5.0

Program Management Measures
5. Program Management Measures

5.1 Introduction

Program Management Measures relate to the oversight and management of the Airport’s noise program. In particular, program management involves the detailed procedural and document management associated with the implementation of noise and land use measures, thus making program management responsible for monitoring and updating all aspects of the Noise Compatibility Program.

5.2 Program Management Alternatives

A full range of program management alternatives was examined based on the requirements of the Federal Aviation Regulation (FAR) Part 150, as well as input from the Study Advisory Committee and the general public. These alternatives are summarized in Table 5-1.

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The results of the alternatives analysis yielded eight alternatives which were recommended for inclusion in the Program Update as Measures. This section presents details on those eight recommended program management measures.
Recommended Program Management Measure PM-1 (Alternative PM-A)
Establish a Noise Abatement Advisory Committee

Description

A permanent Noise Abatement Advisory Committee, as a recommended measure of an NCP, is typically an outgrowth and extension of an advisory group convened for an airport study, such as a Master Plan, NEPA analysis, or Part 150. Typically, a Noise Abatement Advisory Committee consists of members of airport management and/or the noise office, representatives from airlines, airport tenants, and Air Traffic Control staff, as well as members of citizen groups, airport interest groups, and local jurisdictions (both elected representatives as well as professional staff, such as a community or land use planner). During the study, the role of the advisory committee is to provide a balanced set of stakeholder interests and opinions when considering planning issues at an airport and to act as a sounding board for various proposals under consideration. The advisory committee is also responsible for representing and communicating study findings and public meeting awareness with their constituents.

At the onset of this study, PHL convened a Study Advisory Committee (SAC) that has met regularly at intervals throughout the study period. The SAC was convened to kick-off the study, to review the results of the temporary noise measurement program, to review the results of the noise contour modeling, and to provide feedback on the potential range of alternatives to be evaluated in detail as part of the NCP. An additional role of the SAC is to assist PHL in the dissemination of information about the study, including its initial findings, notification of public workshops, and the study’s recommendations. At the conclusion of the study, the SAC would normally be disbanded.

Rather than disbanding the SAC, PHL wishes to evaluate the feasibility and interest in creating and facilitating an ongoing Noise Abatement Advisory Committee specifically to assist with communication and coordination of noise issues. With the implementation of this measure, the SAC could be reestablished as the PHL Noise Abatement Advisory Committee, which would meet at regular intervals (such as quarterly). Specific agenda items would include:

- PHL level of operations;
- Anticipated runway closures or changes in operating conditions;
- Implementation of the Airspace Redesign;
- Status of ongoing and planned airport development projects;
- Adherence to and compliance with established flight procedures;
- Noise monitoring reports;
- Implementation of the Airport’s recommended and FAA-approved Noise Compatibility Plan;
- Status of mitigation efforts as part of the overall Noise Management Strategy (including those alternatives which were not included in the Part 150); and
- Dissemination of this information to the general public.

Relationship to PHL Noise Environment

Measure PM-1 in the 2003 Part 150 Study called for the establishment of a Noise Abatement Advisory Committee, comprised initially of members of that study’s study advisory group. The intent of that measure was to convene a group of members of the airport community and public to address noise abatement and mitigation issues at PHL; however, following the conclusion of the Part 150 study, the group did not reconvene.
Street View

Philadelphia International Airport
Noise Compatibility Program Update

**Noise Benefits**

There would be no direct benefits to the noise environment, or reduction to the number of persons within the DNL 65 dB noise exposure contour with the creation of an advisory committee. Rather, the Noise Abatement Advisory Committee would assist in the facilitation of information regarding the NCP and additional airport initiatives to elected officials, airport tenants, and members of the public who are interested or may be eligible for mitigation programs. The committee would be charged with assisting in the distribution of information regarding the NCP.

**Other Benefits**

The ability to provide an ongoing dialog with the various stakeholders around the airport can be advantageous in a number of ways. An advisory committee can assist the airport in identifying sensitive issues around the community, monitor various development proposals which may conflict with airport operations, and establish open lines of communication between the airport and various stakeholders.

**Drawbacks**

There are no major disadvantages with the implementation of this alternative. The establishment of a Noise Abatement Advisory Committee is contingent upon the participation of interested parties from the community, local jurisdictions, and airport tenants, as well as support by the City of Philadelphia Division of Aviation.

**Implementation Details**

**Responsible Implementing Party:** The City of Philadelphia, as the airport sponsor, is responsible for scheduling and hosting meetings of the Noise Abatement Advisory Committee.

**Schedule of Implementation:** This measure, already approved under the 2003 Part 150, could begin at any time, and does not require Part 150 approval by the FAA to be implemented.

**Costs associated with Implementation/Funding:** Funding for this type of program is not anticipated to be reimbursable by the FAA. There are minimal costs associated with this measure, including staff time dedicated to facilitating the advisory committee meetings, preparing meeting materials, and community outreach, which would be the responsibility of PHL.

