

**Grand Canyon Working Group
Seventh Meeting
September 27 - 28, 2006
Crowne Plaza Hotel
Phoenix, Arizona**

Final Summary of Discussion and Agreements Reached

Facilitators/recorders: Lucy Moore, Ed Moreno, Tahnee Robertson

Members Present:

Lynne Pickard, FAA, Working Group Co-chair
Karen Trevino, NPS, Working Group Co-chair
Katherine Andrus, Air Transport Association (day one only)
Marklyn Chee, alternate for Alan Downer, Navajo Nation
Roger Clark, Grand Canyon Trust
Patrick Dallas, alternate for Roland Manakaja, Havasupai Tribe
Roxane George, Sierra Club
Mark Grisham, Grand Canyon River Outfitters Association
Elling Halvorson, Papillon Airways
Cliff Langness, King Airlines, Inc. and Westwind Aviation
Tom Martin, alternate for Doug Nering, Grand Canyon Hikers & Backpackers Assoc.
David Nimkin, National Parks and Conservation Association
Alan Stephen, Scenic and Grand Canyon Airlines, Inc.
Rick Eisenreich, alternate for John Sullivan, Sundance Helicopters, Inc.
Charlie Vaughn, Hualapai Tribe
Heidi Williams, Aircraft Owners and Pilots Association
David Yeaman, Grand Canyon Private Boaters Association

Superintendent's Chair:

Joe Alston, Grand Canyon National Park

Member/Alternate Absent:

Bill Austin, US Fish and Wildlife Service
Bob Henderson, alternate for Alan Zusman, Naval Facilities Engineering Command
Leigh Kuwanwisiwma, Hopi Tribe

Summary of Agreements:

Consensus: A subgroup was created to develop a plan for how to proceed, given the high altitude conundrum. Members are: Katherine Andrus (or designee, tentative), Barry Brayer, Roger Clark, Roxane George, Ken McMullen, David Nimkin, Alan Stephen, Charlie Vaughn

Agreement: Although consensus was not sought, the group agreed to let the facilitator finalize the summary of the July 2006 meeting, after receiving corrections by October 6 from Stacy Howard and Jim McCarthy, and any others who were at the meeting.

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DAY ONE:

Welcome and Introductions: Lucy Moore welcomed members, alternates, staff and observers to the seventh meeting of the Grand Canyon Working Group. She introduced David Nimkin, newly appointed member representing National Parks Conservation Association.

Approval of Meeting Summary: The summary of meeting # 6 was partially reviewed. Jim McCarthy asked for elaboration on the East End Report as stated on page 13. He felt it was misleading to say that seasonal closures and flying below the rim had been "taken off the table." He asked that the summary reflect that during that subgroup meeting he strongly objected to taking seasonal closures off the table, and that if those options were off the table then flying 2,000 feet lower in the Dragon Corridor should be taken off the table as well. Lucy pointed out that the summary is intended to be a summary of what was said in the Working Group meetings, not the subgroups, and that she had presented the East End Report as stated in the summary. She suggested that she and Jim craft alternate language, or create a footnote, that would better reflect the discussion in the subgroup. [Later in the meeting, Alan Stephen acknowledged that Jim was correct in his memory of the East End subgroup discussion.]

Stacy Howard asked for an additional statement on page 14 that would clarify that AOPA favored the Working Group participating in any development of legislation to address the Group's conundrum. She agreed to provide that statement to Lucy later.

Lucy asked those who had been present at the sixth meeting to email her any other suggested corrections in the minutes. Jim McCarthy and Stacy Howard will email changes, and others are welcome to do so before October 6.

Facilitator Remarks: Lucy reminded the group that at the last meeting co-chairs were asked to address the need for airport and other high altitude interests to have access to the Working Group process. The result is that McCarran International Airport, Phoenix Sky Harbor Airport, and the National Business Aviation Association are entitled to:

- Participate in subgroup meetings (East End and West End)
- Sit at the table with members during discussions related to high altitude interests
- Address the Working Group prior to any consensus consideration on an issue related to high altitude

Lucy welcomed Mike Loghides (McCarran), George Sullivan (Sky Harbor), and Bob Lamond (NBAA) and invited their participation in accordance with the above agreement.

Agenda Review: Members reviewed the agenda. There were no changes.

Review of Task List from Previous Meeting: The following items are outstanding from the task list from the previous meeting:

- Green 4 and Blue 2 routes: Test flights were made for these routes, but further negotiation with Hualapai is necessary before a request for modeling can be made.
- The 2002 Court decision is not yet on the website. Tahnee offered to copy it for those who wished to see it now. Otherwise, it will be on the website as soon as possible.

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- A new working document for the East End and West End subgroups was not created. They used the original matrix of proposals to review the issues remaining.
- Joe Alston will discuss the Bar 10 curfew with Hualapai representatives.
- Although pilots of the test flights notified FAA, and they in turn notified NPS, the routes were considered not different from existing routes, and recreational users were not notified. The group discussed the need for a notification process to insure that recreational users are notified when any unusual flights are scheduled. The Hualapai representative noted that when flights occur over sovereign land, the tribe notifies the Park Service as a courtesy.

[Sundance Helicopters announced that they were currently flying an IMAX filming helicopter in the Canyon under a 7711 permit, in conjunction with Hualapai, Navajo, Havasupai and FAA. Flights will continue through October 2.]

Lucy checked to be sure a new meeting notification procedure was working, and that observers had received emails concerning logistics and agenda for this meeting. There were no problems among those present.

Materials and Handouts: Tahnee reviewed materials for this meeting. The Volpe MITRE report was posted on the website a week before the meeting. Tahnee offered to make black and white copies of the MITRE report for those who requested it. The Volpe presentation was posted during the meeting. In addition, Grace Ellis had handouts for the NEPA presentation.

NEPA Contractor: Barbara (B.J.) Johnson, Project Supervisor for the NEPA analysis, introduced herself. Her employer, the Denver Service Center, is a consulting arm of the Park Service and has extensive experience writing NEPA documents. Barbara does not yet have a project manager, but she is committed to producing a high quality document – one that not only can be signed by both agencies, but also one that they will want to sign. Barbara added that although she had to leave the meeting, her boss, Nat Kirkendall, would be attending both days. Barbara has worked for 20 years with FAA, as well as with NPS and tribes.

