

APPENDIX N

COORDINATION WITH THE NATIONAL PARK SERVICE

N.1 INTRODUCTION

In addition to coordination letters regarding potential Section 4(f)/303(c) properties in the initial area of investigation (see **Appendix M**) special coordination with the National Park Service (NPS) has taken place throughout this Environmental Impact Statement (EIS) process. The NPS is a cooperating agency with the FAA in the preparation of this EIS.

The following items are attached to this appendix.

Table N.1
LIST OF ATTACHMENTS

Attachment	Items
N-1 – Memorandum of Understanding between FAA and National Park Service	Memorandum of Understanding (MOU) regarding the roles of FAA and NPS and the coordination process during EIS development, dated June 26, 2003
N-2 – Meeting between FAA and National Park Service to discuss Draft 4(f)/303(c) Screening Analysis Report, Held November 9, 2004	Meeting Agenda
	Meeting Sign-in Sheet
N-3 – Correspondence between FAA and National Park Service	Follow-up letter from FAA to National Park Service, dated Nov. 18, 2004
	FAA letter to National Park Service, transmitting Final Draft Scope of Work for the EIS, dated Aug. 29, 2003
	FAA letter to National Park Service, dated Jan. 10, 2005
	National Park Service letter to FAA commenting on Air Tour Operator Survey Report & Volpe write-up of Zion National Park ambient noise map, dated Jan. 13, 2005
	National Park Service letter to FAA, dated Feb. 4, 2005
	FAA letter to National Park Service, discussing potential use of L50 natural ambient noise metric for Zion National Park noise assessment, dated March 1, 2005
	National Park Service response to FAA's March 1, 2005 letter, agreeing with use of L50 natural ambient noise metric, dated March 4, 2005

Table N.1, Continued
LIST OF ATTACHMENTS

Attachment	Items
N-3 – Correspondence between FAA and National Park Service, Continued	E-mail from Volpe Center to National Park Service, discussing the process of analyzing Zion National Park ambient data, dated March 11, 2005.
	Letter from FAA to National Park Service regarding the listed historic sites within Zion National Park
	Letter from National Park Service to FAA regarding clarification of sound metrics, dated April 26, 2005.
N-4 – Proposed L90 White Paper	<i>Explanation for Not Using L90 in the St. George EIS Noise Analysis</i> , prepared by FAA.

N.2 MEMORANDUM OF UNDERSTANDING BETWEEN FAA AND NATIONAL PARK SERVICE

The FAA and the National Park Service entered into a Memorandum of Understanding (MOU) regarding coordination during the EIS process. A copy of this MOU is included in **Attachment N-1**.

N.3 COORDINATION WITH NATIONAL PARK SERVICE

FAA officials in the Airports Division of the Northwest-Mountain Regional office have conducted regular weekly conference calls with the National Park Service (NPS), represented by the Superintendent of Zion National Park, from November 2004 through April 2005 to coordinate the development and review of the Draft EIS document. .

Representatives of both agencies met on November 9, 2004 at the NPS Denver, Colorado regional office. The purpose of this meeting was to discuss the preliminary analysis of potential cumulative noise effects of the proposed replacement airport on NPS lands in the initial area of investigation. This information was disseminated to the NPS in a draft report entitled *Section 4(f)/303(c) Analysis for Proposed Replacement Airport at St. George, Utah*. See **Attachment N-2** for documentation related to the November 9, 2004 meeting between FAA and the NPS.

All additional coordination with the NPS is included in **Attachment N-3**.

Attachment N-4 contains the FAA's proposed L90 white paper entitled, *Explanation for Not Using L90 in the St. George EIS Noise Analysis*.

Attachment N-1

**Memorandum of Understanding (MOU) between the FAA
and the National Park Service**

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MEMORANDUM OF UNDERSTANDING (MOU)
BETWEEN THE
FEDERAL AVIATION ADMINISTRATION AND
THE NATIONAL PARK SERVICE
FOR THE
ST. GEORGE, UTAH, REPLACEMENT AIRPORT
ENVIRONMENTAL IMPACT STATEMENT (EIS)

June 26, 2003

The following understandings are agreed to by the Federal Aviation Administration (FAA), acting as the lead Federal agency, and the National Park Service (NPS) as cooperating Federal agency.

This MOU describes the agencies' (signatories) respective responsibilities (consultation, preparation, and review of the EIS) pursuant to the requirements of the National Environmental Policy Act (NEPA). The City of St. George, Utah, is the sponsor of this proposed action.

I. PURPOSE

The purpose of this MOU is:

- (1) to designate the NPS as a cooperating agency in the preparation of the St. George Replacement Airport EIS,
- (2) to define each signatory's role, obligations, and jurisdictional authority regarding the EIS,
- (3) to provide a framework for cooperation and coordination among the signatories to facilitate completion of the NEPA process including issuance of required Records of Decision, and fulfillment of other environmental responsibilities each signatory may have.

II. REGULATORY CRITERIA

Under the policies, directives, plans, and operations of the FAA, and under NEPA [42 U.S.C. 4371 *et seq.*] the FAA, as lead Federal agency, has the responsibility to designate those portions of the EIS upon which each cooperating agency will focus its evaluation of environmental issues. The resource designations will be based upon legal jurisdiction or expertise of the cooperating agency, and will not limit that agency's ability to comment the EIS.

Following the directives of NEPA, the signatories to this MOU shall cooperate fully and share information and technical expertise to evaluate the potential environmental effects of the proposed action and its alternatives. Each signatory shall give full recognition and respect to the authority, expertise, and responsibility of the others. Participation in this MOU does not imply endorsement of the proposed project, nor does it abridge the independent review of the Draft and Final EIS by the signatory agencies. The signatories acknowledge that the FAA, as lead agency, has the responsibility for the content of the Draft and Final EIS and its conclusions.

III. PROCEDURES

1. The FAA is the lead Federal agency for this project. It is ultimately responsible for preparing the Draft and Final EIS's and for assuring compliance with the requirements of NEPA. Although the FAA agrees to give respect and recognition to the jurisdiction of the cooperating agencies, the FAA is responsible for considering *mitigation of significant impacts* to the quality of the human environment associated with the proposed project. FAA cannot delegate its core NEPA responsibilities to the cooperating agencies. In meeting these responsibilities, the FAA will use the environmental analyses, proposals, and expertise of the cooperating agencies to the extent possible consistent with its responsibilities, and as the lead agency, will retain ultimate responsibility for the EIS's content [see 40 CFR, 1501.6(a)(2) and Council on Environmental Quality's (CEQ) 40 Questions, No. 14b.]. This includes defining the issues, determining purpose and need of the project, selecting or approving alternatives and mitigation measures, reviewing and requiring modification of the EIS, responding to comments on the Draft EIS, and retaining responsibility for the conclusions of its environmental analysis.

2. The FAA's goal is to prepare an EIS that contains sufficient information for each signatory to fulfill their NEPA responsibilities and make independent decisions on resources and issues under their purview. As such, the cooperating agencies are to:

(1) Participate in the NEPA process at the earliest appropriate time, including input to and review of scopes of work for EIS work of contractors,

(2) to the extent possible, make staff support available to review and comment upon draft working papers, draft EIS chapters, and the completed draft document before printing *within the timeframes negotiated with the NPS*,

- (3) exchange relevant information throughout the EIS process,
- (4) submit independent recommendations, and
- (5) assist the FAA in developing responses to "cooperating agency specific" comments received on the Draft and Final EIS.

The cooperating agencies will not be responsible for the actual preparation of any portion of the EIS or related technical reports, however they may provide comments to FAA on their respective resource sections.

3. As appropriate, and to enhance the effectiveness of this MOU, the FAA will work with the cooperating agencies to ensure access to FAA expertise, data, information, analyses, and comments received.