**Relationship to Other Recommended Measures**

A Noise Abatement Advisory Committee would support PHL’s ongoing efforts to minimize noise exposure and ensure improved community relations and compatible land use planning. Specifically, all elements of the recommended NCP would be discussed on a continuous basis as each is implemented.

**Preliminary Recommendations**

**PM-1:** Establish a Noise Abatement Advisory Committee to meet periodically to discuss airport operations, noise mitigation efforts, and community concerns.
Recommended Program Management Measure PM-2 (Alternative PM-B-2)
Enhance the Airport’s existing Noise Monitoring and Flight Tracking System by Acquiring a Multilateration System

Description

A typical Airport Noise Operations Monitoring System (ANOMS) allows an airport to review flight tracks, capture noise data and generate reports of specific flight events, observe noise measurements and/or periodic summaries of flight activity. These systems acquire aircraft tracking data either from a feed of air traffic control radar or from specialized tracking equipment that is a part of the system. This specialized tracking equipment independently acquires transponder data from aircraft and would consist of the installation of a passive radar or multilateration system. This data is processed by computer and allows the end user to see the flight tracks flown over geographic surfaces. A real-time flight tracking system requires use of passively acquired radar data or a multilateration system to gather data independently from the FAA for security purposes. In order to facilitate more accurate and quicker response to noise complaints and public inquiries, Measure PM-2 evaluates the possibility of installing a multilateration system as a component of the airport’s existing ANOMS system to improve the accuracy, reliability, and speed of data acquisition.

PHL currently operates a noise management system known as Airscene, which is an enhanced version of an older system called Total Airport Monitoring and Information System (TAMIS). This system connects directly to the FAA radar at PHL, and stores the data in external database. The data collected by the system includes the type of operation (arrival or departure), the date and time of the operation, the aircraft type, airline, and flight number of the operation, and the runway used by the operation. It also captures the altitude and position of the aircraft along its route in flight. This information is then correlated with data from the permanent noise monitoring terminals surrounding PHL to respond to noise complaints. This data is also used for verifying compliance with voluntary noise abatement measures and collecting historical operational data, such as runway use and aircraft traffic counts. It cannot be used for determining landing fees or assessing other airport-related charges.

PHL and the FAA entered into a Memorandum of Agreement (MOA), which states that PHL would receive access to radar tracks following a seventy-two (72) hour delay. For security reasons, it is common throughout the industry to delay the receipt of data when read directly from the FAA radar system, as radar data often includes military flights and other secure information that is generally not released to the public.

A multilateration system consists of a series of receivers located around an airport that triangulate an aircraft’s time and position based on the aircraft’s transponder signal. The installation of a multilateration system would allow real-time aircraft location (flight track) information independent of the FAA radar feed. In the future, this multilateration information could be potentially combined with an ASDE-X monitoring system to provide seamless environmental analysis for aircraft both in the air and on the ground.

It is recommended that the existing MOA with the FAA be maintained as a backup data feed for the Airscene system and that the Airport request that the data delay be reduced to twenty-four (24) hours, as this has been done at other major airports.

Relationship to PHL Noise Environment

The 2003 Part 150 program evaluated updating the airport’s existing system with Measure PM-2 (Enhance the Airport’s Noise Monitoring System). PM-2 included upgrades that would increase processor speed, increase data storage capabilities, and enhance noise monitoring and mapping software. A major software and hardware upgrade in January 2009 met these objectives. PM-3
evaluated additional noise monitoring locations and is discussed in Measure PM-3.

### Noise Benefits

As a program management measure, this measure would not reduce noise levels generated by aircraft operating at PHL or the number of persons within the DNL 65 dB noise exposure contour, but it would allow for the better quantification and analysis of aircraft noise events by allowing quick access to radar data and therefore a timely response to citizen and public official inquiries. It is important to note that an enhanced ANOMS system cannot be used for determining fines or other penalties related to use of voluntary noise abatement procedures, but can be used for encouraging compliance and educating aircraft operators and air traffic controllers when deviations occur.

### Other Benefits

An enhanced system would allow PHL to better address complaint investigation and responses, supply data for periodic noise reports and noise contour modeling analysis, to evaluate historical noise trends in the community, to evaluate Noise Abatement Procedure compliance investigations, and collect and archive measured data. A multilateration system also would allow the Noise Office to observe current aircraft activity in real time, so that some complaints or questions could be addressed quickly.

### Drawbacks

The single largest drawback to the installation of a multilateration system would be the acquisition and installation costs. Also, if funded through the Part 150 process, it could not be used for assessing landing fees or other airport charges.

### Implementation Details

**Responsible Implementing Party:** The City of Philadelphia, as the airport sponsor, is responsible for upgrading existing ANOMS and radar tracking capabilities.

**Schedule of Implementation:** Implementation of this measure could be at any time, although in order to potentially receive AIP funding, the measure must first be approved by the FAA.