MITRE Presentation: [available on the website] Thor Abrahamsen and Lee Brown presented the results of the MITRE analysis of safety and economic impacts to the National Airspace System if all high altitude commercial flights were removed from the polygon submitted for analysis. The study focused on flights above 18,000 feet, which is the break point for different levels of control by FAA. Above 18,000 feet is Class A airspace, requiring an IFR flight plan and controlled by FAA; below 18,000 different rules apply. The study looked at four daytime scenarios:(1) All flows; (2) Only Las Vegas flights; (3) Only North-South routes, i.e., mainly Phoenix flights; and (4) Only East-West routes to/from the California Basin area. In assessing impacts, step one was the characterization of the study area, step two was the assessment of first-tier impact due to reroutes, step three was the assessment of second-tier impact, and step four was the identification of potential airspace changes.

Thor reiterated that nearly 130,000 daytime flights cross the polygon annually, and nearly 51,000 nighttime flights. There is also a military aerial refueling route that crosses the canyon, and there would be an uncalculated cost for the military to use another route. The study day was a typically

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busy day, in the 90th percentile. All IFR traffic that is ETMS was included. Slides showed current routes and revised routes.

Thor explained the operational safety concerns connected with revising routes. Air traffic controllers are each responsible for a sector, or specific volume of air space. They can become overloaded if additional routes are added, or if additional flights are concentrated over specific fixes, or if flows are moved closer to other flows. This overloading can be graphed on a chart showing the number of flights each minute and how close that number approaches a maximum line, or MAP line. When the volume approaches the MAP line, controllers are overworked and the FAA has to take measures to reroute airplanes to other sectors.

Weather can also require rerouting. Thor showed a chart identifying severe weather over the canyon by percent of month.

The MITRE analysis concluded that a flight-free zone at 18,000 feet and above over the heart of Grand Canyon National Park would have major safety and efficiency consequences and a significant impact on the users of the airspace. Reroutes would add thousands of extra miles and minutes of extra flying time. Safety of the airspace and operation would be negatively impacted through increased complexity and risks. The FAA would have to take significant tactical and strategic actions to address safety and efficiency issues. Significant airspace redesign covering over 100,000 square miles involving at least six air traffic facilities would be required to address these issues.

Q: Is it possible to compare the cost of moving routes to existing navigational aid points and the cost of establishing new points nearer the boundary of the polygon.

A: Robert Novia, FAA, answered that the cost of relocating a VOR is in the millions of dollars. In addition, the FAA is transitioning to a satellite-based system, and once that is in place and aircraft are equipped with GPS systems, the ground-based navigational points will be phased out.

Q: What if the polygon were smaller? Would the route changes be able to be sited closer to the Park, saving on additional fuel and time?

A: Thor answered that the route changes would look the same, since they are dependent on linking ground-based navigational aids, and although there are some closer to the Park, the overall impacts would be the same. The only way to reduce those impacts would be to reduce the number of flights.

Q: Do the costs shown include losses due to missed connections?

A: Thor answered no, that the analysis only shows costs for flying additional miles. He added that different kinds of delays have different impacts – like adding aircraft -- that could mean large additional costs. These costs were not within the parameter for this analysis, which used FAA standard figures for costs of operations.

Q: What would be the increase in number and frequency of flights over Peach Springs?

A: Thor responded that flights over Peach Springs would be 3 – 4 minutes apart, and that 57 daytime flights would be added, from a current total of 220 to 277.

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Q: Does the analysis include activities at the new airport at Ivanpah? Would flights over Peach Springs increase to and from that airport?

A: Lee answered that the analysis did not take into account traffic serving the new airport.

Q: Can the analysis describe numerically the difference between impacts to safety and impacts to costs?

A: Lee said that was a very difficult question, and that safety was always the primary concern.

Q: Why does the slide showing actual flights over the canyon indicate a more direct flight path than the redesigned routes, which seem to go deliberately from point to point? Doesn't this indicate some flexibility in where planes actually fly?

A: Thor acknowledged that actual flight tracks fan out from backbone tracks in practice. Also, actual flight tracks may not match filed flight plans for a variety of reasons, including weather. Lee added that analyzing changes in a more detailed manner from flight track to flight track would be much more costly than this study permitted and would show a more severe impact than shown with this method.

Q: If we had given you a different scenario, would you have come up with a different result?

A: Lee answered that different scenarios would have different data results, but similar problems.

Q: Is there any feasible way of meeting substantial restoration of natural quiet through changes to high altitude flights?

A: Lynne answered that FAA does not think it is possible to make the route changes that would be necessary to achieve substantial restoration of natural quiet. Earlier Volpe sensitivity analysis showed we would need to make significant route changes to substantially reduce noise. Cyndy Lee agreed. "We would need to make an even bigger sterile area than the proposed flight free polygon to keep audible aircraft noise away from the park." Lee said that would involve a significant safety impact. Lynne said she believes that there are prospects for some improvement in the future, based on advanced technology to address aircraft source noise and on new avionics that could provide more operational flexibility. She also reiterated that FAA believes that the Overflights Act of 1987 was not intended to include high altitude flights. She believes that without high altitude aircraft noise, "we can substantially restore natural quiet from air tours and related aircraft noise." Air tours have already met the basic threshold, she added, but the substantial restoration goal cannot be met if we include high altitude noise.

Q: What is the number of increased conflicts in a rerouting situation? What is the current number? Is this a 1% increase, or a 200% increase?

A: Lee agreed to provide the percentage increase. She added that airspace is designed so that there is no increase in the number of conflicts. Any increase is considered not acceptable. Lynne added that redesign of airspace such as envisioned by members of the Working Group is not common, contrary to some members' opinions, and that the most common reason is to reduce the number of conflicts.

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- Q: Would it be possible to take one route – Phoenix to Salt Lake City, for instance – and make it more direct, thereby avoiding the canyon? The current route seems to deviate over the canyon needlessly. Particularly during dawn curfew, this change might make a difference.
- A: MITRE answered that the routes are designed to move from one navigational aid to the next without overloading a sector, and that changing that route would probably incur costs. There may also be military airspace involved in the current route.

The Park Service Rep stated that given all the questions about route changes to MITRE, it might be useful to see some real life examples of under what circumstances FAA does move routes and how that compares with this.

Discussion:

Airport Interests: The representative from McCarran Airport said that demand for flights will grow whether or not the new airport is built. Each hotel room produces 320 air passengers a year. Based on projects already in planning stages, the current airports could not accommodate the increased demand.