4. Within 14 calendar days of signing this MOU, each signatory will identify a designated Point of Contact (POC) for coordination and consistency on the project. It is anticipated that this project may present some complex issues. The agencies realize that this is a long-term commitment of resources and will make every effort to maintain the same POC through the duration of the NEPA process. If reassignment of the POC becomes necessary the agency will notify the MOU signatories of said change. In such cases, previous official written agreements and positions will not be revisited, unless there is significant new information or significant changes to the project, the environment, or laws and regulations.

5. The signatories will ensure appropriate coordination, communication, project updates and status reviews occur, as needed, to keep each other current on the project's progress.

6. The FAA will appropriately incorporate the comments, analyses, recommendations, and/or data submitted by the cooperating agencies in the Draft and Final EIS, and will utilize a systematic, interdisciplinary approach that will ensure the consideration of the submitted material.

7. The FAA will inform the cooperating agencies of all schedule changes that would affect an agency's ability to provide timely review of the document. Adequate time will be given for agency reviews.

8. The cooperating agencies will keep confidential and protect from public disclosure any and all documents received prior to determination by the FAA of suitability for public review or release under the directives of the Freedom of Information Act.

9. The agencies agree not to employ the services of any representative or party having a financial interest in the outcome of the proposed project. The cooperating agencies will take all necessary steps to ensure that no conflict of interest exists with its consultants, counsel, or representatives employed in this undertaking. [40 CFR §1506.5(c)] If disclosure statements are obtained as a result of contractor or other selection regarding this action, copies of the disclosure statements will be forwarded to the FAA for inclusion in the Administrative Record.

IV. RESOURCE DESIGNATIONS

1. Based on *NPS* jurisdictions by law and/or special expertise, the FAA, pursuant to its lead agency responsibilities [CEQ 1501.6 (b)(3)], makes the following requests:

The NPS will focus its efforts on those portions of the Draft and Final EIS requiring information, review and comment on issues pertaining to the NPS Organic Act (1916), National Parks and Recreation Act (1978), National Parks Omnibus Management Act (1998), and the National Parks Air Tour Management Act (2000). The NPS has and will provide expertise, existing data, and/or references that relate to park resources in southern Utah, northern Arizona, and southern Nevada. The NPS will propose and evaluate, in cooperation *with FAA and other cooperating agencies, measures to mitigate significant impacts* to park resources and park visitor experiences.

V. ADMINISTRATION

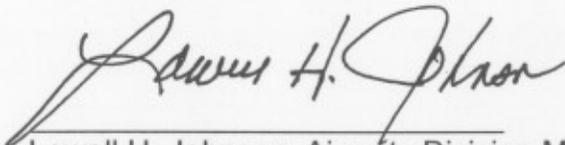
1. Nothing in this MOU will be construed as affecting the authority of any signatory. *The NPS does not* waive its sovereign immunity by entering into this MOU and fully retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of this agreement.
2. This MOU does not obligate the FAA to provide funding for cooperating agency involvement in this effort, nor does it require the signatory agencies to obligate or expend funds in excess of available appropriations.
3. If a disagreement should develop between the agencies, the POC's will expeditiously attempt to resolve the disagreement through consensus. If timely amicable resolution is not achieved at the POC level, the matter shall be promptly referred to mid-level management of these agencies for their participation in the resolution process. In the event that mid-level managers are unable to reach a satisfactory solution, the matter will be referred to the persons whose signature appears in Section VI of this MOU, who will be asked by the FAA to convene a meeting or a conference call to reach a satisfactory resolution. Final decisions by the lead agency will be made only after an earnest attempt to gain consensus has occurred.

4. This MOU shall become effective on the date on which all parties have signed this MOU and may be amended (upon concurrence by both the FAA and the NPS) or terminated as needed. This MOU shall be terminated when the FAA issues a Record of Decision or for reasons of good cause upon 30 days prior written notice. An example of good cause is The City of George's withdrawal of the proposed action.

5. Any signatory may request re-negotiation or modification of this MOU at any time. All signatories will consider the proposed changes, and upon mutual agreement, adopt the proposed changes. The signatory that proposed the change shall provide copies of the adopted revised MOU to the other signatories.

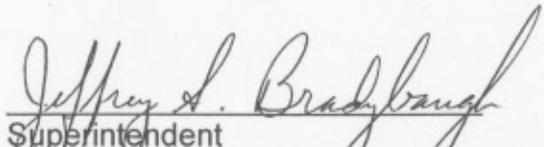
6. This MOU shall be incorporated into or referenced in the Draft and Final EIS's for public review so that each signatory's respective roles may be understood.

VI. AGREEMENT TO PARTICIPATE IN THIS MOU

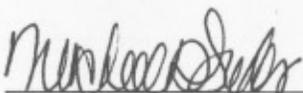


Lowell H. Johnson, Airports Division Manager
Federal Aviation Administration
Northwest Mountain Region

6/26/03
Date

Acting 
Superintendent
National Park Service, Zion National Park

7/11/03
Date


Karen P. Wade, Regional Director
National Park Service, Intermountain Region

7/15/03
Date

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Attachment N-2

Documentation of November 9, 2004 Meeting between the FAA and the National Park Service

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U.S. Department
of Transportation

**Federal Aviation
Administration**

Northwest Mountain Region
Colorado, Idaho, Montana
Oregon, Utah, Washington,
Wyoming

1601 Lind Avenue, S. W.
Renton, Washington 98055-4056

November 18, 2004

Mr. Jock F. Whitworth, Superintendent
National Park Service
Zion National Park
Springdale, UT 84767

Dear Mr. Whitworth: *Jock*

We were pleased with our meeting in Denver on November 9, regarding the replacement airport project for St. George. Our consultant and we covered considerable ground and we hope that was useful and will serve as a new start to consider the impacts of this proposed replacement airport.

As our meeting concluded, we discussed and agreed on a number of items that each agency would take as followup actions. The following is a list of those items:

a. We agreed to establish with you a schedule of teleconferences, to provide an opportunity to discuss progress, issues and comments related to our ongoing environmental impact statement (EIS) preparation. The teleconference will occur every other Wednesday at 9 a.m., Pacific Standard Time, beginning December 1. The participants would include you, Jeff Bradybaugh, Dave Field, Dennis Ossenkop and myself.

b. We agreed to send, and have sent, a request to the Volpe National Transportation Systems Center personnel to send you Zion-ambient data files for the 1995, 1998, and 2000 measurement studies. We also agreed to forward to you the methodology used to produce the Zion-ambient map, shown at our November 9 meeting. Currently, the methodology text is being prepared. We will forward that upon its completion.

c. Mark Johnson from Landrum and Brown agreed to provide the following information:

- (1) Definitions of local and itinerant operations.
- (2) The number of operations at local airports.
- (3) A graphic method to note overlapping flight tracks (old and replacement airport operations using the same flight track segment).
- (4) The name of the air tour operator who is currently operating out of the St. George Airport. David Ulane, Manager, St. George Airport, should be able to provide the information.

(5) A summary of the air-tour operator fleet mix.

Dennis Ossenkop will followup on the above five items, once Mark Johnson returns to his office from the November 16 public information meeting in St. George.

d. We agreed to send Jeff Bradybaugh the current version of Chapters 1-4 of the EIS for his review. We are still waiting for the contractor to provide us a copy, and will notify Jeff once we have this material.

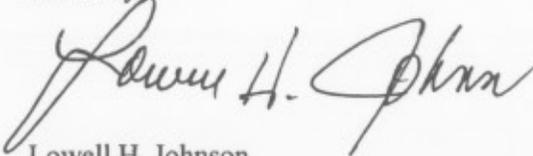
e. In our discussion of an appropriate turnaround time for the National Park Service (NPS) to comment on draft materials we send, Karen Trevino suggested a 2-week turnaround would be reasonable. We appreciate the NPS commitment to this 2-week turnaround, especially because of the "streamlining" designation for this project.

f. To make the second-round review of draft material easier, Dennis Ossenkop will work with Mark Johnson to determine an acceptable method of highlighting edited text. This is a discussion Dennis will pursue when Mark returns to his office from the November 16 public information meeting in St. George.

