



9 ANALYSIS OF PROGRAM MANAGEMENT MEASURES

As discussed in Section 6, in its ROA for the 1998 Noise Compatibility Program, the FAA fully or partially approved seven program management measures (PM-1 through PM-7), as follow.

Table 41 FAA Approval of Previously Recommended Program Management Measures

Source: FAA, 1997

#	Measure	FAA ROA Status
PM-1	Update noise complaint receipt and response procedures.	Approved.
PM-2	Establish noise-monitoring system.	Approved.
PM-3	Public information program / pilot handouts.	Approved.
PM-4	Designate a noise abatement contact.	Approved.
PM-5	ATIS / ATCT advisories.	Approved in part, disapproved in part. FAA permits use of the ATIS for short messages such as "noise abatement procedures in effect" when time and space permit; use on a voluntary, space available basis is supported.
PM-6	Purchase and install airside signs to advertise NCP measures.	Approved.
PM-7	NEM/NCP review and revisions.	Approved.

The following subsections discuss these seven measures in order, including their implementation status and Advisory Committee feedback, to determine whether they merit continued pursuit, and if so, whether any revisions might enhance their effectiveness.

9.1 PM-1: Update Noise Complaint Receipt and Response Procedures

The ROA approved updating complaint receipt and response procedures using paper forms. The Authority has taken advantage of technology not anticipated in the late 1990s to implement a process whereby complaints and inquiries are received via the CAK website and forwarded to the CAK President and CEO, who either responds personally or delegates the responsibility to another staff member. This process provides a much higher level of service than that proposed in the last study.

As summarized in the notes for the sixth Advisory Committee meeting (see Appendix K.6) the FAA Air ATCT Manager requested that CAK staff record the time and location of complaints in order to best identify the flight event. CAK staff already undertake this step and will continue to do so.

The Advisory Committee reached consensus that this measure merited continued pursuit as currently implemented.

9.2 PM-2: Establish Noise Monitoring System

The ROA approved acquisition of a portable noise monitor. The FAA's Airport Improvement Program (AIP) Handbook, Order 5100.38C⁶¹ sets forth conditions under which airports may use federal funding. With regard to noise monitoring, paragraph 813(c) states that "fixed noise monitoring equipment is ineligible where the Part 150 noise exposure maps (existing and forecast) show no noncompatible land uses," which is the case at CAK. Paragraph 813(d) notes that portable monitors are eligible under certain conditions, as follow:

⁶¹ See http://www.faa.gov/airports/aip/aip_handbook/



A noise-monitoring proposal should not be an end in itself, nor an instrument for enforcement of a noise rule or procedure. Rather, noise monitors should provide an ongoing stream of useful products and data in support of the overall noise compatibility program. A primary justification should be to provide information necessary to carry out other noise compatibility projects in the approved NCP, or to monitor progress in achieving noise compatibility objectives. Some sample uses of noise monitoring data include:

- (1) Selection of dwelling units or other structures for noise insulation;
- (2) Pre- and post-insulation interior/exterior noise measurement;
- (3) Compliance with a monitoring requirement of State noise law;
- (4) Aiding implementation of other noise compatibility projects; or
- (5) Providing noise data for future revision of the NCP.

The key condition is: “A primary justification should be to provide information necessary to carry out other noise compatibility projects in the approved NCP, or to monitor progress in achieving noise compatibility objectives.” Noise monitoring at CAK would not meet either of these criteria, since no projects require monitoring for implementation and the absence of noncompatible land within 65 dB DNL means CAK has met its noise compatibility objectives. Portable measurements conducted for this study confirm this situation, as summarized in Section 3.

The Advisory Committee reached consensus that the Authority should drop this measure from the Noise Compatibility Program.

9.3 PM-3: Public Information and Pilot Outreach

The ROA approved continuing public information on aircraft noise, impacts, and compatible land use. Today, airport websites are the most common mechanism for public information and pilot outreach. The Part 150 section of the CAK website is an excellent example of this trend. It would be most effective for CAK to transition that section of the website over to a continuing resource. The material on the website already addresses “information on aircraft noise, impacts, and compatible land use.” The website will include complete study documentation. When the FAA provides its ROA, the airport can update the website to reflect the final approved program.

The pilot outreach material could be prepared in a manner that permits it to be distributed (in either electronic or printed format) to pilots, airlines, airport tenants, etc. Many examples of such materials are available on the internet. The airport also might consider taking advantage of the free “whispertrack” web resource that many airports find to be effective for pilot outreach.⁶² That site includes many examples of pilot handouts of the type that CAK might develop once the FAA has identified the approved measures in the ROA. Pilot representatives at Advisory Committee meetings emphasized that the CAK website should continue to be the primary source for such material.

As noted in Section 8.3.4, in the course of meeting with local jurisdictions CAK staff determined it would be valuable to meet with jurisdiction representatives on a regular basis to ensure two-way communications regarding airport operations, on-and off-airport development proposals, and other matters that might affect land use compatibility. The jurisdiction representatives supported this idea.