The representative from Sky Harbor Airport added that when the number of flights exceeds the MAP limit, they must be handled somehow. "The flights don't just go away." Current flights can be handled by the NAS; he acknowledged that he did not know how increased numbers of flights would be handled. He added that connectivity is affected, and that there is increased fuel burned resulting in more air pollution and other unquantifiables.

Ground-based v. satellite-based systems: There was discussion about the transition from ground-based to satellite-based traffic control. Although FAA is working on converting to all GPS controls, that will not be accomplished until advanced avionics are in place in the vast majority of planes – a point in time roughly 10 years away. Currently approximately 25% of planes are equipped with GPS, and although FAA hopes to have all planes equipped by 2015, MITRE staff thought that was optimistic. In the meantime, it is necessary to address potential changes assuming the ground-based system. FAA is working with other Federal agencies including NPS and others in a joint planning process that looks ahead to the year 2025, and includes environmental impacts as well as NAS issues. Lynne added that under the satellite-based system, FAA may be able to explore ways to reduce direct overflight for specially designated parks, while maintaining safety and efficiency of the system.

Members asked if currently equipped planes could change routes now to effect some noise reduction over the Canyon. Lee answered that flight plans do not indicate equipment aboard, so traffic controllers would have no way of knowing which flights could be moved. FAA added that treating a percentage of aircraft in one way, different from the norm, is very dangerous, and that it is necessary to have at least 90% equipped before traffic control could be satellite-based.

Nature of the Assignment to MITRE: The group discussed with MITRE staff the nature of the question posed to them. Some felt that the assignment was slanted to the negative, and that MITRE was asked to demonstrate why changing routes could not work. Perhaps the question should have been "Show us how to make this happen," they suggested. Lee responded for MITRE, saying that they were given a scenario – removing all flights from the polygon – and that given that scenario,

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there was only one answer. No matter how the question was asked, she said, the result describes a major problem. FAA, supported by Cyndy Lee of Volpe, responded that the earlier sensitivity analysis showed that a major change in route structure would be needed to make a significant difference in audible high altitude noise. Also, much of the polygon area is already saturated with air tour noise. Lee Brown added that for the purposes of their modeling, the polygon may not have been the right shape or size to give the reduction of noise desired. Perhaps a larger polygon would have been necessary to produce the kind of noise reduction desired over the Park, but that would result in more significant safety impacts. Lynne reminded the group that the polygon was proposed for analysis by environmental members of the group to analyze the potential airspace impacts of moving high altitude routes.

Nighttime Data: Some participants were interested in seeing nighttime data, to determine the feasibility of making changes in those routes, or the potential in the future for nighttime advisories, denials of requests to fly over the Canyon, and other steps that would decrease high altitude noise at night. The group acknowledged that during the day, when people are busy, they are less likely to notice the high altitude flights. In the quiet of night, however, there seem to be more complaints. Although nighttime improvement would not count toward substantial restoration, which applies only to the 7 am – 7 pm daylight hours, some felt it would be valuable to address noise issues wherever possible in order to maximize enjoyment of the canyon experience.

Cyndy Lee, Volpe, noted that the noise model included about 500 nighttime flights. The area of the 25% noise contour even at night, exceeded 50% of the park. Just halving the number of night operations doesn't show much benefit for the substantial restoration goal. "Even 200 GA flights before we moved some GA to the commercial category," she said, "were over the 50 percent restoration level." She advised that substantial movement of routes would be necessary for substantial restoration.

Role of Air Tours: A new member asked the role of air tours with respect to high altitude flights and the restoration of natural quiet. The group acknowledged that, given the noise model results, it was not possible for the air tour operators to make reductions to a level that would reach that goal. Even eliminating all air tours would leave the Park in violation of the standard. Lynne pointed out that, taken as a segment of the total aircraft contribution, the air tour industry is under the minimum threshold for the goal. Karen reminded the group that because the goal does not refer to segments, it is not accurate to say that the air tour industry has achieved natural quiet. The goal is substantial restoration for the Park, not for a segment of the aircraft population. She also pointed out that 50% of the Park – is not a threshold or a floor, and that the definition includes "or more." The definition represents a range that is described in the NPS recommendations for Grand Canyon found in the 1994 Report to Congress. She drew a parallel between FAA's responsibility to protect the safety of air travel and the Park Service responsibility to protect park resources and visitor enjoyment, observing that neither agency should be expected to operate at the lowest margin. An air tour operator reassured the Park Service that he was personally dedicated to solving the issue of aircraft noise at the canyon and that although the industry "has crossed the 50% threshold," he was committed to going beyond that.

Role of Hualapai Tribe: Chairman Vaughn expressed concern that tribes were not contacted until this process was well underway, and that Hualapai will be severely impacted by the proposed changes in high altitude routes. "We lie right in the path of arriving and departing aircraft," he said,

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and changes could result in aircraft over Peach Springs every six minutes. He recommended abandoning any proposals to move high altitude routes.

Disposition of the High Altitude Flights: The ATA representative reminded the group that the MITRE study was a result of the group's question to her: "Would you be willing to consider route changes if there were no impacts?" She believes that the answer from MITRE is clear. She asked the group if the study results answered that question satisfactorily, and if not, what more is needed.

Several spoke in appreciation of the report and the work of the MITRE team.

An air tour operator pointed out that the polygon does not define substantial restoration of natural quiet, and that the group has no noise modeling to date to show how much these changes would contribute to achieving the definition. A recreational representative agreed that modeling the noise benefits from the proposed changes was a logical next step. Cyndy Lee, Volpe, gave her opinion that the greatest impact to noise would result from moving the routes near the northern part of the polygon. Because most of the air tours are confined near the southern edge, movement of high altitude flights along southern routes would not have much effect on noise reduction.

An airport spokesperson estimated that the 30 million dollar cost figure was significantly low. He urged the group to make a decision about the high altitude flights. He assured Chairman Vaughn that the Environmental Impact Statement for the new airport would take into account impacts to tribal lands, and invited participation in scoping meetings to begin next week. The new airport at Ivanpah, he added, is not an appropriate topic for this process.

The GA member added that the fuel cost estimates were low.