We also discussed other issues for which there may be a need for further clarification or followup. For instance, I seem to recall a discussion about which air tour operators are flying over Zion National Park. However, I am unsure if the issue was resolved to everyone's satisfaction, or whether there was an "IOU" taken to provide more information. In addition, we gave a copy of the 4f screening analysis to each NPS attendee at the meeting, and per our telephone conversation on November 18, we expect your comments on the 4f analysis by December 14. We would be interested in your thoughts on what criteria to use to determine which 4f-type land uses, other than Zion National Park, need more in-depth analysis. Also, if there are any other topics related to our meeting that you feel need more discussion, we would be interested in your thoughts on those issues.

In closing, I would like to stress my view that our meeting had a lot of positive outcomes. I remain optimistic that a cooperative relationship can result in accomplishing the difficult task of meshing aviation needs with the desire to preserve the beauty and peacefulness of one of our nation's historic national parks.

Sincerely,



Lowell H. Johnson
Manager, Airports Division
Northwest Mountain Region

cc:

Mark Johnson
David Ulane

AGENDA FAA AND NPS
MEETING ON ST. GEORGE, UTAH REPLACEMENT AIRPORT
ENVIRONMENTAL IMPACT STATEMENT (EIS)
NOVEMBER 9, 2004

- I WELCOME AND INTRODUCTIONS
 - A. Who is Here, Representing Whom

- II PURPOSES OF THE MEETING
 - A. Have a constructive dialogue on FAA and NPS cooperation on the St. George EIS, including procedural and technical collaboration.
 - B. Discuss St. George project selection for expedited review under President's Executive Order, and the priority this places on interagency cooperation and timing.
 - C. Review and discuss the screening analysis of aircraft operational and noise changes for DOT Section 4(f) resources in the vicinity of the proposed St. George airport project, and the extent to which additional analysis may or may not be needed for specific resources.
 - D. Explore how we can proceed with the St. George EIS while recognizing other national aviation noise issues (ATMP, Grand Canyon).

- III FAA AND NPS COMMENTARY ON PURPOSES OF THE MEETING

- IV PROJECT BACKGROUND--Mark Johnson, Deputy EIS Manager, Landrum and Brown Consultants
 - A. Master Plan, Environmental Assessment, Litigation
 - B. EIS Plan Development, Cooperating Agency MOU
 - C. EIS Schedule including November 16 public information meeting
 - D. DOT Secretary's list for Streamlining

- BREAK

- V NOISE ANALYSIS
 - A. NOISE ANALYSIS COMPLETED TO DATE--Mark Johnson, Jon Woodward
Landrum and Brown Consultants
 - 1. Data gathering for Noise Analysis
 - 2. Modeling Locations
 - a. Existing Airport Vicinity
 - b. Replacement Airport Vicinity
 - c. Zion National Park
 - 3. Screening Analysis of Other DOT Section 4f properties
 - B. Discussion of Noise Methodology and Interpretation (FAA & NPS)

- BREAK

- VI FOLLOW-UP ACTIONS
 - A. Communication channels
 - B. Attendance at public meeting in St. George
 - C. Coordination of screening analysis
 - D. Continuing procedural and technical collaboration

FAA NPS INTL 11/9/04

435-772-0140

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Jake Plante FAA Airports Office (SPP-600) jake.plante@faa.gov

Jeff Bradybaugh ZION Nat'l Park jeff.bradybaugh@nps.gov 435-772-~~3377~~⁰³⁰

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Cynthia Nelson, Denver Airports District Office, 303-342-1265 Cynthia Nelson@faa.gov

Phillip Bracker, FAA-Denver Airports District Office, 303-342-1264 phillip.bracker@faa.gov

Melinda Mundy Lee, Denver Airports District Office, 303-342-1280 melinda.lee@faa.gov

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Attachment N-3

Coordination between the FAA and the National Park Service

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado, Idaho, Montana
Oregon, Utah, Washington,
Wyoming

1601 Lind Avenue, S. W.
Renton, Washington 98055-4055

August 29, 2003

Mr. Jeff Bradybaugh
Zion National Park
Springdale, UT 84767

Dear Jeff :

Enclosed is a copy of the Final Draft Scope of Work (SOW) for the Environmental Impact Statement (EIS) for the replacement airport at St. George, Utah. As our primary cooperating agency, I am sending you the draft SOW for your review and comment. Because of the sensitive nature of this document at this time, I remind you of Item 8 under Procedures in the June 26, 2003, cooperating agency Memorandum of Understanding that states:

"8. The cooperating agencies will keep confidential and protect from public disclosure any and all documents received prior to determination by the FAA of suitability for public review or release under the directives of the Freedom of Information Act."

The St. George EIS SOW is not ready for release to the public or public review.

I would be happy to conduct a telephone conference with you to address questions you may have about the SOW.

I would appreciate receiving comments from the National Park Service by September 23, 2003.

If you have questions on this matter, please call me, at (425) 227-2611.

Sincerely,

Dennis Ossenkop
FAA EIS Project Manager

Enclosure



United States Department of the Interior

NATIONAL PARK SERVICE
Zion National Park
Springdale, Utah 84767



L7617 (ZION-RM&R)

January 13, 2005

Mr. Dennis Ossenkop, Environmental Protection Specialist
Federal Aviation Administration
Northwest Mountain Region
1601 Lind Avenue, SW
Renton, Washington 98055-4056

Dear Mr. Ossenkop:

We appreciate the opportunity for the National Park Service (NPS) to participate in the environmental impact statement (EIS) process for the proposed replacement airport at St. George, Utah. As requested, we have reviewed the *Zion National Park Ambient Acoustic Data Analysis* and *Appendix C - Air Tour Operator Survey Report*. At this time, we have no comments on the *Air Tour Operator Survey Report*. We recognize the effort it took to compile the information in the report and we are certain the information will be useful in the impact analysis for the EIS.

As presented, the *Ambient Acoustic Data Analysis* accurately represents the amount and type of data collected in Zion National Park (ZION). Site specific sound level statistics, noise sources, and data processing methods are well documented in the report. However, we are concerned that the L50 values derived from the raw data which are being used to represent "baseline ambient sound levels" do not accurately represent the park's "natural ambient" conditions which are an important aspect in NPS units.

In developing an ambient map for ZION, the Volpe Center used the "existing ambient" (or the L50 of all data). The rationale for using the "existing ambient" for developing ZION's ambient map was that most of the measurement locations in ZION were in very remote locations and thus not likely to be influenced by human-caused sounds (Chris Roof, personal communication). If there are no human-caused sounds present at a given location, the existing ambient and the natural ambient are often the same.

Unfortunately, all locations in ZION, even the most remote locations, are subject to human-caused sounds and as a result, the "existing ambient" (or the L50 of all the data) is not an accurate measurement of the "natural ambient." At two locations used in the Wyle study, Chinle and Kolob, the NPS collected two weeks of audibility data in the fall of 2001. At these locations, human-caused sounds were audible 25 to 30 percent of the time (mean for all hours), with some hours exceeding 55 percent. Clearly, the L50 (or median) of these data would not accurately represent natural ambient conditions. Although these NPS data represent only a short fall period (late August), it is clear that human-caused sounds are audible in even the most remote parts of the park.

