department of Transportation (DOT), founded on reference to The National Parks Organic Act and DOT Act Sec. 4(f)/303(c) respectively.

Response 7 – This comment is beyond the scope of this document, other than the discussion on impairment described in Response 9. The focus of this plan is the overall management and protection of the soundscape in ZNP. The DOT is not approving the use of land through any of the decisions made in the SMP. So, the Section 4(f) of the DOT Act of 1966 does not apply to any decisions in this document.

Comment 8 – One key GMP desired condition statement, omitted from the SMPs Wilderness section on p. 49, could be included in the final plan: "The sounds of civilization are generally confined to developed areas."

Response 8 – This statement is currently in the SMP on page 23 in reference to the overall desired conditions for soundscape management, as expressed in the GMP.

Comment 9 – How much could soundscapes degrade, from outside sources, beyond NPS' own "unacceptable" standard, before a determination of "Impairment for Wilderness", or even simply "Impairment of the Park", would be made?

Response 9 – Implementation of the SMP is designed to prevent conditions from approaching unacceptable levels thereby protecting the resource from possible impairment. As discussed in the Monitoring and Adaptive Management section, the plan incorporates an adaptive management approach to reassessing standards over time. If acoustic monitoring indicates that standards established in this plan are not being achieved, then additional management actions could be implemented to address the new inappropriate noise source. As part of the SMP, the GMP, and the St. George Municipal Airport EIS the park has committed to work with FAA, state and local governments, and the Department of Defense to address the effects of aviation overflights on the park. The goal of the park is to minimize the adverse effects on the park soundscape.

Comment 10 – We suggest a helpful expansion of the second bullet on Page "i", (Appendix 1: Impairment), which would then read:

- Key to the natural *or inspirational* or cultural integrity of the park (Emphasis supplied)

Response 10 – The referenced text is language excerpted directly from NPS guidance on impairment and is not subject to revision.

Comment 11 – Also into same Appendix 1: Impairment, at top of page iii, consider inserting italicized words: "As the preferred alternative is implemented, the amount of time that human-caused sound could be heard would decrease to interim acceptable levels, pending longer-range attainment of ultimately desired levels."

Response 11 – This comment is addressed in a detailed explanation of the definition and use of standards in park planning that was added to the SMP. This explanation indicates that once achieved, standards should be reassessed to promote the continued improvement of soundscape conditions over time. As discussed in the Monitoring and Adaptive Management section, the plan incorporates an adaptive management approach to reassessing standards over time. If acoustic monitoring indicates that standards established in this plan are being achieved, adaptive management dictates that a reassessment of the standards be conducted to determine if revisions to the standards are warranted. Other factors such as changes in the availability of new research, an increased understanding of the effects of noise on visitors, wildlife and other resources, a major change in technology, or a significant, unanticipated event occurring inside or outside the park boundary could lead to a reassessment and possible revision of standards. The overall goal of soundscape management at ZNP is protection, restoration, and improvement of acoustic conditions for the enjoyment of future generations. Establishing, monitoring, and reassessing standards when appropriate is an important tool in achieving that goal.

Comment 12 – The noise-free interval (NFI) is set at too weak a level (7 minutes) to be more than Interim Acceptable, in context of ongoing moves towards Wilderness Quality "desired condition."

Response 12 – Current conditions at Wilderness Zone monitoring sites identify median noise-free intervals ranging from approximately 2 to 3 minutes. The 7 minute standard for a median noise-free interval represents a more than a doubling of current NFI levels at most sites. Similarly, under current conditions, noise is often audible from 50% to 80% of the time at Wilderness sites. The hourly percent time audible standard of 25% is equivalent to reducing current audibility levels in half at many sites. An important characteristic of effective standards is that they must be realistic and attainable. The standards presented in the plan represent considerable improvements to current acoustic conditions in the park that are achievable during the time frame of the plan. The standards represent realistic and attainable conditions, however achieving the referenced conditions will likely take several years of focused and effective management actions including working closely and cooperatively with FAA to address noise effects from overflights. As discussed in the Monitoring and Adaptive Management section, the plan incorporates an adaptive management approach to reassess standards over time. If acoustic monitoring indicates that standards established in this plan are being achieved, adaptive management dictates that a reassessment of the standards be conducted to determine if revisions to the standards are warranted.