**Costs associated with Implementation/Funding:** Costs associated with the installation of a multilateration system depending on the parameters of the system could be between $500,000 and $1 million. Also, there would be ongoing maintenance and service costs associated with the system after initial installation.

### Relationship to Other Recommended Measures

The improvement of PHL’s existing ANOMS supports Measure PM-8 (Fly Quiet Program), Measure PM-6 (Periodic evaluation of noise exposure), and monitoring the airport’s ongoing flight and ground operations.

### Preliminary Recommendations

**PM-2: Enhance the Airport’s existing Noise Monitoring and Flight Tracking System by acquiring a multilateration system to improve system reliability and response rates.**
Recommended Program Management Measure PM-3 (Alternative PM-B-1)

Install Additional Permanent Noise Monitors

Description

Many airports track aircraft and community noise levels by use of permanent or temporary noise monitors placed on the airfield and in the community. As part of an Airport Noise Operations Monitoring System (ANOMS), these monitors allow an airport to review flight tracks, capture noise data, generate reports of specific flight events, observe noise measurements, and prepare periodic summaries of flight activity. These systems acquire tracking data either from a live feed of air traffic control radar or from specialized tracking equipment that is a part of the system. An ANOMS consists of two primary components: noise monitoring terminals (permanent and/or portable) and a flight tracking system that is capable of matching noise events with aircraft activity. The complete system allows for the correlation of noise events at each noise-monitoring terminal (NMT) with actual flight operations providing the ability to identify the aircraft type, operator, destination or arrival, altitude and distance from the NMT, and time of the operation.

PHL first installed permanent noise monitors and ANOMS in 1997, and currently operates eight (8) permanent NMTs in the vicinity of PHL and Northeast Philadelphia Airport. Four (4) portable monitors are also part of the system, which allows for precise measurements to be made at local homes, on the airfield or other locations within twenty-five (25) miles of PHL where detailed data is needed on aircraft noise levels. Figure 5-1 depicts the locations of the existing permanent NMTs associated with PHL. The noise monitors collect all sound level data at a location, which is then correlated with aircraft flight tracking data by the ANOMS. This process separates noise created by aircraft activity from other noise created in the community, such as automobiles, animals, and industrial noise. Each permanent noise monitor must be carefully sited in order to maintain a line of sight with aircraft, and be located in areas with a minimal amount of other noise sources. The range of the noise monitor – or its ability to adequately measure noise from an aircraft and correlate it to the proper aircraft operation - is a function of these considerations. Noise monitoring stations provide useful information about noise levels, but only for a very specific area. Often, both ambient noise levels and aircraft noise events can vary notably within short distances.

Both PHL and the community recognize the utility of maintaining noise monitoring stations, and PHL desires to continue to improve and upgrade the system, especially in light of the changes that have occurred and are anticipated to occur in the airspace surrounding PHL. Since the partial implementation of the Airspace Redesign and extension of Runway 17/35, noise complaints have increased and the awareness of the public and aircraft noise concerns has resulted in additional workload for PHL staff. In 2007, a monitor was installed in northern Delaware at a cost of approximately $20,000, and a portable noise monitor is used seasonally to monitor noise levels at the deicing facility on a portion of the airfield located in Tinicum Township. The Airport is considering replacing that temporary monitor with a permanent monitor, as portable units are not made for long-term usage, particularly in harsh winter weather conditions.

This measure recommends the installation of additional permanent noise monitors at various locations around PHL. Figure 5-1 also depicts proposed future NMT sites. Sites include NMTs that would capture aircraft ground operations, arrivals, and departures, in areas of high volumes of noise complaints and in areas where flight activity may change due to the Runway 17/35 extension or Airspace Redesign project.
### Relationship to PHL Noise Environment

The 2003 Part 150 program evaluated updating the airport’s existing system. Measure PM-2 (Enhance the Airport’s Noise Monitoring System) and Measure PM-3 (Install additional noise monitors) both evaluated enhancements to the system, and the FAA subsequently approved both. PM-3 included evaluating a potential monitor in Tinicum Township and another in the Brandywine Hundred section of Northern Wilmington in Delaware. A monitor was installed in Northern Wilmington in 2007 and seasonal monitoring does occur in Tinicum Township at the deice pad site, in addition to the permanent monitor that has been operating in Tinicum Township since 1997.

### Noise Benefits

As a program management measure, this measure would not result in reductions to the noise levels generated by aircraft operating at PHL, or the number of persons within the DNL 65 dB noise exposure contour, but would allow for the better quantification and analysis of aircraft noise events. It is important to note that noise monitors cannot be used for determining fines or other penalties related to use of voluntary noise abatement procedures, but can be used for encouraging compliance and educating aircraft operators and air traffic controllers when deviations occur.

Although Part 150 requires NEMs to be developed using the Integrated Noise Model (INM), noise monitors allow the airport to corroborate the estimated noise levels predicted by the models with actual historical data.