The Park representative said that the future appears bleak, with an unlimited number of aircraft flying over the park. The subject is inevitably an emotional one for many with the prospect of more and more compressed flights in the airspace. The Park would like to participate in planning for the new airport, but McCarran cancelled a meeting recently, leaving Park staff to wonder if they will have a role or not. [Mike Loghides apologized, saying that the airline cancelled the flight that day, but they look forward to rescheduling.]

An agency staff person, at his first GCWG meeting, remarked that he was impressed with the complexity of the issues, and the commitment of participants to work hard and figure it out." There is not a person in this room that is expert enough to determine the full impact of this." To really understand airspace design would take a month long course. He added that two places in the country cannot tolerate any changes: New York City because of the density of flights, and parts of the west coast because of military airspace. Robert Novia, FAA, agreed that, if anything, the study underestimates the true impact

The Hualapai member recommended that the group take the issue of high altitude flights off the discussion table, for safety reasons primarily. He proposed that the group consider a system of noise credits for the canyon.

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An environmental member suggested that there may still be creative ways beyond what's been modeled to reduce the noise from the high altitude flights. "If we can make incremental improvements that get us closer to substantial restoration, we shouldn't ignore those."

The FAA member questioned the value of further analysis, given the audibility goal and the cone of noise that comes from high altitude traffic.

A recreational member observed from the MITRE maps that the majority of flights come from Los Angeles and are traveling at high altitude. He hypothesized that moving them north slightly could be a great help, and that their movement south would put them just outside the Hualapai lands. Even though the improvement might be incremental, such steps should be tried, he said. FAA and MITRE responded that moving the basin traffic would have the greatest impact on air safety, because routes would be moved into sector 67, creating a merge of traffic that would increase the number of potential conflicts.

The NPS member stated that her agency does not feel that any more costly and time-consuming analyses are necessary. She reiterated the agreement made between the two agencies prior to this process that any remedy would not negatively impact the National Airspace System. In addition, she said, FAA has made it clear they will not regulate high altitude commercial traffic. She recommended "rolling up our sleeves and focusing on regulating air tours, air tour-related and GA flights, as Senator McCain and Congressman Young have advised." The McCarran Airport representative supported that statement.

The ATA representative pointed out the decrease in air quality that would result from the proposed changes. Basin arrivals would roughly add a ton per day of additional CO₂, and the incremental fuel burn from the route changes would increase by 11.5 tons per day. Even though aviation accounts for a small percentage of greenhouse gases, she said, the commercial high altitude industry is being asked to do everything possible to reduce fuel consumption and emissions. The FAA member agreed that the main concern with high altitude flights is emissions and not noise.

Achieving Substantial Restoration: High Altitude Noise Contribution:

An air tour operator expressed concern that if the high altitude issue is taken off the table, the noise contribution from high altitude must also be removed from the equation. The air tour industry, he said, should not have to pay for the excess noise created by the high altitude flights. He added that the new categorization of air tour and air tour-related results in commercial air tour restoration numbers that are probably greater than the 53% calculated by the noise model. Furthermore, he said, he did not believe the legislation intended to include GA flights.

Following a caucus of environmental and recreational interests, an environmental member reported that the caucus agreed that no noise should be subtracted from the equation. They believe that all noise should be counted in efforts to achieve the goal, and that Volpe should run an analysis of the proposed route changes in the MITRE study, to determine the amount of reduction in noise at the park.

Cyndy noted that without including any air tour, only 2 percent of the park is restored, from the standpoint of all noise. An environmental representative stated that despite that figure, the group should come as close as possible to meeting the standard. Cyndy added that there is aircraft noise

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over 25% of the time in 97% of the park. Any computer model, she added, would show the same results.

The ATA representative acknowledged that the GCWG faces a dilemma – either exclude the high altitude noise, or include it and fail to comply. She suggested that incremental improvements could make a difference. The court did not say "regulate" all noise, she said, but rather "take all noise into account." She urged the group to seek meaningful, realistic, and readily implementable changes and see how much improvement is made. She believes that effort would meet the goals of the statute.

The Hualapai member suggested that money spent on litigation would be better spent on funding quiet technology research and development.

The GA member asked how many of the GA designated flights are below 18,000 feet. Cyndy responded that out of the 135 GA designated operations, 23 – 25 would remain below 18,000 feet.

Volpe Presentation: [available on the website] Cyndy Lee presented information on the testing of the time compression algorithm developed by Kurt Fristrup (NPS) to account for audibility overlap for simultaneous aircraft events in INM. The results, comparing the new algorithm with the current algorithm developed by HMMH, show the new algorithm performing slightly better for air tours and high-altitude aircraft. Validation data for air tours was available from the model validation field work conducted in 1999. Very limited validation data for high-altitude aircraft was available from field work conducted in 2004. Additional validation is recommended, but would require data from NPS.

An air tour operator suggested that some air tour events might be drowned out by a number of high altitude commercial flights. Kurt answered that it was important to treat all aircraft noise equally, against a natural ambient background.

Q: What if the new algorithm were applied to air tours only, would it reduce only air tour noise?

A: Yes, but it would not likely change the area of the 25% time audible contour.

Q: How does the model account for tour buses and other non-aircraft, human-made noises that we are not regulating?

A: The dual zone ambient map, where 10 decibels are added to visitor-use areas, account for areas with buses and other human sources. Following Cyndy's statement, Kurt then added that aircraft noise sources are unique because they spread out over a larger area than a noise source on the ground, which impacts a much smaller area. In addition, the language in the statute ties substantial restoration to aircraft overflights, not just air tour, and not other kinds of noises. The natural sound is the baseline condition against which noise is evaluated and measured, added the NPS representative. Moreover, she pointed out that they do regulate tour buses and other sources of noise in national parks. They are not, however, doing it through this process because this statute is specific to aircraft noise so this process was tailored accordingly. She added that in the Survey of Superintendents (part of the foundation for the 1994 Report), 70% of the respondents cited air tour noise as a management problem, but only 40% reported tour bus and other noise as a management problem.

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Lucy summarized the dilemma:

- At this time it seems impractical to reduce noise for the restoration of natural quiet (ie. daytime hours) through changes in the route structure for commercial high altitude flights. Some members of the group have mentioned the possibility of some limited opportunities to move high altitude routes at night, at dawn, or in the future using satellite-based navigation systems.
- In achieving substantial restoration of natural quiet, how can the GCWG account for the noise from high altitude flights – flights that it cannot regulate? It appears that even eliminating all air tour, air tour-related and GA flights the current standard for substantial restoration would not be met.
- How much improvement is possible from the air tour, air-tour related and GA categories?

