



## Meeting Notes

Attendees: John Silva, FAA  
Brenda Pope, RIAC  
Carol Lurie, VHB  
Susan Nichols, VHB  
Susanna Liller, B&G  
David Ernst, KM Chng  
Mary Ellen Eagan, HMMH  
Marc Newmark, HMMH  
Andrea Thomas, HMMH  
See meeting sign-in-sheet for  
additional meeting attendees

Date/Time: July 11, 2005

Project No.: 09228.01

Purpose: T.F. Green EIS - Noise and Ambient  
Deposition Studies Monitoring Site  
Selection

Place: Warwick Public Library

Notes Taken by: Susan Nichols

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### Welcome, Introductions, and Project Update

Susanna Liller, from Barton & Gingold, welcomed the group and facilitated introductions. John Silva, Project Manager from the Federal Aviation Administration, introduced the two studies to be discussed at the meeting. Carol Lurie, Project Manager from Vanasse Hangen Brustlin, provided an update on the Environmental Impact Statement (EIS), discussed data collection, and outlined studies to be performed. Ms. Lurie explained the goal of the meeting, the attendee selection process, and the next steps that would follow the meeting.

### Presentations/Question and Answer Periods

Noise and Air Quality Specialists presented study information to the group and took questions.

#### Ambient Deposition Study

David Ernst presented the protocol and purpose of the Ambient Deposition Study as described in the Ambient Deposition Study handout (attached). The meeting attendees asked Mr. Ernst questions about the study and site selection, and Mr. Ernst answered the group's questions.

#### Noise Study

Mary Ellen Eagan presented the protocol and purpose of the Noise Study as described in the Noise Study handout (attached). The meeting attendees asked Ms. Eagan questions about aircraft noise, the noise study, and site selection and Ms. Eagan responded.

### Site Selection Workshop

The goal of the workshop was to select monitoring sites for the Ambient Deposition Study and the Noise Study. The technical staff worked with the meeting attendees to identify locations for monitoring sites on site selection maps.



**If you have comments on the sites selected, please provide them to John Silva by close of business August 2, 2005**

### **Ambient Deposition Study**

The Ambient Deposition Study design as presented included three sampling sites; two near the runways at locations subject to aircraft overflights, and one site known as the "community background site" that would be relatively unaffected by airport operations and aircraft. It was determined that the two runway end sites would be located on airport property. Several locations for the community site were suggested by participants. Steve Majkut, from the Rhode Island Department of Environmental Management, asked if a fourth site could monitor deposition west of the airport near Fieldview Drive. FAA and RIAC determined that a fourth site would be added to the study near Fieldview Drive.

### **Noise Study**

The Noise Study design calls for four primary sites and eight secondary sites. Based on input from participants several primary sites and secondary sites were selected at the meeting. In addition, landowners offered their property for a monitoring site and others have subsequently offered to host the monitors for the study.

### **Follow-up**

Monitoring sites selected at the meeting were field-checked by the technical staff. The locations of the sites will be posted on the EIS website for two weeks ([www.vhb.com/pvd/eis](http://www.vhb.com/pvd/eis)). **If the public or regulatory agencies have comments on the proposed sites, they can be provided to John Silva either orally or as written comments by August 2, 2005.** The Studies will commence in August 2005.

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## Ambient Deposition Study Design Site Selection Meeting – July 11, 2005

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### Introduction

The following presents the proposed protocol for the ambient deposition study in support of the Environmental Impact Statement (EIS) for the T.F. Green Airport Improvement Program in Warwick, Rhode Island. The study will be completed by KM Chng Environmental Inc.

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### Study Goals

The primary goal of this study is to determine if aircraft overflights contribute to soiling of property with particulate matter in the communities surrounding T.F. Green Airport. A secondary goal is to determine the origin or cause of particulate matter being deposited in the nearby communities.