### Other Benefits

Additional permanent NMTs would allow PHL to better address complaint investigation and responses, supply data for periodic noise reports and noise contours modeling analysis, evaluate historical noise trends in the community, evaluate Noise Abatement Procedure compliance investigations, and collect and archive measured data. Additionally, monitoring the long-term noise levels at each of the NMT locations could help identify the need to update the airport’s NEMs. Improvements to the system would allow the airport to show transparency and good faith by openly sharing data with community members.

### Drawbacks

Permanent NMTs only provide noise level measurements at a specific location. The selection of NMT locations also has the potential to be controversial. Many communities feel they would benefit with the installation of an NMT, however, it is not feasible to install an NMT in every community.

The installation of additional NMTs can be costly. The recently installed NMT in northern Delaware cost approximately $20,000. Additional NMT locations could require additional staff resources to oversee the system and process the data. Each NMT requires annual calibration and ongoing preventative maintenance service. Minimal costs associated with utilities (phone and electric) are also incurred at each permanent NMT site.

Since many permanent NMTs are not located on Airport property, agreements are required with local governments as to where they can be placed; also, local governments must agree to keep the area around the monitors free of trees or other obstructions that may hinder their operation or service. Also, access to electrical power and telephone service may limit potential locations, as would nearby non-aviation noise sources, such as highways or railroad tracks.

NMTs cannot be used to determine eligibility for sound insulation or other mitigation programs, as that must be done through a Part 150 Study.
Implementation Details

**Responsible Implementing Party:** The City of Philadelphia, as the airport sponsor, is responsible for upgrading the ANOMS system. The Airport may desire to identify potential locations in-house, or may enlist the services of a specialized consultant to assist in the location of specific sites that may be suitable for an NMT. Locations would be identified based on areas overflow by aircraft that are not served by existing NMTs, taking into special consideration the areas that may experience additional or new aircraft overflights as a result of the changes anticipated to occur with the full implementation of the Airspace Redesign and the extension of Runway 17/35.

**Schedule of Implementation:** This measure, as already approved, is ongoing.

**Costs associated with Implementation/Funding:** Generally, the costs associated with acquiring additional permanent noise monitors is potentially eligible for FAA funding. The Airport may fund this measure internally at any time. However, costs associated with increasing staff or hardware to support additional noise monitoring terminals would be paid by the airport and is not reimbursable by FAA. It is anticipated that costs for four additional noise monitors would cost approximately $100,000.

**Relationship to Other Recommended Measures**

This measure is a continuation and expansion of the 2003 Part 150 Measure PM-3. The installation of additional permanent noise monitoring terminals would support PHL’s ongoing efforts to monitor and communicate noise exposure. This measure is directly related to Alternatives PM-B-2 and B-3, which also address the airport’s ANOMS system as a whole. The potential Noise Abatement Advisory Committee (Measure PM-1) could serve as a sounding board for potential NMT locations, and may be able to assist PHL identifying both general and specific potential locations. Further, this measure supports Measure PM-8 (Fly Quiet Program) and Measure PM-6 (Periodic evaluation of noise exposure).

**Preliminary Recommendations**

*PM-3: Install Additional Permanent Noise Monitors.*
Program Management Measures
Recommended Program Management Measure PM-4 (Alternative PM-C)
Continue to Develop the Responsibilities of the PHL Noise Office

**Description**

In 1997, an Airport Noise Office was established at PHL, and a dedicated staff member, known as the noise officer, was responsible for answering and responding to noise complaints, representing the airport at community meetings, coordinating with local planning and development officials and maintaining responsibility for noise measurement and flight tracking equipment. Over time, the responsibilities of the noise office have increased, and in 2007, the office moved to its current location in the Eastwick neighborhood of the City of Philadelphia. This location provides an off-airport site in the community for residents to visit with the noise abatement program manager to discuss noise questions or concerns, as well as space for noise and community related meetings. In 2008, the noise officer position was changed to that of Airport Noise Abatement Program Manager. The main objective of the PHL Noise Office is to educate and inform the general public on aircraft operations, potential changes to aircraft operating characteristics, and where and how aircraft operate in the vicinity of PHL. It is anticipated that the noise office responsibilities will continue to develop and grow in the future.

**Relationship to PHL Noise Environment**

Measure PM-4 in the 2003 FAR Part 150 study recommended that the noise office position be expanded to a full time responsibility, which was implemented in 2008. The Airport Noise Abatement Program Manager manages the noise hotline, flight tracking and noise monitoring system (including the portable noise monitors), meets with members of the community, local and State government, and local jurisdiction land use planners to educate the community on ongoing PHL initiatives.

**Noise Benefits**

As a program management measure, no direct improvements to the noise created by aircraft operations would be realized, and there would be no direct reduction to the number of persons within the DNL 65 dB noise exposure contour; however, an expansion of the noise office responsibilities improves the communication between PHL and the community regarding aircraft noise issues.

**Other Benefits**

Improved awareness and communication between the airport, aircraft operators, and the public.

**Drawbacks**

There are no significant drawbacks to the implementation of this alternative.

