RICONDO & ASSOCIATES

MEMORANDUM **VIA E-MAIL**

Date: March 13, 2009

To: Terry English
FAA

From: Stephen Smith

Subject: PROJECT CONSULTANT REVIEW OF INDEPENDENT CONSULTANT SUGGESTIONS RELATED TO CAC GOALS AND OBJECTIVES

This Memo is intended for discussion purposes only regarding the Independent Consultant's (IC) suggestions for CAC goals and objectives. FAA and PC recognize that the CAC may have goals independent of FAA standard policies for decision making related to noise abatement. Statements contained in this Memo should not be construed as FAA policy or procedures, specifically discussion related to single event metrics and related thresholds are that of the CAC's. As stated in FAA Order 1050.1E: Environmental Impacts Policies and Procedures, the Day Night Average Sound Level (DNL) is the primary metric for aircraft noise exposure, but may optionally be supplemented on a case-by-case basis to characterize specific noise effects.

The CAC submitted to the FAA a document prepared by the Independent Consultant (IC) for the Boston Logan Airport Noise Study (BLANS), entitled "Information Regarding Goal and Objective Statements," dated January 15, 2009. This document provides examples for the CAC to consider as they formulate specific CAC goals and objectives to be utilized for formulating and reviewing noise abatement measures during Phase 2 of the BLANS. The goals and objectives that CAC adopts will form the basis for evaluating alternative measures to determine whether they provide noise relief to the communities surrounding Boston Logan International Airport (BOS or Airport), without resulting in undue increases in other communities. The results of the evaluations will be used by CAC to identify and recommend specific noise abatement measures to Massport and the FAA for implementation. The goals and objectives must be clear in the terms and metrics used to define them in order to adequately evaluate whether a measure meets or does not meet a specific CAC goal or objective.

When determining goals and objectives for strategic planning purposes, it is important to understand the distinction between the two terms. Goals are broad; objectives are narrow. Goals are general intentions; objectives are precise. Goals can't be validated as is; objectives can be validated. A goal is designed to articulate what you wish to accomplish and help to map your direction. An objective is intended to provide specific measures used to determine whether or not one is successful in achieving the goal. Objectives should be measurable, specific and realistic when possible. Some view an objective as a "mini-goal" that are to be achieved on the path of reaching the overall goal. The main goal is a subjective statement that describes what one wants to achieve. Utilizing objectives

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helps determine what areas need to be accomplished in order to achieve a goal, and indicates progress towards meeting it.

Additionally, the FAA must use specific criteria to evaluate whether a measure being considered is safe and efficient, and would not "adversely" affect other communities, as specified in the 2002 Record of Decision for the Environmental Impact Statement evaluating the Airside Improvements Planning Project at Boston Logan International Airport. As a result, it would benefit the BLANS process if CAC acknowledges FAA policy and guidance in the development of its goals and objectives, because it will be applicable if an Environmental Assessment (EA) is required pursuant to the National Environmental Policy Act (NEPA) and FAA Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts* and the likelihood of implementing a proposed measure. Any noise abatement measure that CAC recommends for implementation at the conclusion of this phase of the BLANS will be subject to a NEPA review in accordance with FAA policy and guidance. At that time, a purpose and need statement will be developed by FAA for the proposed action(s) (i.e., the implementation of the measures selected by the CAC). The goals and objectives developed by the CAC will provide the foundation for this purpose and need statement as well as criteria for evaluating alternatives. For all of these reasons, it is important that the CAC define goals and objectives using clear and concise terms and quantifiable metrics that they feel need to be achieved by the proposed noise abatement measures. In addition, CAC should attempt to recognize the regulatory and policy requirements the FAA must adhere to as well.

A review of the IC document submitted by the CAC identified several statements that include ambiguous terms or do not recognize FAA policy; these statements and terms are identified and discussed below.