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### Scope and Approach

The key element in the investigation of the ambient deposits (soot) is based on the “Advanced Chemical Fingerprinting” or ACF techniques that were pioneered at the former Arthur D. Little, Inc. The components of the ACF techniques include the development of an appropriate sampling strategy (based on detailed knowledge of Airport operations, emission source characteristics, and meteorology conditions), the selection of specific target chemical contaminants or analyte groups (based on a knowledge of chemical similarities as well as differences of the pollutant sources), and the application of the appropriate diagnostic tools (see section 4 below) to identify the minute but distinguishable differences in the makeup of the deposition samples from various emission sources.

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### Sampling Program

The sampling program is described below with respect to the sampling sites, the methods, and the sampling times to be used.

#### Sample Sites

Subject to final confirmation by FAA, and site availability and accessibility, we presently propose to collect passive deposition samples at three locations as follows:

- In a community location where there is a good likelihood of experiencing the impact from aircraft approaching the Airport, to monitor the effects of arriving overflights;
- In a community location where there is a good likelihood of experiencing the impact of aircraft during takeoff, to monitor the effects of departing overflights;
- At one location in the community that is minimally affected by aircraft operations, to represent the community background.



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### Sampling Methods

Three types of sampling methods will be used in the data collection program. The first type is deposition sampling. Soot and fuel droplets, or any other materials with a finite settling velocity will be collected on an inert glass medium. This deposition sampling method will be used at all three sites described above.

The second type of sampling is swab sampling. Swab sampling will be used to collect deposits from the engine exhaust nozzle of a jet aircraft currently in service at the Airport as part of the source characterization effort. Swab sampling will also be used to collect exhaust deposits from a gasoline-powered motor vehicle and a diesel-powered vehicle on the Airport.

The third type of sampling is liquid fuel samples. Small vials of Jet A fuel, motor gasoline, and motor diesel fuel as dispensed at the Airport will be obtained.

### Sampling Durations

For the deposition sampling, sampling durations may vary from a few days to several weeks, depending on the meteorological conditions and aircraft activity. The swab sampling is used to collect previously deposited materials and is, therefore, instantaneous.

### Sampling Site Visits

There are four conditions during which trained site technicians will visit each of the deposition sampling sites:

- To assemble and deploy the equipment.
- Twice daily to perform routine site checks to verify sampler integrity and repair/replace malfunctioning equipment.
- In the event of rain, quick-response deployment of rain shields which can occur at any time, day or night. Since the study objective is to collect dry deposition, the samplers must be protected from rain.
- To disassemble samplers and retrieve sample plates.



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### Laboratory Analyses

One of the main questions that we hope to be able to answer with this study is: Are the soot and oily deposits reported to be occurring on residential properties near the Airport coming from the aircraft at the Airport; or are they from other sources such as residential, commercial, and industrial fuel uses; or heavy diesel buses and trucks on the local roads nearby? Toward this end, we expect to 'fingerprint' both the jet exhaust (with respect to its chemistry) and the fuel samples, and compare the community samples to the fingerprints or signatures of the various sources.

The analytical laboratory will conduct detailed gas chromatography/mass spectrometry (GC/MS) analyses. These analyses provide the basis for the chemical fingerprinting of the sources of the contamination. The collected deposition samples will be solvent extracted and then subjected to GC/MS analysis. The procedure will follow the ACF techniques, which will look at principal components of polycyclic aromatic hydrocarbons and key index ratios of those components that exhibit the characteristics of particular emission sources.

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### Reporting

The results of this sampling and analysis program will be documented in a draft technical report. The results will compare the samples underneath the flight tracks (for the approach and takeoff operations) with the community background sample (that is not expected to be unduly affected by aircraft operations), and with the reference 'source' samples from the laboratory's reference library. Differences will be explained. The data from the laboratory analyses will be included in the EIS as an appendix.



## Noise Study Design Site Selection Meeting – July 11, 2005

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### Introduction

This memorandum presents a proposed protocol for noise measurements in support of the Environmental Impact Statement (EIS) being prepared for the T.F. Green Airport (PVD) in Warwick, Rhode Island. Under the study, Harris Miller Miller & Hanson Inc. (HMMH) will conduct a noise measurement program to document noise levels in the community, noise levels from single aircraft events, and noise levels in areas that may be exposed to new roadways or facilities that are constructed as a result of the project. The primary objective of the monitoring program is to gather data to document existing noise levels in the vicinity of the Airport.