The NPS, Natural Sounds Program, and the Federal Aviation Administration, Volpe Center, have developed definitions of ambient sound conditions and methods for calculating ambient levels. These definitions are being

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used to develop ambient sound conditions in order to assess impacts due to air tours. The primary ambient conditions and appropriate calculations are:

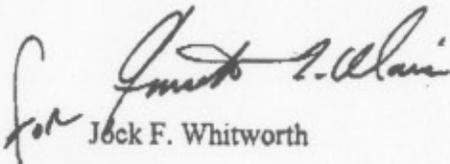
The "Existing Ambient" is the composite, all-inclusive sound associated with a given environment, excluding only the analysis system's electrical noise. This ambient is calculated by determining the L50, the median, of all acoustic data.

The "Natural Ambient" is the natural sound conditions found in a study area, including all sounds of nature (i.e., wind streams, wildlife, etc.), and excluding all human, aircraft, and other mechanical sounds. This ambient is calculated by determining the median of all acoustic data without human-caused sounds.

In situations where audibility data are not available for large areas of the park, or only for brief periods, the L90 metric is commonly used to describe "natural ambient" conditions. For developing the ambient sound map of ZION, the L90 metric should be used to represent the "natural ambient" sound conditions in the park.

Attached are section specific comments on the acoustic data. We appreciate the opportunity to comment on the draft version of the *Zion National Park Ambient Acoustic Data Analysis* for the proposed St. George replacement airport EIS. If you have any questions, please contact Kezia Nielsen, Environmental Protection Specialist, at 435-772-0211 or kezia_nielsen@nps.gov.

Sincerely,


for Jock F. Whitworth

Enclosure

cc:

Environmental Quality Coordinator, NPS Intermountain Regional Office
Manager, NPS Natural Sounds Program Office
Environmental Protection Specialist, NPS WASO-GRD
Supervisory Geographer, NPS Intermountain Regional Office
Superintendent, Bryce Canyon National Park
Superintendent, Cedar Breaks National Monument

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**Specific NPS Comments on
Zion National Park Ambient Acoustic Data Analysis
St. George Replacement Airport EIS
January 2005**

Section 1.0

Immediately, the decision to utilize L50 as the basic metric to determine the "ambient" sound levels across Zion National Park (ZION) is unacceptable to the National Park Service (NPS). Accepted policy is to utilize L90 in national parks to assess the natural ambient soundscape. Traditional ambient using L50 metric is not acceptable. As required by law, the Federal Aviation Administration should defer to the NPS on park management, including managing soundscape resources. The NPS has "special expertise" (as defined in 40 CFR 1508.26) in evaluating impacts on park resources, visitor experiences, and related values.

Section 3.3

Paragraph 1: Mentions that sound level maps were not adjusted relative to the change in terrain/land cover and sound levels over a very short distance...and goes on to say that not making such adjustments over short distances "...contrary to what would be expected for typical acoustic propagation over short distances." A better explanation of why these adjustments are not important should be developed and what parameters of typical acoustic propagation are not applicable/cannot be applied in this case.

Paragraph 2: There are no train tracks in the vicinity of ZION – delete this reference.

Using sound data relative to streams as an overlay and applying a drop-off rate seems applicable, but we want to see how that was applied in specific stream courses across the landscape and would like to review this with the acousticians. NCREEK and PRWEAP are different order streams, producing significantly different sound levels – we expect the acousticians utilized these differences to reflect the variability in modeled streams, but we would like to review that with them. If we were more closely involved with the work, as we offered in our response to the work plan, we would be much more informed on these analyses.

Road noise assumptions appear reasonable, but again, we would like to discuss the analysis process with acousticians. An assumption or consideration not mentioned was the effect of large landforms and how sound radiating out from roads, which are in some cases confined by significantly higher, perhaps "sound-confining" land forms affects the "estimated drop-off rate" which is implied to be a "continuous" or linear relationship, which in some situations doesn't seem to make sense.

Note 1: Is averaging the total vehicle count over 365 days per year representative? In Zion Canyon for instance, the shuttle only operates part of the year (late March through October). The rest of the year private vehicles are allowed in the canyon. In winter the canyon is much quieter – fewer people, fewer vehicles, etc. – so sounds are more audible. With these differences, how can averaging provide a true picture of the soundscape in the canyon?

Note 3: The assumption that the shuttle bus noise level is the same as a diesel bus is erroneous. The shuttle buses are powered by a Cummins 5.9-liter B Series LPG engine. Cummins states that the noise output of these propane engines is "up to 14 dBA quieter than a diesel." (Refer to attached Cummins flyer) This information should be reflected in the acoustic analysis.

Note 4: Did Volpe use our visitor use statistics? Again averaging over the whole year is problematic, especially for Kolob Canyon where the road is often closed, in whole or in part, in winter. Also in winter, there is very little traffic and therefore the soundscape in that part of the park is very quiet relative to vehicles – same for other areas with winter road closures. Winter is an important period relative to soundscape, backcountry solitude. The actual traffic counts (number of vehicles per month) for Kolob Canyon for 2001 are as follows:

Month	Number of Vehicles
January	2,842
February	2,524
March	3,593
April	5,697
May	6,492
June	7,067
July	7,100
August	7,268
September	6,274
October	5,473
November	3,711
December	1,796

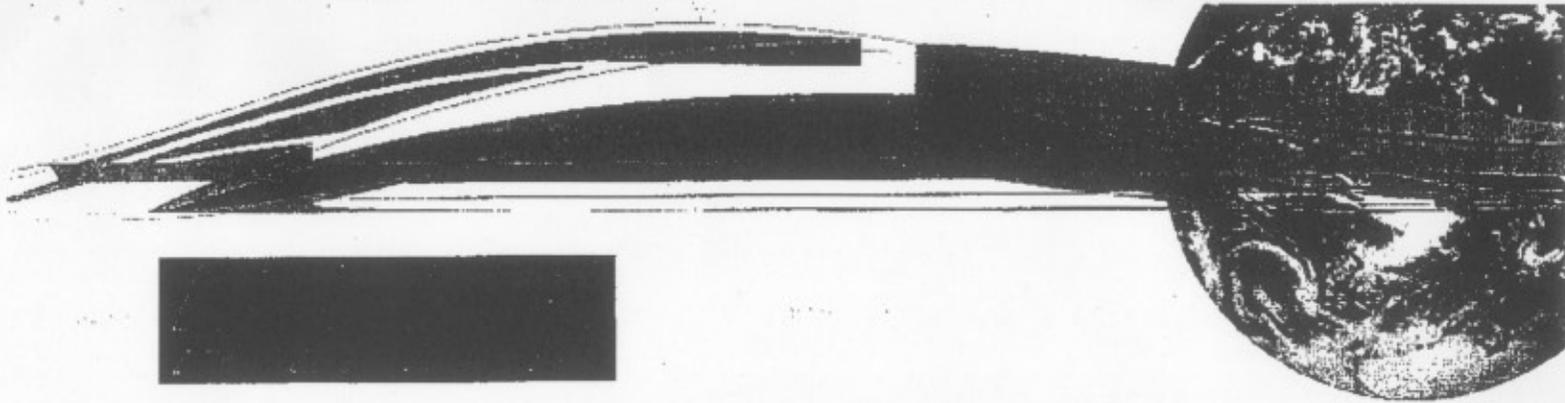
Ground Impedance assumptions again appear reasonable, but we have no way of assessing how they were applied or calculated and would like to discuss these with acousticians. It also is unclear if one value (“moderately hard”) was used universally.

Section 3.4

Define Input Objects – Point 4: Using distance to roadways for areas outside of Frontcountry Development Zones (and therefore the noise associated with them) leads directly into assuming Traditional Ambient rather than Natural Ambient. Though the noise contribution from roads diminishes over distance to backcountry grid points, those backcountry grid points where road noise is modeled or measured, masks Natural Ambient and affects any L50 or L90 calculation.

Assign an L50 measured ambient sound level... - L50 is an inappropriate metric for backcountry areas which constitute 91 percent of the park land area.

Assign a localized ambient sound level... - see above Define Input Objects – Point 4.