**Implementation Details**

**Responsible Implementing Party:** The City of Philadelphia, as the airport sponsor, is responsible for staffing the Airport Noise Office and the Noise Abatement Program Manager position.

**Schedule of Implementation:** This measure, already approved under the 2003 Part 150, could begin at any time, and does not require Part 150 approval by the FAA to be implemented.

**Costs associated with Implementation/Funding:** Depending on levels of responsibility of the noise office, implementation is ongoing, and is not contingent upon FAA approval of this measure. However, the City of Philadelphia Division of Aviation may incur additional staffing costs with the additional responsibilities of the Airport Noise Abatement Program Manager.
Relationship to Other Recommended Measures

This measure supports PHL’s ongoing noise management programs. Measure PM-1 recommends that the Airport Noise Abatement Program Manager be the head of the Noise Abatement Advisory Committee, and the responsibilities of additional noise monitoring equipment under Measures PM-2, PM-3, and PM-7 would also fall to the noise office staff. Further development of the community awareness program (Measure PM-5 and Fly Quiet program elements (Measure PM-8), and the continuous monitoring of the PHL noise environment (Measure PM-6) all have the potential to increase the workload of the Airport Noise Abatement Program Manager.

Preliminary Recommendations

*PM-4: Continue to Expand the Responsibilities of the PHL Noise Office.*
Recommended Program Management Measure PM-5 (Alternative PM-D)
Continue to Develop an Informal Community Awareness Program

Description

The goal of a community noise awareness program is to disseminate information designed to help members of the public understand airport operations and their potential environmental effects. Community awareness programs that focus on noise not only attempt to help the public understand noise, but also to educate the public on why aircraft operate in certain manners. A community awareness program can provide information about airport tenants, the types of aircraft in use and operations flown, and the times of days operations are flown. Additionally, these programs can share the pilot’s and airport tenant’s perspectives and provide information regarding future or temporary construction projects that would change the typical operating conditions at the airport. This type of program could also provide detail on various noise and land use mitigation projects undertaken by the airport.

Elements of PHL’s existing informal community noise awareness program include:

- Briefings to elected officials on noise issues and operating characteristics at PHL;
- Response to noise complaints, including where necessary providing graphics, flight tracking details, and noise monitoring data;

Opportunity for expansion of the community awareness program include:

- Enhancing the PHL website with information pertaining to PHL, aviation, and noise terminology;
- Creation and maintenance of a PHL Noise Mailing List database, consisting of attendees to various public meetings, including the public workshops from this study, the CEP EIS, and historic mailing lists;
- Publication of quarterly airport operational and noise monitoring reports;
- Publication of noise complaint data;
- Providing the public with access to flight tracking data (addressed in PM-7);
- Publication of scheduled or unscheduled changes in the Airport’s traditional operating characteristics, brought on by temporary runway closures, the arrival of new aircraft types, or extended periods of runway use shifts due to weather;
- Providing updates on ongoing airport mitigation programs, such as the implementation of RNAV procedures, the ongoing residential sound insulation program, and others.

Relationship to PHL Noise Environment

This measure (Measure PM-5) was first identified in the 2003 FAR Part 150 program, and has been partially implemented in an informal manner.

Noise Benefits

As a program management measure, the elements of a community noise awareness program would not directly decrease noise exposure, but would rather increase awareness of operational, noise, and land use issues that would have the potential to increase the understanding of what causes noise and decrease controversy related to aircraft operations at PHL.
Other Benefits

A community awareness program can indirectly benefit the compatible land use planning efforts of jurisdictions surrounding PHL, by increasing the visibility of short and long term airport planning projects.

Drawbacks

There are no major drawbacks to implementing a community noise awareness program.

Implementation Details

Responsible Implementing Party: The City of Philadelphia, as the airport sponsor, is responsible for the management of the community awareness program. The elements of a community noise awareness program, some of which are currently in place, can be implemented at any time and do not require FAA approval under Part 150.

Schedule of Implementation: This measure, already approved under the 2003 Part 150, could begin at any time, and does not require Part 150 approval by the FAA to be implemented.

Costs associated with Implementation/Funding: Some program elements have the potential to incur costs, such as additional staffing, publication/printing costs, and website development costs. These costs are the responsibility of PHL and are not eligible under Part 150.

Relationship to Other Recommended Measures

This measure supports other recommended Program Management measures, such as PM-8 (Fly Quiet Program), PM-2 (Enhance the airport’s Flight Tracking and Noise Monitoring System), and PM-1 (Establish a Noise Abatement Advisory Committee).

Preliminary Recommendations

PM-5: Continue and expand the Airport's informal community noise awareness program.
Recommended Program Management Measure PM-6 (Alternative PM-F)
Update the Noise Exposure Maps and Noise Compatibility Program

Description

A standard provision included in Part 150 studies is a recommendation to update the Noise Exposure Maps (NEMs) at the conclusion of the Part 150-prescribed 5-year time frame. This ensures a continuation of the evaluation of noise exposure surrounding an airport, and it also allows for modifications to the boundaries of various land use mitigation programs, including sound insulation.