Observers' Comments:

Jim McCarthy, Sierra Club, asked for a correction to the minutes of the last meeting. He wanted the group to know that he had not supported taking seasonal closures or shifts off the table in the East End Subgroup. When the air tour operators refused to consider seasonal closures, he responded by taking lower elevation flights in the Dragon Corridor off the table. But he was disappointed that the negotiations were not able to go forward at that time. He said that it seemed to him that operators were efficient at getting their ideas on the table and efficient at taking conservation ideas off the table.

Secondly, Jim pointed out a problem he sees with the FAA definition of quiet technology, which seems to be based on efficiency rather than actual noise. A quiet technology plane, he said, could be noisier than its predecessor if it carried more passengers, since the calculation is made based on noise per seat. He supports quiet technology but is concerned that using the noise efficiency standard the park could actually be degraded.

Finally, Jim commented on the actual time of the curfew during different parts of the year. He analyzed the relationship between the time of sunset and the limits of the curfew, and found that the noise-free interval for almost two weeks of the year is just 14 minutes. For 77 days it's less than 30 minutes. He would like to see the GCWG address this.

Dick Hingson spoke of his experience flying on Southwest from Phoenix to San Francisco and back. He noted that the outbound route went due west across the Colorado and then made a long, slow curve northward. He asked why that kind of non-linear route could not be plotted to avoid the Grand Canyon.

He also questioned the conclusions of the MITRE study that there was no more room to accommodate any shifting of routes, when the system is clearly growing rapidly and accommodating new planes all the time.

DAY TWO:

West End Subgroup Report: Rick Eisenreich and Lamar Whitmer reported on the meeting of the previous day. The Green 4 route was flown, and because of its overlap with Blue 2, the subgroup recommends modeling both routes. They anticipate a decrease in noise. The subgroup has also been negotiating with Hualapai Tribe to insure that sovereignty is protected, and that the needs of the tribe are taken into consideration.

Tribal representatives and operators have also agreed to test fly two quiet technology routes and then model them. Rick will prepare a map showing the proposed quiet technology Green 4 route. Craig Sanderson handed out a map showing the quiet technology route for Blue 2. An additional route and Blue Direct, as shown, still are of concern to Hualapai and to some river users. The challenge is to cross the western end of the canyon, flying low enough to avoid the need for oxygen. A recreational member reminded the group that the quiet technology incentive route does not have to be new. It can be an existing route. He added that he is willing to work with the operators on devising a route to minimize impacts. He also suggested that having routes cross the canyon at the same point would be beneficial for boaters. Another recreational representative agreed that quiet technology routes may be created if there is no impact on substantial restoration or on tribal lands. He approved of the Green 4 exit, but was concerned that the proposed low-flying quiet technology route would increase noise.

An operator agreed that moving a route would increase noise elsewhere, but that the goal of converting all air tours to quiet technology would result in overall reductions. There is an effort, he said, to regain some of the air tour benefit from the Blue 1 route lost in 1997. The NPS member wanted further analysis on whether or not quiet technology could make it possible to restore a route.

The Hualapai member said the tribe is willing to work with air tour operators and that they support the proposal from the West End subgroup.

West End subgroup members said they are working on a compromise position on fees, where the operator might receive some relief based on the time required to amortize the cost of quiet technology – perhaps 10 – 15 years. Subgroup members need to consult with their constituents in order to further discussions. An operator remarked that a 10-year relief from fees (\$150,000) does not pay for a \$2 million helicopter.

The FAA member expressed some concern about the schedule for producing needed maps, test flights and model runs. Operators responded that helicopter test flights can be made in the next two weeks. There are tribal concerns on Blue 2, and once those are addressed, the subgroup hopes to be able to fly Blue Direct in time for modeling both routes for the next meeting. The Hualapai member added that consensus is needed to proceed with noise modeling for Green 4. An operator noted that the peak day, west end with all quiet technology planes should be modeled. Another added the helicopter incentive route to the modeling request.

The NPS member observed that there are legal issues connected with waiving fees based on the use of quiet technology and that agency lawyers have already responded to a request from a Hawaii operator in this regard. NPS applauds all efforts toward the transition to quiet technology although where quiet technology is to be used as an incentive, it must still result in a reduction in noise. She said that NPS would "absolutely support quiet technology incentives and could even see pro-rating

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fees down commensurate with the % of noise reduction that the quiet technology provided." She added that NPS would probably not enter into an agreement until all back fees are paid since Congress has expressed extreme displeasure with NPS for not collecting fees currently owed. In fact, she said, the "natural sounds budget increase was slashed because of the air tour operators who have reneged on their responsibility to pay the overflight fees owed to the federal government." The Sierra Club member noted opposition to reducing fees for quiet technology aircraft.

Any proposed route changes will be included in the NEPA range of alternatives. Proposals for modeling these changes must be sent as quickly as possible to the Volpe screening committee – Lynne Pickard, Kurt Frstrup, Ken McMullen, Alan Stephen, Dick Hingson, and Cyndy Lee.

There was support in the group to model:

- Green 4 quiet technology incentive route,
- Hualapai Green 4
- Blue Direct mini-tour
- All quiet technology in the west end on the peak day
- Quiet technology helicopter route over Sanup

East End Subgroup Report: The subgroup asked Ed Moreno to present the group's list of Areas of Mutual Agreement [see below]. Ed explained that these items were subject to the members' internal decision-making processes, and that they are dependent on overall goals being met. He added that David Yeamans and Alan Stephen were developing each of the bullet points, and that the facilitators would help create the next iteration of the document.