The sample Goal Statement states:

> *To reduce the impact of aircraft noise over communities in the BOS area through minimizing to the extent practicable the number of persons exposed to cumulative aircraft noise, reducing aircraft noise events experienced by the most number of people possible, and more equitably distributing the aircraft noise while minimizing the areas of increased noise or newly exposed areas.*

The Goal Statement, as written, provides a good overall, broad statement of what CAC may want to achieve. CAC should consider that the goal statement recognize FAA requirements outlined in the 2002 Record of Decision to implement measures that are safe and efficient (U.S. Congressional mandated mission of FAA) and do not result in a significant adverse impact on other communities. By doing so, the goal provides similar guidelines that the FAA will follow during NEPA and the implementation process. Phase 2 is applying the safety requirements as part of the technical analysis; therefore, it makes sense to include as part of the goal statement. In addition, FAA defines aircraft

noise of DNL 65 or higher to be incompatible with residential uses (or any other noise-sensitive use) and that a significant impact occurs when a change in aircraft noise value of DNL 1.5 occurs within an area exposed to DNL 65 or higher. In the FAA letter to CAC dated August 13, 2008, the FAA stated that the term "adversely" used in the 2002 ROD is synonymous with "significant", which is defined in FAA Order 1050.1E. Thus, the Goal Statement should recognize that the proposed noise abatement measures must not result in an increase in noise-sensitive areas or population exposed to aircraft noise of DNL 65 or higher and cause an increase in DNL value of 1.5 or more in noise sensitive areas exposed to aircraft noise of DNL 65 or higher when compared to a No Action alternative for the same timeframe.

An example of how this could be done follows:

> *To reduce the impact of aircraft noise over communities in the BOS area through* ***safe measures that minimize*** *to the extent practicable the number of persons exposed to cumulative aircraft noise,* ***reduce*** *aircraft noise events experienced by the most number of people possible, provide more equitably distribution of aircraft noise while minimizing the areas of increased noise or newly exposed areas* ***and without resulting in a significant increase in aircraft noise exposure in any noise-sensitive area as defined by FAA criteria while not effecting efficient movement of aircraft.***

Some of the philosophical statements that are listed following the sample Goal Statement could be used to establish concise and measureable goals. The second philosophical statement (if adopted by the CAC) underneath the Goal Statement should be clarified. The statement reads as follows:

Mitigation measures should be judged on the merits of the population effected by the measure, as well as the degree of noise change.

What is meant by "merits of the population"? What "merits" are CAC referring to? Perhaps the merits could be defined in terms of population density or population exposed to various levels of aircraft noise.

Using some of the language from the example philosophical statements, the following statements provide examples of how quantifiable objectives could be defined and described by CAC. (Note: These are not necessarily suggested objectives by PC or FAA, merely examples of clearly and concisely worded objectives based on previous discussions with CAC members. It is the role of the CAC to list its objectives that are designed to meet the overall goal.)

- Reduce the total population exposed to DNL 55 and higher (according to Potential Resolution 9).

- For households within defined areas experiencing aircraft noise events with an outdoor Lmax of 65 dB or more, provide a 10 percent or greater reduction in the number of those aircraft noise events of 65 dB or more.
- For households within defined areas experiencing aircraft noise events with an indoor Lmax of 55 dB or more during daytime hours, provide a 10 percent or greater reduction in the number of those aircraft noise events of 55 dB or more.

Again, these are not suggested objectives, but merely examples of quantifiable and measurable objectives that could be established by CAC, with the assistance of the IC. PC recommends that FAA provide assistance, if requested by CAC, to provide more specific wording where warranted, but be careful not to impress upon CAC that FAA assistance is an indication of supporting or rejecting specifics.

Likewise some terms contained within the Potential Resolutions should be clarified or defined to be converted to measurable objectives. If possible, objectives can be worded in a manner that would not require detailed noise analysis to determine if it has or has not been met. PC believes that there are opportunities to seek ways (if possible) to evaluate measures that meet CAC goals that don't require detailed expensive noise analysis (e.g. altitudes, numbers of flights). Examples of how these could be re-worded to be more effective objectives (in lieu of resolutions) are provided.

1. Potential Resolution 1 – Is CAC interested in maintaining Phase 1 alternatives? There was a great amount funds expended by FAA and Massport, and effort conducted by CAC to assess the Phase 1 measures. Perhaps implemented Phase 1 alternatives should be maintained unless a noticeable change in the noise environment can be achieved by changing the Phase 1 alternatives to accommodate a Phase 2 measure. Perhaps CAC can define a qualitative measure to determine if changing a Phase 1 measure would provide a substantial benefit to the same communities that are currently benefiting from Phase 1 alternatives.

   Example of how this could be stated: Maintain Phase 1 alternative unless overflight frequencies are reduced by as much as 50 percent over areas that were found to experience reductions in noise with Phase 1 alternatives implemented.