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U.S. Department
of Transportation

Federal Aviation
Administration

Northwest Mountain Region
Colorado, Idaho, Montana
Oregon, Utah, Washington,
Wyoming

1601 Lind Avenue, S. W.
Renton, Washington 98055-4056

January 10, 2005

Mr. Jock F. Whitworth, Superintendent
National Park Service
Zion National Park
Springdale, UT 84767

Dear Mr. Whitworth: *Jock*

We appreciate the NPS timely review of Chapters 1-4 of St. George EIS, and the November 8, 2004, Draft 4f Screening Analysis. We are continuing to review the NPS comments and how we can improve the document to be more informative to readers of the EIS.

NPS responses to the following issues will assist the FAA in assessing potential environmental impacts of the proposed replacement airport. We appreciate your timely response because we are concerned about our ability to meet the EIS schedule:

Issue 1. NPS information on acceptable changes in noise levels. In our letter to you dated November 18, 2004, summarizing the content of our November 9, 2004, meeting with NPS personnel in Denver, Colorado, we wrote that we would be interested in your thoughts on what criteria to use to determine which 4f-type land uses (within the study area defined in Exhibit 1 of the November 8, 2004, draft Section 4f noise analysis) need more in-depth analysis. Zion National Park will receive a separate evaluation. In using the word "criteria" we mean a quantitative measure of acceptable change in noise levels, such as an increase of 5 dBA. We have not received a response to this important question.

Issue 2. NPS information on resource impairment. For the supplemental noise analysis of Zion National Park we are preparing, we need information identifying areas of special importance within the Park, where resource impairment may be occurring presently or may occur in the future and the basis for this judgment. We believe it important for NPS to share whatever resource-specific information is currently available with the FAA as it relates to potential noise effects in park properties.

The following issues are from the NPS comments on the November 8, 2004, Draft 4f Screening Analysis dated November 8, 2004:

Issue 3. Volpe Center participation. "The Natural Sounds Program is working with the Volpe Center to provide the correct park ambient(s) to the Federal Aviation Administration (FAA) and Landrum and Brown for use in the 4(f) analysis." Second, "As mentioned above the ambient noise level map for ZION, developed by the Volpe Center, may need some refinement. We look forward to working with the Volpe Center to explore such possibilities."

Please clarify whether these statements simply refer ^{to} our joint efforts to analyze NPS Zion NP measurement data and the variable Zion ambient sound level map, or something else. If the latter, please explain the nature and timing of this activity with Volpe Center, how it applies to our noise analyses of Zion National Park and 4 (f) properties, and when it will be made available to the FAA.

The Zion NP ambient map (in the draft 4f noise analysis) was developed on a consistent basis with the latest NPS and FAA Air Tour Management Plan (ATMP) research on this subject. In the context of this interagency activity, please provide an explanation or justification for further refinement of our application.

Issue 4. Noise metrics. "The "ZION L50 Ambient" map appears to depict an initial effort in this regard, however we do not agree with the use of L50 as an appropriate metric for national park lands generally." Second, "Further, we again disagree with use of the defined "traditional ambient" and use of the L50 metric as a representation of the ambient sound environment at Zion." Third, "We will also provide a list of appropriate metrics for assessing the park's soundscape."

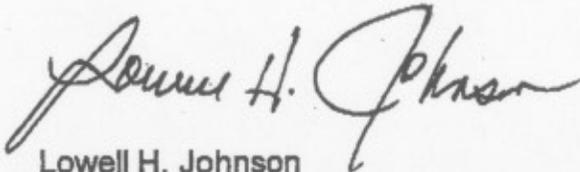
With regard to the FAA use of the median L50 for assessing the average ambient sounds levels of the different acoustic zones of Zion NP, please clarify NPS policy on the "minimum" L90. Reference to L90 was contained in Director's Order #47. Has this Order expired as scheduled (12/04), or has it been extended?

Please provide the detailed, scientific basis for using the L90 and clarify what it means when applied to a natural setting. Also, with regard to NEPA, please explain why FAA use of NPS existing (i.e., traditional) ambient data for multiple acoustic zones, most of which are all-natural, is inappropriate.

It is important for the FAA to have a list of NPS recommended metrics as well as detailed justification for using each of those metrics.

In order to keep the EIS development on schedule, we would appreciate written responses to the above requests by January 25, 2005.

Sincerely,

A handwritten signature in black ink, appearing to read "Lowell H. Johnson". The signature is fluid and cursive, with the first name "Lowell" and last name "Johnson" clearly legible.

Lowell H. Johnson
Manager, Airports Division
Northwest Mountain Region

cc:

Mr. Mark Johnson, Landrum & Brown
Mr. David Ulane, City of St. George
Mr. Ralph Thompson, FAA



United States Department of the Interior

NATIONAL PARK SERVICE
Zion National Park
Springdale, Utah 84767



L7617 (ZION-RM&R)

February 4, 2005

Lowell H. Johnson
Manager, Airports Division
Northwest Mountain Region
Federal Aviation Administration
1601 Lind Avenue, S.W.
Renton, Washington 98055-4056

Dear Mr. Johnson:

Thank you for affording us additional time to respond to your letter of January 10, 2005. We too are concerned about keeping the St. George Replacement Airport environmental impact statement (EIS) on schedule. The information we provide in response to your requests must be carefully considered and as complete and understandable as possible.

Issue 1: NPS information on acceptable changes in noise level

In your letter you asked for our "thoughts on what criteria to use to determine which 4(f) type uses need more in-depth analysis." You go on to define criteria as "a quantitative measure of acceptable change in noise level such as an increase of 5 dBA."

No single metric adequately describes or is appropriate in soundscape management. The National Park Service (NPS) supports the use of several metrics in soundscape management; the most appropriate metrics for a given park depend on that park's purposes, enabling legislation, and management documents. For Zion National Park (ZION), we rely on the following metrics:

- Time Above Natural Ambient (unweighted)
- Time Audible (A-weighted)
- Maximum Single Event Sound Level

Specific soundscape management objectives will vary among different management zones, but these are the primary metrics used in soundscape management in ZION. The following table outlines metrics by zones established in the 2001 ZION General Management Plan (GMP).



GMP Management Zone	Percent Time Above Natural¹	Percent Time Audible²	Max. dBA^{3,4}	Comments
Frontcountry High Development	NA ⁵	NA ⁵	60 dBA	Use best management practices to minimize sound levels of human-caused sound.
Frontcountry Low Development	<50%	<50%	60 dBA	Use best management practices to minimize sound levels of human-caused sound.
Primitive	<25%	<10%	45 dBA	
Pristine	<25%	<10%	45 dBA	
Research Natural Area	<25%	<10%	45 dBA	
Wildlife	Mexican spotted owl – Maximum dBA not to exceed 45 dBA within 100 m of nest (or with entire PAC if nest site not known) between 1 March and 31 August.			
These three management standards, Time Above Natural, Percent Time Audible, and Maximum dBA, shall be achieved in 90 percent or more of the specific management area. Maximum sound levels are as measured at 50 feet from the source (unless a specific regulation applies to a specific source, as with snowmobiles and boats).				
¹ Natural Ambient is defined as the median of acoustic data from natural sounds only, excluding all non-natural sounds. If this cannot be calculated, then the L90 value is used to represent Natural Ambient sound levels.				
² “Audible” means able to be heard by a person of normal hearing.				
³ NPS has established noise standards for snowmobiles (72 dBA @ 50 feet), boats (82 dBA @ 82 feet), and other audio devices (60 dBA @ 50 feet; as described in 36 CFR: 48 FR 30275, June 30, 1983; as amended at 61 FR 46556, Sept. 4, 1996). Natural ambient sound levels in backcountry areas of many national parks, absent mechanical or electrical sounds, are commonly between 20 dBA to 30 dBA, and often less than 20 dBA. An increase of 10 dBA is perceived as a doubling of sound level; hence, a sound level of 45 dBA would be 2 to 5 times greater than natural ambient sound levels common in national parks. Therefore a sound level of 45 dBA for mechanical/electrical sounds is a reasonable maximum allowable level in large areas managed for primitive/wilderness qualities, and where human-caused sounds are rare.				
⁴ Sound levels decrease as distance increases (approximately 6 dBA less as distance doubles, but dependent on several factors such as frequency content, vegetation, ground surface, temperature, humidity, and others). In general, a sound level of 78 dBA at 6 feet would be 60 dBA at 50 feet, 54 dBA at 100 feet, 30 dBA at 1600 feet, and 18 dBA at 6400 feet.				
⁵ NA = Not Applicable. It is understood that in some areas of some parks, such as near a large, busy visitor center, non-natural sounds may be audible, and appropriate for that park purpose, 100 percent of the time.				

