SAN DIEGO COUNTY
REGIONAL AIRPORT AUTHORITY

AIRPORT NOISE ADVISORY COMMITTEE (ANAC)
MEETING AGENDA

Wednesday, October 17, 2012 4:00 P.M.

Quieter Home Program Offices
2722 Truxtun Road
San Diego, CA 92106

NOTE: MEETING LOCATION CHANGE

1. Welcome and Introductions
2. Approval of the July 18, 2012 meeting minutes
3. Information Items:
   A. Airport Authority Update
   B. Curfew Violation Review Panel (CVRP) update
4. Public Comment on Information and Discussion Items (Time Certain – 4:30 p.m.)
5. Presentation Items:
   A. FAA Residential Sound Insulation Program Eligibility Change
   B. Missed Approach Statistics
   C. Complaint Statistics
   D. Early Turn and Contra-Flow Operations Statistics
6. Public Comment (Time Certain – 5:10 p.m.)
7. New business
8. Next meeting date
9. Adjourn

SAN DIEGO INTERNATIONAL AIRPORT

AIRPORT NOISE ADVISORY COMMITTEE (ANAC)
Meeting Minutes
July 18, 2012

On July 18th, 2012, the Airport Noise Advisory Committee (Committee) met at the Commuter Building, 3225 N. Harbor Blvd, San Diego, CA 92101. The facilitator, Mark Butler, Ph.D., commenced the meeting at 4:05 p.m.

Present: John Bennett, County of San Diego; Captain (Ret.) Jack Bewley, Retired Airline Pilot; Rob Cook, FAA Representative; Hirsch Gottschalk, Uptown Planners; Jane Gawronski, PhD., Ocean Beach Planning Board; Congresswoman Susan Davis (ex-officio) Daniel Hazard; Carl Huenefeld,); Michael Patton, City Council District 2 (ex-officio); MCRD; Joe Scaglione, (North Bay); Community Planning Board; Deborah Watkins, Mission Beach Precise Planning Board (ex-officio); Paul Webb, Peninsula Community Planning Board; Mark Butler, Facilitator; and Airport Authority Staff:: Steve Cummings.

Absent: Steven Holt, Airline Representative (ex-officio); Tait Galloway, City of San Diego (Excused); Kirk Hanson (Community member); Jack Zimmerman (Acoustician); County Supervisor Greg Cox (ex-officio) (Vacant); Little Italy Association (Vacant); David Swarens, Greater Golden Hill Planning Committee (Excused)

Dr. Butler invited each ANAC participant to introduce him/herself. Because there was no quorum present, Dr. Butler tabled approval of the April 18, 2012 meeting minutes.

Mr. Frazee provided an update on Airport Authority issues. First, he informed the committee of a recent change in the Airport Authority organization which occurred due to the Vice President of Marketing's retirement. The Airport Noise Mitigation Department is now absorbed by the Development Division and, with this change, the residential sound insulation program - Quieter Home Program (QHP) is transferred to Mr. Frazee's direction.

Second update is regarding airport operations - the monthly air traffic report shows the following activity - Passengers – up 2.9% from 2011 but still well below the 2007 heights; Operations – up 1.2% from 2011; for May 2011 – arrivals and departures indicate 450 operations per day; in 2007 we had 660 operations per day. The decrease is caused primarily by recent air carrier mergers (Delta/Northwest and United/Continental). This action decreases the number of airplanes flying in and out of SDIA due to efficiencies of scale, lack of competition, and use of larger aircraft flying less often. Mr. Frazee also informed the committee that some of the air carriers, like Delta airlines, is upgraded commuter aircraft,

increasing overall seat capacity to be able to move more travelers with less frequency of operation. Available air carrier seats for July are down 4.8%; August, down 2.8%; and September, down a fraction. Fewer aircraft operations are a double-edged sword, Mr. Frazee continued. Although fewer operations equate directly to less aircraft noise in the community, it also means less choice and flexibility for the traveler and less revenue for the airport. He mentioned that aircraft continue to be quieter and have better climb performance as new equipment is introduced. As a final note, he also mentioned that Japan Airlines (JAL) will be starting their nonstop flight to Narita (Tokyo) on December 2nd, 2012 and flights will be four times a week.