Comment 13 – The NPS has correctly attempted to integrate overall loudness into this Plan. A "sound intensity index", such as proposed recently by NPS in assessing the noise impacts of the Jackson Hole airport, may provide the public with something more geographically comprehensible, integrating per cent time audible with Leq, as the basis for a map-able composite index figure.

Response 13 – The NPS investigated a sound intensity index (SII) to summarize noise exposure with a single number. After substantial discussion, NPS found that SII was more difficult to interpret than other metrics, and less protective of park resources than Leq.

Comment 14 – The 35 dBA level, that number above (NA) is a very useful indicator in conveying the repetitiousness and frequency of fragmenting, continually repetitive noise events at levels noticeably above the audibility threshold. NA35 is a good indicator re degrading of quiet areas such as Wilderness. Such repetition and fragmentation, over time, cumulatively impairs experience of daytime visitors to the Wilderness Zone.

Response 14 – Time above 35 dBA (TA35) and number above 35 dBA (NA35) are both informative measures. However, in general TA35 and NA35 are very highly correlated metrics. When selecting among a large number of potential indicators to monitor, it is often advisable to identify those that are highly correlated and eliminate one of them from consideration. Park managers decided not to use NA35 because other metrics such as noise-free interval provided some of the information related to repetition and fragmentation that NA35 would have contributed. Based on the adaptive management process, park managers may decide to modify indicators if better ways are found to measure changes in resource conditions, if the indicators prove not to be sufficiently sensitive to measure changes ... or if the indicators prove not to be cost-effective to check regularly (VERP Handbook).

Comment 15 – All this is amenable to VERP analysis, which should be conducted in the Wilderness Zone, just as was done for "encounters", in the Park's Backcountry Management Plan.

Response 15 – Although VERP provides insight and guidance on the development of indicators and standards for resource protection, the process is much more comprehensive, focusing on visitor use impacts. According to the VERP Handbook, VERP is “a planning and management framework that focuses on visitor use impacts on the visitor experience and the park resources. These impacts are primarily attributable to visitor behavior, use levels, types of use, timing of use, and location of use.” In the case of soundscapes, impacts are not always attributable to visitors. Noise from adjacent lands and park airspace also contributes to the acoustic environment. While VERP is useful in some aspects of soundscape planning, the framework with its focus on visitor impacts and general management planning is not entirely appropriate for this plan.

Comment 16 – So again, we recommend that the NPS introduce NA35, not merely time above 35 (TA35), as a supplemental metric, and map it onto grids and location points for Zion, in the Final EA. The FAA already published detailed number above data within its EIS for St. George Airport. So, color noise contour maps using NA35 should help with the final soundscape management EA, vividly illustrating current conditions, at least, with comparison with plan objectives, also mapped. The public wants to know "How Many" and "How Loud", and as Wyle Labs has for some time confirmed, the number above metric, especially when mapped, or charted, is very helpful.

Response 16 – Currently, spatial representation of existing acoustic conditions from onsite measurement is not possible over broad geographic areas without the use of an acoustic model for which noise characteristics and sources must be known. Characterizations of acoustic conditions are only valid within close proximity of measurement locations. As distance from the measurement location increases environmental factors such as vegetation, topography, and atmospheric conditions affect acoustic levels. As a result, conditions determined through on-site measurement cannot be represented spatially.

Comment 17 – Support for Alternative A, no changes in management, and do not spend money on soundscape management.

Response 17 – Acoustical monitoring by staff at ZNP indicates that the soundscape is being adversely affected by noise from overflights, vehicles, park operations and other sources. In accordance with the Organic Act, NPS Management Policies 2006, Director’s Order-47, the ZNP GMP, and associated guidance documents, NPS is required to protect, restore, and preserve the acoustical environment for the benefit of future generations. In response to this requirement, ZNP has developed a SMP to better understand acoustic conditions at the park and to establish management objectives, indicators, standards, and monitoring protocols to protect the soundscape resource. The plan was developed using base funding from the park and the NPS Natural Sounds Program and does not include enforceable regulations, rules, or restrictions for park visitors. The purpose is to provide a basic framework for making decisions on issues that could affect the acoustical environment.

Comment 18 – Alternative B is not strict enough, especially for the Wilderness Zone.