Areas of Mutual Understanding [transcription of flip chart from 9-26-06]
(tentative and dependent on overall goals being met)

- Accept two zones as proposed – noticeability and audibility
- Accept NPS definition – 50%/75% and front country/back country
- Accept 12-hour day with “fairness doctrine” to tell whole story – nights are quiet – get credit for that
- Proposed changes - Dragon dogleg and Nankowweep
- Realign Dragon approach and departure to avoid Boundary Road
- Publish “navigational advisory” in future aviation maps – preferred routes, especially night (high and low fliers)
- Automatic denial of requests to deviate from flight path in order to fly over Canyon
- High flier issue is complication to group’s work
- Educational activity to alert ground visitors about time and place of air tours
- Combine Blue Direct N and S (mini-tour not decided)
- QT Incentives: maybe relief from fees, sunset fees
- Demonstration project – Capstone II, monitoring system
- Curfews are important
- April 2008 is the deadline – do it right
- Modeling agreement on Blue Route – refine for purposes of modeling

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Discussion:

Denial of requests to fly over the canyon/advisories to avoid canyon: The FAA member said it is a myth that commercial aircraft deviate to fly over Grand Canyon, and that therefore denying permission was moot. She also objected to the voluntary advisory proposal, because of the danger of overloading adjoining routes, and because the deviation would require additional fuel and emissions, something that both FAA and the airlines are very concerned about for environmental, as well as economic, reasons. Emissions in the upper atmosphere and their potential contribution to climate change are the major environmental concerns at high altitude, rather than noise. A recreational member suggested that the group at least consider the feasibility of nighttime advisories. The impacts from anticipated increases at Las Vegas dwarf any deviation away from the canyon at night, he added. The East End subgroup remained interested in nighttime data on high altitude flights.

Capstone II: The group discussed the Capstone II program, used in Alaska to provide real time communication about the position of planes. It is key in collision avoidance, and would be a widely supported program at Grand Canyon. The NPS representative was enthusiastic and hoped to move this item forward.

Educational Programs: The group clarified that the educational programs referred to were for the purpose of alerting visitors when and where to expect overflight noise.

Heidi Williams pointed out that the Congressional letters received also expressed Congressional intent not to regulate general aviation, as well as commercial aircraft.

NEPA Update: Grace Ellis, NPS, reported for the joint NPS/FAA NEPA team. All proposals from the Scoping Period, public comments, and the GCWG have been consolidated into a Range of Alternatives [available on the website]. She urged the group to imagine a Chinese Menu, where one could choose one item from Alternative A, another item from Alternative B, and 3 from Alternative F. Following this meeting there will be a two week comment period for working group members to review the alternatives, comment on them, or add new proposals. During the fall and winter, the contractor will analyze impacts of all kinds. In early spring, the Working Group will be presented with the results of the analysis and may be able to reach consensus on a preferred alternative. A Draft EIS, including any preferred alternative, is expected to be issued for public review in the fall of 2007.

To create the range of alternatives, the NEPA team reviewed over 1200 comments. They welcome suggestions on how to create a more complete range of alternatives. Column/Alternative F is available for GCWG proposals. The team already added some options in that column that they had heard during GCWG meetings. But members should feel free to comment on those, add others, or make changes anywhere in the document. Any comments should be sent to Lucy before October 16 [lucymoore@nets.com].

Paul Joly walked the group through the Alternatives.

- Alternative A = current condition
- Alternative B = unimplemented 2000 EA proposal, with a change in Marble Canyon East End, and Saddle Mountain Wilderness Area

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- Alternative C = new modified loop tour down Bright Angel Canyon, no Dragon Corridor, tours moved away from confluence, Navajo consultation helicopter routes, no caps on allocations in East End, some lowering to 8,5000, one transportation route eliminated and one modified to include a tour from Las Vegas to Tusayan
- Alternative D = modified 1994 Report to Congress and other options, including caps and curfews, a noise budget, shifts in Dragon and Zuni, GA reduced to two corridors, new brown route to Supai Village, west end quiet technology route and non-tour route outside park, east end air tours limited to 3 hours per day, exception for quiet technology helicopters
- Alternative E = alternating seasonal closure of Dragon and Zuni, proposed fixed wing route, no loop tours, option for fixed wing to do Dragon tour, no cross over, 3 GA corridors, west end unchanged
- Alternative F = proposals generated by the GCWG

Q: Does one agency have the lead with respect to defining impacts to resources?

A: NPS and FAA are joint leads, with different terminology. FAA uses "significant impact" and "no significant impact." NPS uses "negligible," "minor," "moderate," and "major." Analysis will be done with both systems side by side.

Q: When and how will the preferred alternative be identified and included in the EIS?

A: Council on Environmental Quality (CEQ) regulations governing EISs require Federal agencies to identify a preferred alternative in a Final EIS. Agencies are hoping to have one identified in the Draft EIS. Karen said if the Working Group reaches consensus on an alternative, that would be the preferred alternative.

Q: In Alternative C, what would be the helicopter and fixed wing options in the new east end?

A: The range of alternatives does not specify; it's not clear.

Q: How many NPS administrative flights are flown?

A: The presentation two meetings ago showed about 400 hours per year. Those flights go through a rigorous process for approval to insure that the minimum number of flights is made each year.

Q: How will the contractor evaluate the impact of closing GA corridors and overloading others without data on numbers now using corridors, etc.? Is it fair to regulate a category of aircraft when you have no data?

A: The analysis would be part of the socio-economic section. The contractor will make a special effort to talk to airports in the area, get estimates, and try to do some noise analysis. Tina Gatewood, FAA, added that there is data for GA flights above 10,000 feet. Heidi Williams, AOPA, said the contractor should work with AOPA and fixed base operators in the area on the best available data for GA VFR activity.

Q: Are only the proposals or ideas that were deemed "viable" included in the range of alternatives?

A: Every comment was tracked. If it is not included in the range, we can explain why, and yes, viability might be one of the criteria that took it off. But if you think that was done in error, let us know.

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Discussion: The Hualapai member expressed concern that the agencies have not completed the consultation process with the tribe. Alternate C indicates some serious impacts to Hualapai, and yet the process seems to be moving ahead. It is highly inappropriate, he said, to move forward before consultation is complete. The NEPA team acknowledged that running processes concurrently (like NEPA and consultation) can be stressful, but that nothing is set in stone, and the tribe is encouraged to actively participate. The FAA member said that in her experience environmental review and government-to-government consultation move forward concurrently, providing information and ideas back and forth. She understands that it is uncomfortable, but said that it is not unique, and certainly it is not intended to disregard any interest. Amy Heuslein, Bureau of Indian Affairs, reminded the group that the BIA is a cooperating agency on the EIS, and that she will insure that appropriate tribal consultation occurs and tribal voices are heard, in accordance with executive and secretarial orders.