In circumstances where notable changes occur at an airport that will cause a significant increase or decrease in the DNL noise contour of 1.5 dB or greater over noncompatible land uses, that have the potential to alter the boundaries of a noise exposure contour, or when land use development patterns and zoning near the airport changes, an airport may elect to update NEMs even prior to the completion of the five-year timeframe. Changes could include the introduction of a nighttime cargo carrier, a notable increase in the number of operations, or a change in the aircraft fleet mix. Additionally, changes in land use development patterns around an airport could prompt local land use planners or airport officials to update the noise exposure contours for use as a land use planning tool.

Relationship to PHL Noise Environment

Measure PM-6 was first identified in the 2003 FAR Part 150 program. This Noise Compatibility Program Study Update was undertaken to update Noise Exposure Maps and the airport’s Noise Compatibility Program first developed between 2001 and 2003. Continuation of this measure support’s PHL’s ongoing noise management efforts.

Noise Benefits

Quantifying the noise exposure environment surrounding PHL supports efforts by PHL and local jurisdictions to reduce existing and potentially incompatible future land uses and the protection of noise-sensitive facilities beyond the DNL 65 dB noise exposure contour. Updating the airport’s NEMs allows PHL to continue to access AIP funding for noise mitigation efforts, such as the residential sound insulation program.

Other Benefits

Continuous updating of Noise Exposure Maps and the airport’s Noise Compatibility Program ensure that local land use planners have access to the most up-to-date information regarding noise exposure at PHL, for use in land use planning decisions (both short-term, such as building permits, real estate disclosure, and zoning changes, and long-term, such as comprehensive planning efforts).

Drawbacks

There are no major drawbacks to the ongoing update of the airport’s NEMs and NCP.

Implementation Details

Responsible Implementing Party: The City of Philadelphia, as the airport sponsor, is responsible for implementing an update to the NEMs and NCP.

Schedule of Implementation: As the physical infrastructure at PHL and surrounding land uses patterns change over time, PHL staff would evaluate the need to update Noise Exposure Maps and, if necessary, the Noise Compatibility Program. Should no changes that might cause notable differences in noise

Program Management Measures
Costs associated with Implementation/Funding: The cost of an NEM update may range from $150,000 to $350,000, while the cost of an update to the NCP would range from $400,000 to $800,000, based on past airport programs. These costs may range depending on the amount of public participation, the number of alternatives evaluated, and other variables. A percentage of the costs to update NEMs and/or an NCP are eligible for Federal funding (80% are reimbursable, while the remaining 20% would be covered by local funding sources, including the City of Philadelphia as the airport sponsor.

Relationship to Other Recommended Measures

This measure supports PHL’s ongoing and proposed noise compatibility program by providing a method for continuous updating of noise exposure and ensuring the methods that may reduce noise exposure are evaluated.

Preliminary Recommendations

PM-6: Update the Airport’s Noise Exposure Maps and Noise Compatibility Program five years from the date of FAA approval, or as conditions at the airport change such that new noise-sensitive development may be impacted by the DNL 65 dB noise exposure contour.
Recommended Program Management Measure PM-7 (Alternative PM-B-3)
Improve and Upgrade Web-Based Noise Information

Description

In order to improve PHL’s overall communication of noise issues, the goal of the PHL Noise Office is to make all relevant noise program information as readily available to the public as possible, via multiple communication methods including a web portal that is easy to find from the Airport home page. Topics that may be included in an improved PHL noise website include:

- Generic noise information (what it is, how it is measured, etc);
- Operations data (where aircraft fly, what dictates the direction or flow of aircraft, etc);
- Accessible and informative noise complaint database form;
- Announcement of temporary operational changes (i.e. upcoming runway closures or weather situations that might impact the frequency or routing of flights over nearby areas);
- Contact information for the Airport Noise Office;
- Links for further research/information;
- Summary of ongoing and past noise projects at the airport;
- Links to flight tracking system; and
- Links to activity of the Noise Abatement Advisory Committee.

PHL has endeavored to share much of this information with the public, but desires to expand the information available on the airport’s website. Residents have consistently requested that PHL provide a web-based flight tracking system, accessible to the public. For security purposes, such systems delay aircraft information for several minutes and filter out sensitive flights, such as those by military or law enforcement aircraft.

Once an airport has installed noise monitoring terminals and a flight tracking system, the noise office gains the ability to respond to public inquiries to aircraft noise events with actual noise level and overflight data. With PHL’s current capabilities, noise complaints are filed by telephone, web-based complaint form or email to the Airport Noise Office, which investigates the complaint by evaluating radar data and communicating with the ATCT or aircraft operators as necessary. The findings and resolution are then provided to the public. As noted in Measure PM-2, this process is delayed by the FAA hold on radar tracking data, which delays response times for public complaints that require further for approximately 4-5 business days. A web-based tracking website would require a feed from another source besides the FAA, such as a multilateration system or passively acquired radar feed.