CAK staff also anticipate they will provide regular updates on noise and compatible land use issues at Authority meetings and to external organizations as requested.

The Advisory Committee reached consensus that this measure merited continued pursuit with enhancements as noted above

⁶² See <https://whispertrack.com/>

9.4 PM-4: Noise Abatement Contact

The ROA approved identification of a noise abatement contact at CAK. This is another area where technological advances permit the CAK website to fulfill this role. In practice, this measure is integrated with PM-1, “Update Noise Complaint Receipt and Response Procedures.”

The Advisory Committee reached consensus that this measure merited continued pursuit, with clarification to reflect its relationship to PM-1.

9.5 PM-5: Air Terminal Information Service (ATIS) Advisory

The ROA approved inclusion of a short message, such as “noise abatement measures in effect,” in the ATIS recording.

The Advisory Committee reached consensus that this measure merits continued pursuit as permitted by the FAA.

9.6 PM-6: Airside Informational Signs

The ROA approved working with local air traffic personnel to establish mutually acceptable signage, including location(s) and content.

To avoid distractions on the airfield, in most situations, the FAA generally approves only simple signage, such as the example shown below from Seattle Washington:

Figure 64 Noise Abatement Sign Example from Seattle-Tacoma International Airport
Source: www.portseattle.org (last visited August 6, 2014)



As summarized in the notes for the sixth Advisory Committee meeting (see Appendix K.6) the FAA ATCT Manager stated he would not support any airside signage that included any specific noise abatement instructions (such as maintain runway heading, turn to heading X, or use runway X when feasible). He expressed concern that signs might lead to pilot confusion if they contradicted Tower staff instructions. A chief pilot for a major based corporate operator concurred.

Based on this feedback, the Advisory Committee reached consensus that this measure does not merit continued pursuit.



9.7 Noise Exposure Map and Noise Compatibility Program Review and Revision

The ROA approved a measure to undertake Noise Exposure Map updates “every five years or as required by changed conditions.” Given the absence of noncompatible land uses within the 2014 and 2019 Noise Exposure Maps, a commitment to conduct updates every five years is unjustified.

To justify a Noise Exposure Map update, the contours would first have to grow sufficiently to extend the 65 dB DNL over a sensitive land use (e.g., residential). The contours prepared for this study indicate that overall DNL exposure would have to increase by at least three decibels to approach this condition. All else remaining equal, a three-decibel increase requires a doubling in operations, in particular jet operations, which this study clearly revealed dominate overall DNL. Therefore, one approach to triggering a Noise Exposure Map update would be tracking jet operations to identify when they have doubled compared to 2019 levels.

A second approach is to monitor operations to identify changes that might trigger FAA’s Part 150 requirement that “[r]evision should occur when it is likely a change has taken place at the airport that will cause a significant increase or decrease in the DNL noise contour of 1.5 dB or greater over noncompatible land uses. See §150.21(d).”⁶³ This approach is more refined than monitoring for a doubling in jet operations, because it considers the relative noisiness of each specific aircraft type operating at the airport.

Based on this background, and discussion with the Advisory Committee, the Authority will undertake a two-part annual screening to determine whether there is a potential need for preparing revised Noise Exposure Maps, with a third step undertaken if either of the first two screenings suggest further analysis is necessary.

9.7.1 **Step 1: Conduct a Screening for a Potential 3 dB Change in DNL**

As the most simplistic test for a potential 3 dB DNL change, which current contours suggest would be necessary to extend the 65 dB DNL over residential areas, the Authority staff will compare the estimated number of annual jet operations in the preceding calendar year to those for 2014 and 2019 operations. If they have doubled, it is a potential indicator of the need for preparing revised Noise Exposure Maps, as discussed in Section 9.7.3.

9.7.2 **Step 2: Conduct a Screening for a Potential 1.5 dB Change in DNL**

To test for a potential 1.5 dB DNL change, as referenced in §150.21(d), the Authority will use a screening tool that the FAA supports for estimating the effect of changes in operations. This tool is called the “Area Equivalent Method” (AEM). The “AEM is a mathematical procedure that provides an estimated change in noise contour area for an airport given the types of aircraft and the number of operations for each aircraft.”⁶⁴ The AEM User Guide states that a “17 percent increase [in area] indicates that the proposed action could result in a DNL 1.5 dBA or greater increase at a noise sensitive area and that further analysis is required.”⁶⁵

⁶³ As presented in Table 2 – Part 150 Noise Compatibility Program Map Checklist, “Part 150 Noise Compatibility Program Map Checklist” Part 1,1, Section VI. “Program Revision”.

⁶⁴ FAA Office of Environment and Energy, “AEM Version 7.0c User’s Guide,” October 2012, page 2. See: https://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/aem_model/media/AEM_70c_UsersGuide.pdf, last referenced October 11, 2014.