An air tour operator noted that the NEPA presentation included elements common to all alternatives, and that one of these elements is the substantial restoration of natural quiet. He asked how the NEPA process can move forward when the presence of the high altitude noise makes achieving substantial restoration of natural quiet impossible, given the existing definition of natural quiet. He asked that the group declare that the air tour industry is in compliance and then decide where to go from there. Grace responded that this was not a NEPA issue, and that the team was waiting for resolution of the dilemma by the GCWG.

A recreational member requested that high altitude impacts be an element included in the Range of Alternatives.

Following a break during which caucuses met, the NPS member stated that she believed that the agencies can move forward within the current NEPA process without resolving the high altitude issue. "We can go forward and analyze, but we will hit a wall no doubt." The remedy could be administrative, or legislative, she added.

Grace suggested that the team could model all the alternatives in two phases. The first would be for all aircraft that operate below 18,000 feet. The noise from these aircraft would be compared with the ambient noise to determine the level of substantial restoration. The second would be for all aircraft operating at 18,000 feet and above. Their noise would be compared with the ambient in the same way as those below 18,000 feet. Both scenario results, when added together would predict the substantial restoration percentage for each alternative. (These scenarios would include the noise from high altitude aircraft.)

Tina Gatewood, FAA, suggested an alternative: to model all of the alternatives in the following situations for inclusion in the Environmental Impact Statement (EIS).

The first scenario would model all of the alternatives and all aircraft (regardless of altitude) against the ambient noise condition. This would provide substantial restoration percentages that include high altitude aircraft noise, (which, she said, we already know is approximately one percent, based on the Volpe noise modeling) as part of the noise results for each of the alternatives included in the EIS.

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The second scenario, would model all of the alternatives against the noise situation that would result from the high altitude noise being included with the ambient noise. This means that the ambient noise condition would be added to noise generated by the high altitude aircraft (those aircraft operating at 18,000 and above). This would provide substantial restoration numbers without the inclusion of high altitude noise in the percentage of substantial restoration as their noise would be considered in the beginning of the equation instead of at the end of the equation.

Both of these scenarios would be included in the Draft EIS and receive public review and comment. A decision on how to handle high altitude aircraft could then be made during development of the Final EIS. Including the noise from the high altitude aircraft as part of the ambient noise environment will allow their noise to be considered, as directed by the court, but not be included in the alternatives resulting in the potential for regulation of these aircraft.

A Work Group member suggested that NPS redefine the baseline from which substantial restoration numbers are calculated. The result would be elimination of all of the non-air tour aircraft from the equation. Ambient noise would be compared to only air tour aircraft noise to determine the substantial restoration percentage for the park.

The GA member asked the agencies to consider ambient plus aircraft above 18,000 feet. A recreational member urged the group to continue to explore ways of moving high altitude flights.

The FAA member expressed frustration that high altitude flights were still the subject of conversation. At the last meeting, the group was almost unanimously supportive of legislation if the MITRE results showed it was not feasible to move flights. Now, she said, some seem to be ignoring data and putting high altitude back on the table.

The environmental and recreational caucus offered a proposal that suggested addressing possible options to reduce noise both from the high altitude flights and from the other aircraft. The caucus recommended looking at the categories above 18,000 feet and below separately, and creating a package that includes both. The intent was to de-couple the two types of aircraft, to identify different problems and different solutions, to protect the air tour industry from being saddled with the high altitude contribution, and to have separate strategies for high and low altitude aircraft to be part of a complete package. [This proposal is an attachment to this summary.]

Karen stated for NPS that they do not support regulating high altitude flights, and that they would support legislation only if it also included meaningful ways to reduce the current level of noise from aircraft at the park, and as long as the interests at the table remained working together. She added "it is not good public policy to simply define the problem away since the noise will still be there and the whole purpose for establishing this work group was to help the federal agencies figure out how to improve the current noise situation in the Grand Canyon."

An air tour operator offered reassurance to the group. If the noise from high altitude flights is taken out of the equation, the air tour industry will stay at the table and continue to strive for improvement. "We are dedicated, we are not going anywhere, we are here to the very end," he added. His business and his personal life have been part of the Canyon for over 40 years.

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The NPS member appreciated the commitment but suggested that other air tour industry members may be simultaneously working to undermine the efforts of this group.

The Hualapai member asked that the Hualapai proposal be included in the summary. The proposal states that NPS has the authority to define natural quiet and to modify that definition. Given the inability to regulate high altitude flights, it is legitimate to redefine natural quiet, he said.

The NPS member responded that she was not opposed to changing the definition if there is a reason to do so that would benefit the park.

The FAA member said for the record that FAA's position is that the 1987 Overflights Act was not intended to include high altitude aircraft or noise, per Senator McCain's letter. The baseline noise analysis shows a lot of high altitude audible noise—not a high level of noise, but a lot of audibility. The MITRE study shows substantial safety and operational impacts of moving high altitude routes. She explained that southern California basin, Las Vegas, or Phoenix traffic would need to be moved in order to make any meaningful noise reduction over the park. "The rest is small change," she added, "and we've already shown we can't move those routes without adverse safety and operational effects." FAA opposes continuing to try to remove high altitude routes from the Canyon.

Other members responded to the environmental and recreational proposal.

Elling Halvorson appreciated the effort of the caucus and felt that de-coupling the topics held some merit. He recommended that the evaluation of noise issues at Grand Canyon recognize two separate sources of noise – one that can be dealt with in the short term, the other in the longer term. The high altitude issues should be set aside for the purposes of the GCWG discussion.

Heidi Williams remarked that the high altitude interests needed to review the paper, and that except for her, they were not present.

Lynne Pickard agreed there is a need to decouple the two. There may be disagreement on the amount of effort to give high altitude now, but there is a need to deal with each on its own terms. She suggested that there may be consensus in the group for de-coupling the aircraft above and below 18,000 feet.

Karen Trevino agreed that it was critical to hear from Katherine Andrus, the high altitude commercial interest at the table. [Katherine had attended the first day only, believing that the high altitude issue would not be discussed the second day, as the agenda had indicated.]

David Nimkin felt that the group needed to continue to look at high altitude issues. The problem will continue to grow, inevitably, as more and more planes enter the airspace. At the very least, we should guard against the problem worsening, he said.

Charlie Vaughn suggested that the next meeting be devoted to settling the high altitude issues, and that the high altitude representatives should be alerted to their need to attend.