While the Airport Noise Office provides a valuable resource for the community, many members of the public likely are concerned with aircraft noise but do not call the hotline, either because they are unaware of its existence or because they do not feel that adequate information would be available. An obvious link to the noise program information on the airport’s website is essential to provide the quickest and easiest passive access to relevant information. With the increasing capabilities of internet-based technology, PHL desires to improve the amount of content available to the public on its website. This includes information pertaining to current operations, runway use and anticipated runway closures, noise monitoring reports and the ability to submit noise complaints on-line, and ultimately, a live-flight tracking system. Both the airport’s existing ANOMS system and any potential improved software systems resulting from the implementation of Measure PM-2 provide web-capable software systems that would facilitate this capability.
Relationship to PHL Noise Environment

The 2003 Part 150 program evaluated updating the airport’s existing system. Measure PM-2 (Enhance the Airport’s Noise Monitoring System) and Measure PM-3 (Install additional noise monitors) both evaluated enhancements to the system, and the FAA subsequently approved both. PM-2 included upgrades that would increase processor speed, increase data storage capabilities, and enhance noise monitoring and mapping software. A major software and hardware upgrade in January 2009 met these objectives and additional noise monitors have been placed in the community since the 2003 Part 150 was approved.

Noise Benefits

As a program management measure, this measure would not impact the noise levels generated by aircraft operating at PHL, or reduce the number of persons within the DNL 65 dB noise exposure contour, but it would allow for the better quantification and analysis of aircraft noise events and communication of noise and operations news to the public.

Other Benefits

Primarily, the benefit to enhancing the airport’s communication of noise and operational activity is improved public awareness of noise issues. Providing members of the public with a means of investigating aircraft activity may result in a reduction in noise complaints, and an improved understanding of noise issues may result in less opposition to airport facility development plans. This measure also provides an additional level of transparency between PHL, the FAA and local communities. Public web-based tracking systems have become common at many large airports and have been a successful in educating the public about aircraft operations in the area. Plus, these systems allow members of the public to provide accurate and specific information to the Airport Noise Office when they file a complaint.

Drawbacks

Information available to the public must be presented clearly and in an easy-to-understand format. One potential drawback would be misinterpretation of noise or operational data when the opportunity to talk directly to the Airport Noise Abatement Manager is not available. The ability to provide live (or delayed) flight tracking on the PHL website would require the installation of additional software components.

Implementation Details

Responsible Implementing Party: The City of Philadelphia, as the airport sponsor, is responsible for updating the contents of the PHL website.

Schedule of Implementation: This measure, already approved under the 2003 Part 150, could begin at any time, and portions of which do not require Part 150 approval by the FAA to be implemented.

Costs associated with Implementation/Funding: The costs associated with staffing dedicated to this effort is not reimbursable by the FAA and must be borne by PHL. The installation of web-based flight tracking capabilities would be more costly, and may be eligible for Federal funding under AIP guidelines. It would be preferred that a multilateration system (Alternative PM-B-2) be used to feed a real-time web-based tracking site, but other data sources may be available. A standalone public flight tracking system would initially cost approximately $50,000, plus ongoing hosting and maintenance fees after that.
Relationship to Other Recommended Measures

The improvement of the airport's web-based noise and operations information would support PHL's other ongoing and proposed efforts, including Measure PM-8 (Fly Quiet Program), Measure PM-6 (Periodic evaluation of noise exposure), and monitoring the airport's ongoing flight and ground operations.

Preliminary Recommendations

*PM-7: Improve and Upgrade the airport’s existing web-based information.*
Recommended Program Management Measure PM-8 (Alternative PM-E)
Fly Quiet Program

Description

Whereas a community awareness noise program aims to provide information to the public, a Fly Quiet program consists of methods to convey noise and land use sensitivity information to pilots and airport tenants. The main goal of a Fly Quiet program is to enhance communications between airport staff and pilots and to educate pilots and airport tenants on practices that could reduce noise exposure in the vicinity of the airport. In addition to noise abatement procedures already in place, Fly Quiet programs could include written brochures explaining procedures, signage along the taxiway system, the development of a noise-sensitive development map, and the encouragement of practices that reduce noise from aircraft activity. These initiatives, taken collectively, have the potential to reduce the impact of single event aircraft overflights in the communities surrounding the airport. PHL maintains elements of a Fly Quiet program, however additional programming could provide further single-event noise level reductions in the airport environs and improve upon relations between the airport, its users, and the public.

At PHL, specific elements of a Fly Quiet program are proposed to include:

- Runway end signage indicating that pilots should be aware of overflights over potentially noise-sensitive areas. Such signage exists on multiple runways at PHL.