Issue 2: NPS information on resource impairment

In your January 10 letter you asked for “information identifying areas of special importance within the park, where resource impairment may be occurring presently or may occur in the future and the basis for this judgment.”

All areas in the park are of special importance, as was stated in our September 16, 2004 letter responding to your request for information regarding lands protected under 49 USC Section 303(c). In particular, over 90 percent of the park is recommended wilderness. These lands were identified through a process that culminated in an environmental impact statement in 1974. Although these lands have not been designed as wilderness by

Congress, NPS Management Policies (2001) state that: “The NPS will take no action that would diminish the wilderness suitability of an area possessing wilderness characteristics until the legislative process of wilderness designation has been completed.” The Wilderness Act describes wilderness suitability and character as part of the wilderness definition as follows:

“A wilderness, ..., is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation;...”

Any aircraft overflight diminishes the experience intended by the Act by eliminating the primeval character and influence of the area, and by interrupting the opportunity for solitude.

The 2001 ZION GMP states: “aircraft flights over the park for sightseeing, photography, or filming purposes can adversely affect the natural soundscape. The potential exists for increases in air tours and associated noise impacts in the park. Land-based sources, such as motor vehicles, can also affect natural sounds.” The plan goes on to identify the following desired conditions and strategies related to the management of natural soundscapes.

Desired Conditions. “Natural sounds predominate in Zion. 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.”

Strategies. Park managers will continue to follow several policies and practices to minimize noise from both land and air sources.

- Park staff will work with Federal Aviation Administration (FAA) to develop an air tour management plan in accordance with Public Law 106-181.
- NPS will work with the Department of Defense to address occasional problems with military overflights.
- Park managers will continue operating the shuttle system and eventually prohibit tour buses in Zion Canyon, which will reduce noise levels and eliminate the greatest source of noise in the canyon.
- Park managers will continue to require bus tour companies to comply with regulations that reduce noise levels (e.g., turning off engines when buses are parked).
- Encourage visitors to avoid the use of generators, thus reducing related noise (electric hookups in the Watchman Campground should eliminate most of the need for generators).
- Maintain the existing quiet hours in campgrounds.
- Continue to enforce existing noise policies in the backcountry.
- Park managers will minimize noise generated by park management activities by strictly regulating NPS and concession administrative use of noise producing machinery, including aircraft and motor vehicles.
- Noise will be a consideration when procuring and using park equipment.
- In 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).
- Park managers will prepare a soundscape preservation and noise management plan.

The U.S. Fish and Wildlife Service (FWS) published their Final Designation of Critical Habitat for Mexican Spotted Owl in the Federal Register Vol. 69, No. 168, August 31, 2004. Critical habitat is “essential to the

conservation of the species.” Almost all of ZION is included in the critical habitat designation. Also the FWS has identified approximately 18,000 acres as protected activity centers (PAC) for Mexican spotted owls within ZION. As stated above in the table, maximum dBA should not exceed 45 dBA within 100 meters of a nest (or within the entire PAC if nest site not known) between 1 March and 31 August.

Issue 3: Volpe Center participation

The ZION ambient map was not developed on a consistent basis with the latest NPS and FAA/Volpe Center Air Tour Management Plan approach. Specifically, the NPS and FAA/Volpe Center recommend that the “natural ambient” sound level be used to describe acoustic conditions in backcountry areas of parks (away from roads and other developed areas). Landrum and Brown used the L50 metric, the existing ambient, to develop the “ZION ambient map.” This approach is not consistent with the NPS/FAA approach to establishing natural ambient maps.

The NPS Natural Sounds Program Office and the FAA/Volpe Center have developed definitions of ambient sound conditions and methods for calculating ambient levels. These definitions are being used to describe and compute ambient sound conditions in parks in order to assess impacts due to aircraft. The primary ambient conditions and appropriate calculations are:

The “Existing Ambient” is the composite, all-inclusive sound associated with a given environment. This “existing ambient” is calculated by determining the L50, the median, of all acoustic data.

The “Natural Ambient” is the natural sound conditions found in a given environment, including all sounds of nature (i.e., wind streams, wildlife, etc.), and excluding all human mechanical and electrical sounds. This “natural ambient” is calculated by determining the median of all acoustic data without human-caused sounds.

In situations where audibility data are not available, the NPS judges the L90 to be the appropriate metric to describe “natural ambient” conditions. At a May 24, 2000 meeting of the Federal Interagency Committee on Aviation Noise, the representative from the FAA Environmental Policy Office stated it was his belief that the L90 may be an appropriate metric to describe the natural ambient in situations where the natural ambient can not be measured, but that the natural ambient should be measured whenever possible. We concur.

One way to establish a more accurate natural ambient base map for ZION would be to re-evaluate the existing data for ZION, as well as data from near-by parks such as Bryce Canyon and Arches (these parks are subjected to similar sound sources and frequency of occurrence of human-caused sounds). From these data sets, a more reasonable natural ambient for ZION might be calculated. This effort could take two to four weeks because of the amount of data involved and the time required for re-calculating metrics. The NPS supports such an effort; however, lacking such an effort, the L90 is the most appropriate metric for calculating natural ambient as discussed above.

Issue 4: Noise metrics

Director’s Order 47. Relative to the NPS position of using the L90 as described above and references to Director Order’s 47 expiring, the NPS held this position prior to publication of DO 47 and continues to support this position after DO 47.

Definition of “traditional ambient.” The NPS and FAA/Volpe Center define “traditional ambient” as the all-inclusive sound associated with a given environment, excluding the sound source of interest. The Landrum and

Brown analysis referred to the L50 as the “traditional ambient” but this is not the case. The L50, as used by Landrum and Brown is actually the “existing ambient” as defined above.

Basis for using L90. Countries throughout the world (and most cities in the United States) use L90 as the metric to define “background” sound levels. The L50 metric, the median of all data, is influenced by human-caused sounds and is not an appropriate metric for describing background or natural ambient sound levels. As mentioned above, the NPS and the FAA/Volpe Center support the use of more accurate calculations of natural ambient if the data are available.

NPS acoustic metrics. Again as stated above under Issue 1, no single metric adequately describes or is appropriate in soundscape management. The NPS supports the use of several metrics in soundscape management. Again, for ZION we rely on the Time Above Natural Ambient (unweighted), Time Audible (A-weighted), and Maximum Single Event Sound Level. Specific soundscape management objectives will vary among different management zones, but these are the primary metrics used in soundscape management in ZION.

We hope the above responses adequately address your questions. If you have additional questions please feel free to contact me or Kezia Nielsen, Environmental Protection Specialist, at (435) 772-0211 or kezia_nielsen@nps.gov.

Sincerely,

Jock F. Whitworth
Superintendent

cc:

Manager, NPS Natural Sounds Program Office
Environmental Protection Specialist, NPS WASO-GRD

MEMORANDUM

U.S. Department of Transportation
Federal Aviation Administration
Airports Division
1601 Lind Ave., S.W.
Renton, WA 98055-4056

SUBJECT: Skip Ambrose Concurrence on Lx Calculation Process

DATE: June 2, 2005

FROM: Environmental Protection Specialist, ANM-611

TO: SGU files

This is the memo from Chris Roof (Volpe) to Skip Ambrose (NPS), indicating that there was NPS agreement on how to perform the ambient data analysis utilizing A-weighted data.