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Tom Martin reminded the group that the NEPA process was underway, and he recommended that the over 18,000 feet flights be included in the alternatives. He supported the de-coupling framework for discussion, but believes that high altitude should be addressed at the same time as air tours.

A discussion followed about the number of categories to be considered in the de-coupling exercise. The GA member wanted to be sure that GA flights were considered separately. The FAA pointed out that aircraft below 18,000 feet are already de-coupled; there are four categories – air tour, air tour-related, military and GA. Many favored de-coupling above and below 18,000 feet as a way of continuing to talk productively about improvements. The NPS legal counsel advised that it would be necessary to re-couple the categories later in order to consider all aircraft noise.

Lucy attempted to state the proposed agreement for the group that would serve as a framework for further discussions:

"For the purposes of discussion, the GCWG agrees to decouple aircraft above and below 18,000 feet, recognizing that there are four different categories of flights under 18,000 feet, and recognizing that existing law requires the eventual re-coupling to consider all aircraft noise."

There was discussion about many aspects of the statement. The Hualapai member wanted clarification on the exempt status of Hualapai flights. NPS counsel said that they are not exempt from noise analysis. FAA was reluctant about the concept of re-coupling the issues later.

The Hualapai member offered another proposal:

"Each category of aircraft noise is analyzed, beginning with the most significant, to see what can be done legally and practically to reduce the noise from that source. Following each analysis, the GCWG will prepare a statement summarizing its findings. This would constitute consideration of noise from all aircraft, as required by law."

The NPS member felt this might be a useful exercise if there were consensus to spend that much time doing it that way. Another pointed out that once the contribution of noise is analyzed, and the result is no practical, feasible, implementable solution, the group may choose to look at long term recommendations, and/or take the issue off the table.

Observers' Comments:

Jim McCarthy said he would email his summary corrections from the last meeting to Lucy.

Amy Heuslein, BIA, urged the agencies to look at the tribal alternative recommended for the NEPA process, and make it the focus of the tribal consultation.

"How to Proceed" Subgroup: Having failed to reach agreement on the framework for discussion, the GCWG appointed a subgroup to take up the problem of how to proceed. Those members include:

- David Nimkin
- Roger Clark
- Charlie Vaughn

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- Barry Brayer
- Alan Stephen
- Ken McMullen
- Roxane George
- Katherine Andrus (or delegate)

The subgroup will meet Monday, November 27, at Zion National Park, prior to the NPOAG meeting. [This meeting was later cancelled.]

An air tour operator predicted that high altitude interests would not be pleased with the outcome of this meeting. Both agencies have made strong statements believing the issue was off the table, he said. He recommended that the summary of this meeting be prepared as quickly as possible so that high altitude interests might contribute to the discussion.

Some members of the working group questioned the commitment of the high altitude interests to this process, given absences at recent meetings, and for the second day of this meeting. Others pointed out that the agenda had led ATA, airport and NBAA interests to believe that high altitude issues would not be discussed the second day.

Next Meetings:

**"How to Proceed" Subgroup -- November 27, Zion National Park [later cancelled]
Grand Canyon Working Group – December 11 (beginning at 1:00) through December 13
(ending at noon), in Phoenix, Chaparral Suites. [later changed to December 12 – 13, ending at
noon]**

**Summary prepared by Lucy Moore. Please contact her with corrections or comments:
505-820-2166, or lucymoore@nets.com**

**Grand Canyon Working Group
Seventh Meeting
September 27 - 28, 2006
Phoenix, AZ**

Tasks and Data Requests

Send corrections to July summary to Lucy – by 10/6

Distribute and post on website corrected summary of July meeting – Lucy by 10/9

Send comments on NEPA Range of Alternatives to Lucy (lucymoore@nets.com) -- by 10/16

Distribute draft summary of September meeting – Lucy by 10/19

Submit requests for Volpe model runs to screening subgroup – by 11/1

Submit requests for MITRE analysis (nighttime flights?) to high altitude subgroup – asap

Develop high altitude statement for group to consider – Facilitators asap

Re-organize website so that documents are easier to find – Tahnee and Steve May asap

Determine percentage increase in number of conflicts as result of route changes – MITRE

Distribute summary of scoping comments to GCWG – NEPA team asap

Develop the "Areas of Mutual Agreement" paper from East End subgroup – Alan, David Y., Ed

Test fly and map QT Green 4 proposed route, submit for modeling – Rick E., Craig S.

Submit proposals to screening subgroup for route changes:

- QT incentive Green 4 route
- Hualapai Green 4 proposed route
- Blue Direct mini-tour
- QT in West End on peak day
- QT helicopter route over Sanup
- Impact of high altitude revised routes on substantial restoration of natural quiet

Draft 9-28-06 [presented at the meeting]
Environmental Caucus

High Altitude Aircraft Noise Over Grand Canyon National Park

Goal

The goal of this proposal is to provide a process for decoupling consideration of high flier and low flying aircraft by the GCWG. We propose that each set of strategies be considered as part of a complete package that can address the objectives of our working group. We hope that consideration of a range of proposals, restrictions and incentives can be considered independently and then linked and approved by the working group. By agreeing to consider one set of recommendations does not at this time influence or absolve consideration of recommendations or restrictions considered for the other.

Statement of Principle

The GC Working Group shall recognize the authority and obligation of the FAA and NPS to restore reasonable quiet in the Grand Canyon as prescribed by law. The combination of high altitude noise distribution with noise generated by low flying aircraft has made differentiation of the sources of the noise an impediment to reaching consensus towards substantive noise reduction. The Environmental Caucus recommends that specific policies and advisories be presented to address the substantial noise source of high flying aircraft. These recommendations should, while in no way compromising safety, include attention to a wide range of noise reduction strategies that address current flight patterns and anticipated growth projections that will substantially affect the Grand Canyon and compliance with the 1987 Law. These recommendations, for example, can include denial of in-flight request to fly over the park, recommend nighttime voluntary routing away from the heart of the park, moving Basin flights slightly north/south in relation to the heart of the park, introduce curfew periods, continue to correct the noise model, etc.

Consideration and approval of these recommendations must be linked to a complete package of recommendations that includes substantial reduction of noise in specific areas of the canyon among low flying aircraft. This includes core strategies such as route adjustments, periods of respite and seasonality, quiet technology incentives, management of allocations, demonstration of monitoring technology. Specifically the environmental caucus proposes:

1. [left blank]