- Development of mapping that depicts specific noise-sensitive areas that pilots should, if possible, avoid or at a minimum, fly with increase noise-sensitivity awareness. Generally, these noise-sensitive maps depict departure corridors, as aircraft on arrival are generally following instrument procedures along the extended runway centerline and are comparatively quieter. These maps would be provided to each airline and the airport’s fixed-base operators for publication.

- Development of a brochure that includes the noise-sensitive map, and also reviews the specific noise abatement procedures in place at PHL. These brochures would be provided to each airline and the airport’s fixed-base operators for publication.

- Continuation coordination with airline and corporate operators as to levels of compliance with noise reduction measures. This would include specific efforts to encourage best-practices for noise reduction per the aircraft manufacturer’s recommended methods. These efforts are anticipated to include periodic meetings with the airline chief pilots, as has been done as part of this Part 150 Study, and periodic meetings with the Air Traffic Control Tower to review existing procedures, the status of the Airspace Redesign Project and implementation of other FAA procedures.

- Efforts to reduce the use of reverse thrust when feasible. Upon touchdown on a runway, aircraft immediately begin decelerating. Primarily, and according to regulations, aircraft must be able to safely stop on the runway with only the use of friction brakes located on the landing gear. However, aircraft often utilize reverse thrust upon arrival, which, in some cases, can reduce the stopping distance by as much as one third of the runway. The use of reverse thrust is beneficial for a number of reasons, such as the safety improvement associated with decelerating the aircraft as quickly as possible, holding short and exiting the runway prior to an intersecting taxiway or runway, and to improve safety in adverse weather conditions. When runway conditions are dry, and sufficient runway length is available, pilots may be discouraged from using reverse thrust. Airports can facilitate the reduction of the use of reverse thrust by designing the runway and taxiway layout with high-speed taxiway exits. Especially during nighttime arrivals, an airport can designate a primary
arrival runway that puts the greatest distance between the runway in use and nearby non-compatible land uses. PHL would work with ATCT and the airlines (during Noise Abatement Advisory Committee and Customer Focus meetings) to understand the feasibility of reducing the use of reverse thrust.

- Most passenger and cargo aircraft are equipped with auxiliary power units (APU), which provide power to an aircraft at a gate or on the ramp. The primary use of an APU is to provide startup power to the aircraft’s main engines. Secondarily, APUs are utilized at the gate or on the ramp to power the aircraft’s electrical, ventilation, and in some cases the hydraulic systems. As a measure to both reduce emissions and to provide better service to its tenant airlines, many airports have begun installing gate electrification systems, ground power units (GPU), and preconditioned air systems to provide sufficient power and ventilation requirements for the aircraft. PHL is in the process of providing these services, and as such, desires to evaluate potential means of reducing APU usage at the gate.

**Relationship to PHL Noise Environment**

Elements of a Fly Quiet program were incorporated into Measure PM-5 in the 2003 Part 150 study. That measure (Establish a pilot/community awareness program) included the development of a noise-sensitive areas map and improved communication between airport users, the Airport Noise Office, and the community. The implementation of the elements in that measure was the responsibility of the Airport Noise Office. To date, no noise-sensitive maps have been developed; however, the Airport Noise Office regularly communicates with airport users, such as ongoing contact with airline Chief Pilots about noise issues and compliance. Signage requesting pilots follow noise abatement procedures is in place at the ends of PHL’s primary runways.

**Noise Benefits**

A Fly Quiet program is a program management measure, and therefore does not result in direct reductions in noise levels or persons in the 65 dB noise exposure contour; however, as a measure, this type of program has the potential to increase the awareness of pilots and airport tenants of practices and methods that may reduce noise exposure in the vicinity of PHL.

**Other Benefits**

Improved awareness and communication between the airport, aircraft operators, and the public.

**Drawbacks**

There are no significant drawbacks to the implementation of a Fly Quiet program. Any potential programs should identify that residents should be cautioned that pilot procedure and ATCT instruction causes variations to flight tracks. A Fly Quiet program is voluntary and the airport cannot penalize operators for deviations.

**Implementation Details**

**Responsible Implementing Party:** The City of Philadelphia, as the airport sponsor, is responsible for the management of the Fly Quiet program. The elements of a Fly Quiet program, some of which are currently in place, can be implemented at any time and do not require FAA approval under Part 150.

**Schedule of Implementation:** This measure could begin at any time, and does not require Part 150 approval by the FAA to be implemented. However, the FAA may require review of specific language distributed to pilots and aircraft operators.

**Costs associated with Implementation/Funding:** Some program elements, such as the cost of publications or informational materials, have the potential to incur costs, which are not anticipated to be
eligible under AIP.

**Relationship to Other Recommended Measures**

Alternative NA-O evaluated methods to reduce the use of reverse thrust, and Alternative NA-P evaluated minimizing the use of Auxiliary Power Units. Measure PM-5 presents elements of the Community Awareness program.

**Preliminary Recommendations**

*PM-8: Continue to develop a Fly Quiet Program that increases awareness of noise-sensitive airport neighbors, and promotes the use of procedures and methods that decrease noise exposure.*