----- Forwarded by Jake Plante/AWA/FAA on 06/02/2005 09:02 AM -----

"Roof, Christopher"

<Christopher.Roof@Volpe.dot.gov>

03/11/2005 12:28 PM

To: "Skip Ambrose" <skipambrose@frontiernet.net>

cc

Subject: RE: ZION Lx calculations

Sorry I didn't get back to you sooner - our day-care provider was sick yesterday so I was out on Daddy-duty.

I agree, writing up the Lx analysis in a manner that's useful for both technical and non-technical people is a challenge. Rather than having multiple versions of such a description, I'll fold in text to a soup-to-nuts description of the handling of Wyle ambient sound level data for Zion and send that through the appropriate channels - I should be able to get that out next week. Note that it is based on Cyndy's Hawaii Volcanoes draft document, with subtle changes specific to the Zion data.

Attached is a summary of the acoustic observer log durations from the Wyle data. I included summary durations for both individual measurement periods, as well as an overall summary for each site, as multiple logging sessions were undertaken at most sites.

Given the time constraints that the people working on the EIS are under, I am going to try and finalize the data for use in INM in the next day or so (like Cyndy's done for the ATMPs - generating an ambient grid file). I've let the appropriate FAA people on the EIS team know about our discussion on Wednesday and that you are comfortable with the process of analyzing Zion ambient data using the Lx.

Hope all is well in Moab!

chris

**Summary of Zion
Acoustic Observer Log Durations**

Duration	Site-Period	Site-Total
1:00:00	CHINLE-1	-
0:52:03	CHINLE-2	-
0:59:17	CHINLE-3	2:51:20
(N/A)	CRZQLT	(N/A)
1:04:17	EASTRM	1:04:17
0:12:09	HOPVAL-1	-
0:58:49	HOPVAL-2	1:10:58
(N/A)	KOLOBC	(N/A)
(N/A)	LAVAPT	(N/A)
1:16:55	LCREEK	1:16:55
1:20:07	LFRKTD-1	-
1:32:12	LFRKTD-2	-
0:41:25	LFRKTD-3	3:33:44
0:29:12	NCREEK-1	-
0:59:30	NCREEK-2	-
0:25:40	NCREEK-3	-
0:58:14	NCREEK-4	2:52:36
0:29:58	PRWEAP-1	-
0:38:58	PRWEAP-2	1:08:56
1:03:37	SCOUTS-1	-
0:55:00	SCOUTS-2	1:58:37
0:53:35	WILDCT-1	-
0:44:17	WILDCT-2	1:37:52
Total:	17:35:15	17:35:15
Min:	0:12:09	1:04:17
Max:	1:32:12	3:33:44
Avg:	0:52:46	1:57:15



U.S. Department
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Colorado, Idaho, Montana
Oregon, Utah, Washington,
Wyoming

1601 Lind Avenue, S. W.
Renton, Washington 98055-4055

March 1, 2005

Mr. Jock Whitworth
Superintendent
Zion National Park
Springdale, UT 84767

Dear Mr. Whitworth:

This is to thank Jeff Bradybaugh, Kezia Nielsen, Kerry Moss, and Skip Ambrose for accommodating our request for a teleconference on February 15, 2005, to discuss several issues contained in your letter of February 4, 2005. The issues pertained to the St. George replacement airport environmental impact statement (EIS) supplemental noise analysis for Zion National Park (ZNP).

We discussed the following during the February 15 teleconference:

- The use of L50 natural (L50 existing less human-caused sounds) in the ZNP noise analysis for the EIS, because the L50 natural data are more representative of the natural soundscape than the L90.
- No supporting data for the L50 natural calculation is required from other national parks (e.g., Bryce Canyon or Arches), because there is sufficient data from ZNP.
- The Federal Aviation Administration (FAA) will continue to use standard A-weighting for the analysis.
- The FAA appreciates your clarification of how “unweighted” descriptors are possibilities for future research regarding non-human audibility, and there is no need to discuss this subject in the EIS.

After the teleconference, Dennis Ossenkop of this office, and Jake Plante of our headquarters Community and Environmental Needs Division, contacted our Office of Environment and Energy (AEE) to followup on the proposed methodology for the analysis. This office is responsible for policy and approval of FAA noise analyses.

We are pleased to report that AEE has approved our use of the L50 natural approach discussed in the February 15 teleconference with the National Park Service (NPS) personnel. Based on this approval, the following applies to the St. George EIS analysis:

- We will use all of the NPS/Wyle sound data collected from 2000-2001, as outlined in the Wyle Report of March 2003, to do the requested “natural” sound analysis for ZNP, in addition to our standard analysis (L50) of the existing environment. Thus, the supplemental ambient sound-level analysis for ZNP will be a dual L50 analyses of existing and natural sound conditions. The L90 will not be used in the EIS analysis.
- It should be understood that the FAA agreement to use this type of supplemental noise analysis at ZNP is based solely upon the unique values represented by ZNP, a nationally significant parkland protected by Title 49 of the United States Code, §303(c), whose quiet setting is a recognized purpose and attribute.

We would appreciate an indication of your acceptance of this proposed plan by March 4, due to the limited time schedule associated with the EIS. Then we can begin the work on this additional analysis.

Again, thank you for your assistance in answering our questions. If you have questions on this matter, please telephone Dennis Ossenkop at (425) 227-2611.

Sincerely,

(Original Signed by)

Lowell H. Johnson
Manager, Airports Division
Northwest Mountain Region



United States Department of the Interior



NATIONAL PARK SERVICE Zion National Park Springdale, Utah 84767

IN REPLY REFER TO:
L7617 (ZION-RM&R)

March 4, 2005

Mr. Lowell H. Johnson
Manager, Airports Division
Northwest Mountain Region
Federal Aviation Administration
1601 Lind Avenue, S.W.
Renton, Washington 98055-4056

Dear Mr. Johnson:

We appreciate your willingness to work with us on determining how to best analyze noise impacts to Zion National Park (ZION) from the proposed replacement airport at St. George. We concur with your March 1 letter summarizing the agreed upon noise analysis from the February 15 conference call between the Federal Aviation Administration (FAA) and the National Park Service (NPS).

Using the NPS/Wyle sound data and completing the L50 "natural" noise analysis for ZION will give decision makers and the public a more complete picture of the potential impacts to ZION from increased air traffic over the park. It is essential that this analysis be included in order to adequately address and mitigate those impacts.

We request that the Volpe Center contact Skip Ambrose to ensure that the NPS and the FAA are clear about the agreed upon methodology that will be used for this noise analysis. This will alleviate potential problems that could compromise the environmental impact statement (EIS) schedule.

We also hope that a complete description of the noise metrics and why they were used or not used as in the case of L90 are included in the EIS. This information will provide rationale that will help support the decisions that will be made in the EIS and will also help alleviate questions from the public on this matter.

Should you have any questions, please contact Kezia Nielsen, Environmental Protection Specialist, at 435-772-0211 or kezia_nielsen@nps.gov. We look forward to continued coordination with you and your staff, the EIS contractor, and the City of St. George on this project.

Sincerely,

(Original Signed by)

Jock F. Whitworth
Superintendent





United States Department of the Interior



NATIONAL PARK SERVICE Zion National Park Springdale, Utah 84767

L7617 (ZION-RM&R)

April 26, 2005

Lowell H. Johnson, Manager, Airports Division
Northwest Mountain Region
Federal Aviation Administration
1601 Lind Avenue, S.W.
Renton, Washington 98055-4056

Dear Mr. Johnson:

This letter is intended to clarify the sound metrics the National Park Service (NPS) will use to assess aircraft overflight impacts as part of the analysis for the St. George replacement airport environmental impact statement (EIS). Below is a modified version of the table from our February 4, 2005 letter. The modifications to the table are a result of discussions with our natural soundscape specialists.

