



MEMORANDUM

VIA E-MAIL

Date: April 24, 2009  
To: Terry English, FAA (BLANS Project Manager)  
From: Stephen Smith, PC  
Subject: 2007 Existing Conditions Update Effort and Cost Estimate

## Background

This memorandum is being submitted in response to a mini-summit action item regarding CAC's request to update the 2005 existing conditions aircraft noise analysis to 2007. CAC stated a need for an update in order to make a better judgment related to the existing noise environment and population exposure. CAC believes an update is critical to reach an agreement among members on the goals and associated objectives for this study. In addition, they mentioned that the update will assist them in possibly refining proposed measures. Massport and FAA agreed to consider modifying the scope of work to include the update pending a cost estimate and further discussions about the desired output and specific uses of that output.

## Methodology Overview

The update effort will be conducted by the Project Consultant (PC). Some of the efforts are accounted for in the future year No Action noise modeling task (Task 6.4.3.1.1, Noise Model Input Development-2010 No Action Alternative). Tasks included in the No Action analysis are clearly identified in **Table 1**. Tasks not included in the No Action analysis are considered "add-on" tasks not originally scoped. Funding within the existing budget has been identified in order to proceed as soon as possible. The funds for the "add on" efforts will be drawn from those made available by removing PC assistance in RNAV procedure development. The FAA will now provide the expertise to assist in the design of potential RNAV-based concepts.

The primary source that PC will use to update the 2005 existing condition to 2007 is the 2005 Integrated Noise Model (INM) input developed under Task 5.3 (Existing Conditions Noise). In accordance with the methodology proposed by the Independent Consultant (IC), PC will develop INM tracks and customized profiles for Runway 14 departures and Runway 32 arrivals based on 2007 radar data samples provided by Massport. This will be done in accordance with the Noise Modeling Protocol dated December 10, 2007. PC will also update the runway operating configuration use to account for the change in said use since Runway 14/32 was opened. PC will also adjust the definition of runway configurations for those that include the use of Runway 14/32. Next, PC will utilize the full year of 2007 operations flight data to update operation levels and fleet mix.



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After the inputs are adjusted to reflect 2007 conditions, PC will run INM to calculate DNL and supplemental metrics identified in the Noise Modeling Protocol (Number Above “buckets” between 50 and 85Lmax in 5 dBA increments and Time-Above in minutes between 50 and 65+ in 5dBA ranges). For purposes of budgeting, PC also assumes the output will be noise metrics calculated for up to 130 grid points or points of interest determined by CAC.

The noise technical analysis cost to develop the INM input and calculate metrics for points of interest is \$59,210. Fifty-six (56) percent of the cost (\$32,912) will be funded from the No Action analysis tasks. The remaining 44 percent (\$26,298) is considered “add-on” effort, and will be funded from budget assigned to Task 6.3.1 (Level 2 Screening Analysis-Refine Measures). Additional costs will depend upon CAC’s desired output if it is above and beyond metric results for points of interests not to exceed 130 points. This effort does not assume the need to develop maps, a report or detailed grid analysis, and the IC will finalize a location of interest matrix associated with population in a similar manner done for Phase 1.

**Table 1** provides the cost estimates for each task, and two columns that identify which efforts coincide with the No Action analysis and those that are considered scope “add-on” efforts.

Another cost element not specified in Table 1 is task oversight by the PC project manager. This effort is considered an “add-on” to the scope, and is estimated to be \$6,200. The total cost would \$65,410 to complete this effort. The total expected duration would be three (3) months as compared to five (5) months to complete the future year No Action.

*PC requests that CAC decide on the most cost effective output that provides the primary information sought to assist in the design purpose of updating the existing conditions aircraft noise environment. Additional funds will not be made available for Phase 2, and relocation of funds from other tasks must be limited based on project priorities shared by CAC, FAA and Massport. PMT needs to consider if the 2007 update is critical to this project with the understanding that the No Action would provide and update related to future conditions and would only take two additional months to complete compared to the 2007 update.*



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**Table 1**

2007 Existing Conditions Update – PC Technical Effort Estimate by Task

Task	Description	No Action Budget	Add-On	Total
Task 1	Process Runway 14/32 Radar Data (2 Month Sample)	\$ 3,880.00		\$ 3,880.00
Task 2	Runways 14/32 Radar Bundle Analysis	\$ 2,328.00		\$ 2,328.00
Task 3	Runways 14/32 INM Flight Track Development	\$ 6,852.00		\$ 6,852.00
Task 4	Runways 14/32 Flight Profiles Development	\$ 6,852.00		\$ 6,852.00
Task 5	Runway Operating Configuration Use Update Analysis		\$ 2,584.00	\$ 2,584.00
Task 6	Update Definition of Config 1, 2, and 5 with Runways 14/32		\$ 4,330.00	\$ 4,330.00
Task 7	Update Operation Levels/Fleet Mix (2007 EDR data)		\$ 2,584.00	\$ 2,584.00
Task 8	Update Taxiway Movement Levels based on 2007 Operations		\$ 1,808.00	\$ 1,808.00
Task 9	IC Review Coordination	\$ 1,032.00		\$ 1,032.00
Task 10	Finalize INM Input Files and Q&A		\$ 4,912.00	\$ 4,912.00
Task 11	Dicerno Input Files Development and Q&A	\$ 8,352.00		\$ 8,352.00
Task 12	Update Dicerno Grids for Runway 14/32	\$ 3,616.00		\$ 3,616.00
Task 13	Generate Grids for 2007 taxi ops		\$ 1,808.00	\$ 1,808.00
Task 14	Runway configuration use scaling-Dicerno (based on 2006/2007 use)		\$ 3,360.00	\$ 3,360.00
Task 15	Run INM - generate grid results		\$ 4,912.00	\$ 4,912.00
<b>Total</b>		<b>\$ 32,912.00</b>	<b>\$ 26,298.00</b>	<b>\$ 59,210.00</b>
<b>Percentage of Effort</b>		<b>56%</b>	<b>44%</b>	

Source: Wyle Laboratories, April 2009.  
 Prepared by: Ricondo & Associates, April 2009.

Total “No Action” Cost: \$32,912  
 Total “Add On” Cost: \$32,498  
**Total Task Cost: \$65,410**

cc: 06-06-0376-6.2  
 Alan Reed, FAA  
 Gail Lattrell, FAA  
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