This memorandum discusses the role of noise measurements in the environmental process, provides an overview of the measurement program, identifies three potential areas for noise measurements, and identifies the next steps to be taken before heading into the field to conduct the measurements.

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### The role of noise measurements

Noise measurements are not required as part of an environmental study. Moreover, the Federal Aviation Administration (FAA) discourages the practice of using measurements to develop noise contours, or to “adjust” or “calibrate” the noise modeling process. However, measurements provide important input to an understanding of the noise environment, and supplement noise exposure modeling that is required by the FAA. The results of noise measurements provide an understanding of the existing noise environment at selected sites, and also provide a check of the reasonableness of the assumptions used in the modeling effort. Specifically, the noise measurements provide information on single event and cumulative noise exposure, and information on existing aircraft operations. For these reasons, a temporary monitoring program was included in the scope of this study.

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### Overview of the monitoring program

HMMH will undertake a noise monitoring program, conducting measurements at up to 12 sites over a one-week period. Four sites will be identified as primary sites; one off the end of each runway. Noise levels will be measured at all four sites for the duration of the measurement period (up to 7 days). Up to eight additional sites will be selected as secondary sites, based on noise-sensitive land uses and other criteria. Noise measurements will be made at each of these sites for a minimum of 24 hours. The monitors will operate on a continuous basis, with short breaks for battery changes, calibration, data download, and other basic maintenance. During the measurement program, HMMH staff will visit the monitor locations on a daily basis during normal daylight hours. While on-site, HMMH staff will observe and log aircraft and non-aircraft noise-producing events, weather conditions, aircraft operations, and other relevant information.

The noise data collected will include Day – Night Noise Level (DNL), maximum noise level (L<sub>max</sub>), hourly equivalent sound level (Leq), Sound Exposure Level (SEL), and Time Above (TA) 65. Noise data will be



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correlated with operational data from the airport's noise and operations monitoring system. Predicted noise levels (from the INM) for all flights during the monitoring period will be statistically compared to the measured levels at the measurement locations.

During the week-long measurement program, HMMH staff also will collect short-term (less than one hour duration) noise measurements at noise-sensitive locations that could potentially be affected by proposed changes to roadway configurations that would be part of the project. HMMH will follow standard highway noise measurement protocol, including 1-minute Leq measurements, traffic counts, and roadway geometry review.

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### Proposed locations for Noise monitoring

HMMH considered several factors in identifying the proposed general locations for noise monitoring. First, we reviewed available noise exposure contours from previous studies to decide whether aircraft operations would be likely to produce intrusive noise at the site. Then, we considered the relationship of the site to overall distribution of aircraft operations by radar flight tracks collected by the Airport's Noise and Operations Monitoring System (NOMS). We also considered whether the proposed locations were representative of noise-sensitive land use in the study area. Finally, we reviewed complaint histories from the Airport's Noise Office. After considering these factors, we have identified the general areas outlined on the maps.

Please note that these proposed locations are intended to be general in nature. That is, we expect that the final location of the noise monitor would be within a several block radius of the point shown on each inset, that is the final location of the site would be within the shaded areas on the insets. Unless specific information is provided to us by the community and agreed to by FAA, HMMH intends to select the final location of each site while in the field during the measurement program.

Note that even if a specific address is provided to us by the community or by FAA, we may find it necessary to relocate a monitor while in the field as a result of access and/or security issues. Similarly, we may find it necessary to relocate a monitor due to an undesirable relationship between aircraft and non-aircraft noise levels at a site, e.g., we would not locate the monitor next to a busy highway or next to a fire station. Furthermore, we may determine that there are other physical features of the site that could potentially affect the quality of the measurements, in which case we would relocate the site.

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### Next steps

HMMH welcomes any community or agency input into locating specific sites within the shaded areas shown on the enclosed figure. Currently, HMMH is planning to conduct the noise measurement program over the summer season. HMMH will not undertake the measurement program without prior FAA approval.