Three standards will be used to manage soundscapes in Zion National Park: Percent Time Above Natural, Percent Time Audible, and Maximum dBA. Percent Time Above Natural is an unweighted metric intended to monitor potential impacts irrespective of weighting relative to human hearing. Current sound models assess potential impacts only relative to weighted metrics, all related to human hearing. Although the NPS cannot currently assess potential impacts considering unweighted metrics, additional assessments will be made as these tools become available. At this time, the NPS will not use Percent Time Above Natural to assess impacts of aircraft overflights as a result of the St. George replacement airport.

GMP Management Zone	Percent Time Above Natural ¹ (achieve in >90% of zone)	Percent Time Audible ² (achieve in >90% of zone)	Maximum dBA ³ (achieve throughout zone)
Frontcountry High Development	NA ⁴	NA ⁴	60 dBA
Frontcountry Low Development	<50%	<50%	60 dBA
Primitive	<25%	<10%	60 dBA
Pristine	<25%	<10%	60 dBA
Research Natural Area	<25%	<10%	60 dBA
Wildlife Sensitive Area	Mexican spotted owl – Maximum dBA not to exceed 45 dBA within 100 meters of a nest (or within entire PAC if nest site is not known) between March 1 and August 31.		

¹“Natural Ambient” is defined as the median of acoustic data of natural sounds only, excluding all non-natural sounds. If this cannot be calculated, then the L90 value is used to represent “Natural Ambient” sound levels.

²“Audible” means able to be heard by a person of normal hearing. The “Percent Time Audible” shall be achieved 90% of the time or more in the Primitive, Pristine, and Research Natural Area zones. The “Percent Time Audible” shall be achieved 50% of the time or more in the Frontcountry Low Development zone.

³NPS has established noise standards for snowmobiles (72 dBA at 50 feet), boats (82 dBA at 82 feet), and other audio devices (60 dBA at 50 feet); as described in 36 CFR: 48 FR 30275, June 30, 1983; as amended in 61 FR 46556, Sept. 4, 1996). Other Federal or state regulations may apply in some situations. Where no other regulations apply, the maximum allowable sound level (dBA) shall be 60 dBA at 50 feet. Note: sound levels decrease as distances increases (approximately 6 dBA less as distance doubles, but dependent on several factors such as frequency content, vegetation, ground surface, temperature, humidity, and others). In general, a sound level of 60 dBA at 50 feet would be about 78 dBA at 6 feet.

⁴NA = Not Applicable. It is understood that in Frontcountry areas of the park non-natural sounds may be audible and through the GMP process deemed appropriate for that park purpose 100% of the time.



The NPS considers the values in the table for “Percent Time Audible” and “Maximum dBA” to be thresholds that if exceeded would result in a significant impact: which therefore would require mitigation identified and detailed in the EIS.

Should you have any questions, please contact Jeff Bradybaugh, Chief Resource Management and Research, at 435-772-0208 or jeff_bradybaugh@nps.gov. We look forward to continued coordination with you and your staff, the EIS contractor, and the City of St. George on this project.

Sincerely,

Jock F. Whitworth
Superintendent





United States Department of the Interior

NATIONAL PARK SERVICE

Zion National Park
Springdale, Utah 84767



L7617 (ZION-RM&R)

July 27, 2005

Lowell H. Johnson, Manager
Airports Division
Federal Aviation Administration
Northwest Mountain Region
1601 Lind Avenue, SW
Renton, Washington 98055-4056

Dear Mr. Johnson:

We appreciated the opportunity for Kerry Moss and Jeff Bradybaugh to meet with you last week. Meeting face to face yielded fruitful discussions in furthering completion of the draft Environmental Impact Statement (dEIS). As requested, we have reviewed the preliminary draft of Chapter 8 – Department of Transportation Act Section 4(f)/303(c) Lands for the St. George Replacement Airport Environmental Impact Statement. Our comments are outlined in the enclosure.

As we discussed last week, our review of chapters 6, 7, and 8 again raises concern regarding the FAA assessment of cumulative impacts in the dEIS. In our evaluation of those chapters, we believe that only analyzing the incremental project impacts and changes between the existing airport and the replacement airport at two future years, only captures a portion of the cumulative effect. Rather, we believe that changes from a baseline year or present conditions and across the forecasted years should be included to complete the cumulative impact assessment. We believe such an analysis is required to meet National Environmental Policy Act regulations (40 CFR 1508.7, 1508.25(a)(2) and 1508.27(b)(7)) and FAA requirements for Environmental Impacts Policies and Procedures (6/8/04) (FAA Order 1050.1E - - Chapter 5: Environmental Impact Statements and Records of Decision, section 500c). These regulations clearly require a complete cumulative impact analysis that takes into account the contributions of past, present, and reasonably foreseeable future actions even if they are not directly attributable to the proposed project, but when related and taken together, may constitute a potential impact to sensitive resources.

Should you have any questions regarding our comments, please contact Jeff Bradybaugh, Chief of Resource Management and Research, at 435-772-0208 or jeff_bradybaugh@nps.gov. Again, we appreciated the opportunity for our staff to discuss these and many other issues at your offices in Seattle last week.

Sincerely,

/ s /

Jock F. Whitworth
Superintendent

enclosure



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Attachment N-4
Proposed L90 White Paper

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Explanation for Not Using L₉₀ in the St. George EIS Noise Analysis

The FAA is relying primarily on the NPS/Zion ambient measurement program for the EIS supplemental noise analysis at Zion National Park. The NPS measurement data are high-quality, and NPS site selection reflects an appropriate and representative balance of quieter and more natural sites at Zion. The Zion ambient map is primarily comprised of natural sites and measurements, reflecting the park's large backcountry and wilderness areas. The EIS noise analysis includes aircraft noise data in comparison to existing ambient and natural ambient values in Zion. For natural ambient values, FAA and NPS agreed to use the L₅₀ natural, i.e., the median of acoustic data of natural sounds only, excluding all non-natural sounds.

If the L₅₀ natural could not have been calculated, NPS's recommended alternative would have been the use of the L₉₀ value to represent natural ambient sound levels. The use of the L₉₀ is moot in the case of the St. George EIS because the L₅₀ natural was calculated. However, the FAA does not agree with the use of the L₉₀ because it produces too low a value to be a reliable indicator of median natural ambient sound levels in national parks.

L_n noise descriptors are convenient for analyzing unmanned field-monitored data. Monitored data are easier and cheaper to collect over longer periods of time than observer-based measurements, which are labor-intensive and therefore more costly. The L₉₀ descriptor is the 10th percentile of the data; that is, it is the quietest 10 percent of the ambient data. The L₉₀ is, therefore, a sound level that is exceeded 90 percent of the time by all sounds—human, animal, wind, water, etc. The L₉₀ has a history as part of a few urban noise measurement studies. While the L₉₀ may be a reasonable statistic to estimate natural sound levels in a highly mixed urban soundscape, it is inappropriate and misleading to apply the L₉₀ to inherently low-level sound environments in national parks.

In connection with the noise analysis work for air tour management plans in national parks, the U.S. DOT Volpe Center analyzed over 345 hours of acoustical data that had been collected at 15 national parks during in-situ measurements with a field observer present. This data was analyzed to determine if there is a statistical L_n descriptor that adequately represents the natural ambient sound level that could be used when long-term unmanned field monitoring is performed. The entire data sample was analyzed to determine the statistical descriptor that is equivalent to the L₅₀ natural. This analysis found that the best equivalent L_n descriptor was likely to fall between an L₅₅ and L₆₅.

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