Response 18 – A detailed explanation of the definition and use of standards in park planning was added to the SMP (refer to Text Changes above). This explanation clarifies that standards are not expressions of desired conditions or goals. Rather, standards are expressions of minimally acceptable conditions. The explanation also indicates that once achieved, standards should be reassessed to promote the continued improvement of soundscape conditions over time. The plan incorporates an adaptive management approach to reassessing standards over time. If acoustic monitoring indicates that standards established in this plan are being achieved, adaptive

management dictates that a reassessment of the standards be conducted to determine if revisions to the standards are warranted. Other factors such as changes in the availability of new research, an increased understanding of the effects of noise on visitors, wildlife and other resources, a major change in technology, or a significant, unanticipated event occurring inside or outside the park boundary could lead to a reassessment and possible revision of standards. The overall goal of soundscape management at ZNP is protection, restoration, and improvement of acoustic conditions for the enjoyment of future generations. Establishing, monitoring, and reassessing standards when appropriate is an important tool in achieving that goal.

Current conditions at Wilderness Zone monitoring sites provide for median noise-free intervals ranging from approximately 2 to 3 minutes. The 7 minute standard for a median noise-free interval represents a more than a doubling of current NFI levels at most sites. Similarly, under current conditions, noise is often audible from 50% to 80% of the time at Wilderness sites. The hourly percent time audible standard of 25% is equivalent to reducing current audibility levels in half at many sites. An important characteristic of effective standards is that they must be realistic and attainable. The standards presented in the plan represent considerable improvements to current acoustic conditions in the park that are achievable during the time frame of the plan. The standards represent realistic and attainable conditions, however achieving the referenced conditions will likely take several years of focused and effective management actions including working closely and cooperatively with FAA to address noise effects from overflights.

Comment 19 – The plan should have addressed a more protective alternative.

Response 19 – The desired condition for the SMP came from the ZNP GMP which states the following for Natural Sounds: "Natural sounds predominate in Zion. Visitors have opportunities throughout the park to experience natural sounds in an unimpaired condition. The sounds of civilization are generally confined to developed areas."

During internal scoping, park staff considered the variables in the plan that could be adjusted to create different alternatives. Those variables included the standards and management actions. When considering additional alternatives we discussed the implications of imposing stricter standards and identifying standards that were more lenient.

The more lenient standards would not meet the purpose and need for the SMP or the desired condition from the GMP because they would not provide even the existing level of protection, so they were dismissed from further analysis.

To determine if stricter standards were appropriate we reviewed the acoustic data collected in 2000 and 2001. Analysis of this data indicated that human-caused sounds were audible for 20% to 40% of the time period that data were collected and the hourly percent time audible levels for the daytime ranged from 20% to 80%. The audibility standards provided in the SMP represent a reduction of existing levels by up to 50%. We felt that with a great deal of effort, the park could attain this goal by changing management practices. We felt that any stricter standards would be unattainable unless significant changes were made which would adversely affect visitor use. Standards could be so strict as to not allow maintenance of facilities, which could adversely affect visitor use and experience.

The NPS has developed a framework to address visitor management and carrying capacity issues – Visitor Experience and Resource Protection (VERP). VERP states "Standards must reflect conditions that are attainable." Stricter acoustic standards would not be attainable without a substantial

reduction in visitor use which does not meet the purpose and need or the objectives of the SMP, the GMP, or the Organic Act. Analyzing stricter standards which could not be attained, does not seem reasonable or show common sense. CEQ defines reasonable alternatives as those that are economically and technically feasible and that show evidence of common sense. For these reasons stricter standards were dismissed from further consideration in the EA.

Comment 20 – Loud motorcycles should be addressed.

Response 20 – The SMP includes the following management actions to address excessive noise from motorcycles:

- Encourage quiet and courteous riding through education.
- Discourage use of modified exhausts that increase noise levels.
- Require groups of organized riders to acquire a special use permit.
- Any applications for organized rides must go through the appropriate National Environmental Policy Act (NEPA) analysis.
- Enforce existing noise ordinances (36 CFR §2.12).

The purpose of the SMP is to provide a management framework for understanding acoustic conditions at the park and establishing management objectives, indicators, standards, and monitoring protocols to protect the soundscape resource. As such, the Plan is designed to help guide park decision making and is not the appropriate mechanism for establishing regulations or addressing specific enforcement mechanisms related to noise.