2. Potential Resolution 2 – Based on the Phase 2 SOW, Massport and CAC need to determine if a preferential runway advisory program is still applicable for BOS, and if so what the objectives of such a program is designed to achieve. FAA should recommend that Massport and CAC reach this understanding before applying an objective related to runway advisories.

3. Potential Resolution 3 – What objective measure would be used to determine whether a decrease in exposure to taxiway noise events is beneficial? Does it require noise analysis? For some

objectives, noise metrics may not be necessary to determine if the frequency of noise events are reduced.

Example of how this could be stated: Define a ground operations concept that would reduce, to the extent practicable, the frequency of aircraft queuing at the end of a departure runway and allow for more continuous movement and "rolling" takeoffs (taxiing to, and turning onto the end of the takeoff runway, and commencing the takeoff roll, all in one continuous movement, without stopping).

4. Potential Resolution 4 – This resolution should be clarified. Does the reference to 55 DNL refer to the DNL 55 average annual contour?

5. Potential Resolution 5 – This objective should recognize some of the limitations associated with FAA operating procedures and safety requirements. Holding a departure on a fixed heading until reaching 5,000 feet may hinder safe separation or create safety risks associated with safe separation. In lieu of specifying an altitude, the FAA may propose an adjustment that meets what PC believes is the intent of this measure; to ensure that a substantial number of overflights do not move to a community that is not already exposed to equal number and type of flights.

   Example of how this could be stated: Avoid substantial increases in BOS departure and/or arrival overflights below ,5000 feet AGL over populated areas that are not routinely exposed to an equal number and type of flights..

   Another example is to apply similar lateral minimum requirements (horizontal distance from existing procedure) associated with FAA' Air Traffic Noise Screening tool. The lateral minimum requirements were used to screen flight procedural changes for slight to moderate changes in noise on the ground to communities that were not currently exposed to aircraft noise on a routine basis. If a procedure was within the lateral minimum requirements, the adjusted procedure was deemed not to cause slight to moderate changes in aircraft noise levels.

   Example of how this could be stated: Avoid changes to arrival and/or departure flight routess from BOS runways that move more than one (1) nautical mile on either side of the route between 3,000 and 5,000 feet. (note: IC may be able to propose a smaller lateral minimum for routes below 3,000 feet)

6. Potential Resolution 6 – This resolution seems to be stated "backward" in terms of placing nighttime traffic over water by minimizing interior noise events above 45 dB Lmax.

   Example of how this could be stated: Minimize the interior nighttime noise events above 45 dB of Lmax by defining routes that place nighttime traffic over water to the extent practical. The

exterior levels equate to approximately 65 Lmax, based on exterior to interior noise attenuation of 20 dB.

7. Potential Resolutions 7 and 8 – Both of these read as criteria for evaluating alternative measures rather than as resolutions. If they are kept as goals, several terms should be clarified. What is meant by "Conversely, the measure may be used to assess the cost and benefit between two alternative measures that affect different areas."? What is meant by "densely residential use?"

   Example of how this could be stated: The number of events that exceed the interior Lmax level of 55 decibels should not be introduced into new areas within populated suburbs and urban areas. Measures with greater noise abatement benefit, as defined by a 10 percent or more decrease in number of events above XX noise value, would be preferred over measures with less noise abatement benefit.

8. Potential Resolution 9 – This resolution reads as a goal rather than a resolution or objective. If this goal is adopted by CAC, then it should recognize that the measure can not increase the noise sensitive areas or population exposed to aircraft noise levels of DNL 65 or higher and can not cause a DNL 1.5 or higher increase in aircraft noise to noise sensitive areas at or above DNL 65 when compared to a no action alternative for the same timeframe.

   Example of how this could be stated: Assure that the population exposed to aircraft noise of DNL 55 or higher is reduced by the greatest extent practicable, and increases by more than DNL 3 over any population should be avoided to the extent practicable by implementation of any alternative measure and does not result in a significant increase in aircraft noise exposure in any noise-sensitive area as defined by FAA criteria.

9. Potential Resolution 10 – FAA can not force helicopter operators to follow preferred routes. Violations of minimum altitude requirements are a safety issue and not a noise abatement measure and should be reported to FAA for investigation. This resolution would be inconsistent with the purpose of the BLANS project.

cc: 06-06-0376-6.1
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