⁶⁵ Ibid. page 3.



The consulting team has populated a copy of the AEM with data for 2014 existing and 2019 forecast operations at CAK, and provided it to Authority staff in electronic format for annual application. Appendix I presents a printed version for illustration purposes. At the start of each calendar year, the Authority staff will fill in estimates of updated operations data for the year just ended and compare the AEM results to those for 2014 and 2019. If the AEM predicts a 17% increase in area, it would be a second indicator of the potential need for a Noise Exposure Map update.

9.7.3 **Consult with FAA to and Potentially Conduct a More Refined Screening**

If either of the preceding steps suggests there is a potential need for preparing revised Noise Exposure Maps, the Authority should consult with the FAA's Detroit ADO staff to obtain their input. Before proceeding with the expense of a full Noise Exposure Map update, the Authority and FAA might consider undertaking a more refined screening, by having a consultant use the INM to prepare draft noise contours that take into account changes in airport operations, including the level and mix of activity, and also estimated runway and flight track use. This analysis could be undertaken in a less rigorous manner and at a fraction of the expense of the effort required to meet full Part 150 Noise Exposure Map standards.

To facilitate this exercise, the consulting team conducting this study will provide the Authority with an electronic copy of the INM files used in preparing all of the noise contour sets, including the updated Noise Exposure Maps for 2014 and 2019. The Authority could retain a consultant to adjust those inputs to reflect the most significant changes in operations, to obtain what might be considered "sketch" contours. By taking into account runway and flight track usage, these rough contours would provide a more refined basis than either of the two screening techniques for identifying potential changes in exposure over sensitive land areas, by virtue of assessing the geographic shape of the contours, rather than simply the overall size.

9.7.4 **Prepare Updated Noise Exposure Maps**

If the prior three steps result in a conclusion consistent with §150.21(d) that "a change has taken place at the airport that will cause a significant increase or decrease in the DNL noise contour of 1.5 dB or greater over noncompatible land uses," then the Authority will undertake a full Noise Exposure Map update. Since there is no noncompatible land use within the 65 dB DNL contour in the 2014 or 2019 Noise Exposure Maps, there is no reason to test whether that contour has decreased by 1.5 dB over a noncompatible land use. *The actual test is whether noise has increased enough to extend the 65 dB DNL contour over a noncompatible land use.* As mentioned previously, for the 65 dB DNL contour to extend over a noncompatible land use, the noise exposure would have to increase by approximately three decibels, so the increase would exceed the 1.5 dB threshold.

The Noise Exposure Map Update will include a review of the implementation and effectiveness of the Noise Compatibility Program, to use in identifying where the Authority should focus its efforts in the Noise Compatibility Revision to undertake actions to address the newly introduced noncompatible land uses and prevent any future increase.

The Authority anticipates pursuing an FAA grant to support this effort, when and if it is necessary.

9.7.5 **Prepare Revised Noise Compatibility Program**

Based on the results of the Noise Exposure Map update and review of the existing Noise Compatibility Program, the Authority will consult with the FAA to develop an appropriately focused scope for a Noise Compatibility Program update, and then pursue that scope.

The Authority anticipates pursuing an FAA grant to support this effort, when and if it is necessary.



9.8 Summary of Program Management Recommendations

Based on the preceding analyses and consultation, the President and CEO of the Airport Authority presented recommendations for the revised Noise Compatibility Program in a letter to the Advisory Committee in advance of its sixth meeting. Appendix I presents a full copy of the letter.

In the letter, he notified the Advisory Committee of his intention to recommend that the Authority request FAA approval to continue six of the seven existing program management measures, and forego one existing measure that the analysis revealed is now unnecessary. Specifically, he recommended that the Authority continue the following FAA-approved measures:

- Noise complaint receipt and response (PM-1)
- Public information and pilot outreach (PM-3)
- Noise abatement contact (PM-4)
- Air terminal information service (ATIS) advisory (PM-5)
- Airside informational signs (PM-6)
- Noise Exposure Map and Noise Compatibility Program review and revision (PM-7)

He recommended that the Authority not pursue an ongoing noise-monitoring program (PM-2) since the Noise Compatibility Program does not include any measures that require monitoring for implementation.

The Advisory Committee reached consensus at the sixth meeting to support these recommendations, with one exception. Specifically, as discussed in Section 9.6, the committee reached consensus that the airside informational signs (PM-6) did not merit continued pursuit. Therefore, this measure was dropped from the list of recommendations.

The Authority staff and consultants presented these recommendations to other stakeholders through the third public workshop, final public hearing, and posting on the study website. No comments were received that were contrary to the final Advisory Committee consensus.

Section 10 summarizes the recommendations for the overall revised Noise Compatibility Program, with revisions based on the analyses of existing measures and of proposed alternatives in the noise abatement, compatible land use, and program management categories.