Comment 21 – Several comments concerning aircraft overflights such as: disturbed by aircraft in the park; low flying planes should not be allowed; prohibit flight-seeing for business or pleasure.

Response 21 – The plan includes the following direction concerning noise from aircraft overflights. For NPS Administrative Use:

- In designated and recommended wilderness, the use of motorized equipment will conform to the requirements of the Wilderness Act, minimum requirements procedures, and related NPS policies (DO-41: *Wilderness Preservation and Management*).
- Combine flights whenever possible.
- Require flight following and reporting for all administrative flights.
- Consider quiet technology when replacing or contracting for aircraft. Noise will be a consideration when procuring and using park equipment. Prior to purchase, research will be conducted in regard to the best available technology and the quietest equipment will be identified and purchased unless there is an overwhelming reason not to.
- Minimize noise generated by park management activities by strictly regulating NPS and concession administrative use of noise producing machinery, including aircraft.
- Limit the hours of operation of motorized equipment from 9:00 am to 5:00 pm. Protecting dawn, dusk and nighttime quiet.
- Any applications for commercial filming permits must comply with existing safety and aviation restrictions and must go through the appropriate NEPA analysis.
- Enforce existing noise ordinances (36 CFR §2.12).

The NPS will also collaborate with adjacent property owners, appropriate federal, state, and local agencies, and organizations with the following:

- Engage in the planning efforts of other agencies in which there is a potential to impact park soundscapes. Seek cooperating agency status when appropriate.

- Work with FAA and the NPS Natural Sounds Program to develop an air tour management plan in accordance with Public Law 106-181.
- Work with the Department of Defense to address soundscape issues with military overflights.
- Work with FAA, state and local government, and other parties in developing plans for new or expanded airport facilities, or altered flight routes, that can potentially affect the park.
- Seek active partners to develop and implement quieter technology in and out of ZNP.

The purpose of the SMP is to provide a management framework for understanding acoustic conditions at the park and establishing management objectives, indicators, standards, and monitoring protocols to protect the soundscape resource. As such, the Plan is designed to help guide park decision making and is not the appropriate mechanism for establishing regulations or addressing specific enforcement mechanisms related to aircraft noise.

Comment 22 – Request for comment period extension so that the ZNP SMP comment period could overlap with Grand Canyon Overflights Plan Draft EIS comment period so that the two documents could be compared, especially important are the impact thresholds.

Response 22 – This request is based on the belief that information in the Grand Canyon Overflights Plan (GCOP) would be useful in determining the appropriateness of desired soundscape conditions and standards in the ZNP SMP, or vice versa. However, appropriate standards at ZNP, using numerous metrics and examining all potential noise sources, are not dependent on *impact thresholds* developed at Grand Canyon to assess a single source (air tours). In fact, because the standards for soundscape preservation at a park is dependent on that specific park’s management objectives, enabling legislation, and other plans. Impact thresholds developed by Grand Canyon for the overflights plan bear little, if any, relevance to the standards developed by ZNP. Consequently, a desire to compare the GCOP with the ZNP SMP does not justify extending the comment period to 90 days.

The relevancy of thresholds developed to assess impacts from air tours over Grand Canyon to the development of thresholds in the ZNP plan is limited due to differences in the purposes, scopes, and contexts of the GCOP and the ZNP SMP:

- The primary goals of the GCOP are management of air tours and substantial restoration of natural quiet. The ZNP SMP considers all sources of noise in the park, establishes quality objectives and standards, and proposes management actions to ensure that quality standards are achieved. This represents a scope that is much more broad and comprehensive than managing a single noise source.
- The Grand Canyon Overflights Act legislatively mandates the goal of achieving substantial restoration of natural quiet (SRNQ). The purpose of the ZNP SMP is to develop and define objectives and is not subject to the SRNQ requirement. The primary goal of the ZNP SMP is to implement a long-term management program to ensure that soundscape resources are protected for the enjoyment of future generations.
- Air tours are not a primary or substantial source of noise at ZNP. Interim operating authority for Zion is 782 flights per year as compared to approximately 90,000 flights per year at Grand Canyon.
- The Grand Canyon plan does not address the effects of other noise sources in the park (or does so only indirectly).
- The size of the park, uses, types of visitors, length of stay and management objectives of the parks are different.