Additionally, Mr. Frazee talked about new infrastructure in-fill plans, a project called Airport Master Plan North Side Development Plan. The first technical advisory committee met on July 10th, and the plan has an in-place framework for the airport that speaks to the future and options for the airport's 1960's-era Terminal 1 and how the Teledyne Ryan property on the airport's south side may be built-out. The North Side Development is a four year process; two years in planning and another two years in federally-mandated environmental analysis. The goal is looking to developing a funding source for terminal replacement and how best to use the south side land as a revenue generating opportunity for the airport. In regards to airport operations and passengers, a forecast of the passenger and operations trends was last conducted in 2008; a new demand forecast will be conducted shortly by Leigh-Fisher and Associates as a part of the planning phase. Mr. Frazee mentioned that completion of a new materials distribution facility on the north side of the airport will move a significant amount of airport-bound heavy truck traffic off Harbor Drive. Other upcoming projects include a consolidated rental car center on the north side, further decreasing airport-related traffic on Harbor Boulevard.

The next presentation dealt with actions of the Curfew Violation Review Panel (CVRP) regarding operations in violation of the Authority's time-of-day noise curfew. Two CVRP meetings were held since the last ANAC meeting. During the first, held June 6, 2012. The Panel assessed penalties against three of nine operations. Those not penalized included five due to maintenance issues outside the operator's control discovered shortly before or during the taxi phase, and one due to weather and ATC delay. The remaining three were assessed a penalty. On August 3, 2012, six operations were evaluated by the Panel, three were assessed a penalty and three were assessed no penalty due to maintenance. Mr. Frazee mentioned that CVRP is conducted on the first Wednesday on a bi-monthly basis starting in February. He also explained that at CVRP the Panel looks to discover the initial cause of curfew violation, and, if that cause is outside the control of the operator, a determination is often made to assess no penalty.

A quorum now present, Dr. Butler requested a motion to approve the April 18 meeting minutes. The minutes were unanimously approved without discussion.

Ms. Sjohnna Knack, Manager of the Quieter Home Program (QHP) next gave an update on the Program. Ms. Knack informed the committee that QHP is celebrating the completion of their 2,000 home the following week and invited all members to the event. The location of the

event will be held at the home where 2,000th home was completed, a condominium complex (Pt. Loma Tennis Club) in Pt. Loma. The celebration will begin at 5:00 p.m. with a short program featuring remarks from Ms. Thella Bowens, the Authority President /CEO, Mr. Robert Gleason, Authority Board Chairman, Congresswoman Susan Davis, and Mr. Mark McClardy from the Federal Aviation Administration. A barbecue dinner will be served beginning at 5:30 p.m. As of to date, 2,004 homes have been completed, broken down as follow – 579 historic homes and 1,725 non-historic homes; she reminded members that a home is either a single-family home or a unit within a multi-family parcel; 999 on the east end; 1,005 on the west; single-family multi family breakdown, 1,482 single-family and 522 multi-family. There are 908 homes on the waiting list, and the average ownership dates from 1996. A recent survey of completed homeowners resulted in 95.6% expressing overall satisfaction with the program; 93.1% agree that the terms, features and limitations programs are explained sufficiently. Another question related to how effective remediation efforts were in reducing perceived noise levels inside the home - as for the question regarding the sound insulation and efforts are effective in reducing the noise inside the home, 59.3% responded very effective; 38.6% effective; and only 2% responded not effective; and, lastly, a question on whether participating in the Quieter Home Program was a good idea, response was 92.2% a good idea; less than 5% responded too soon to tell, not a good idea or no opinion. This concluded Ms. Knack's update.

Mr. Garret Hollarn gave an update on the community's internet-based flight tracker. The system is now live and in near-real time (delayed 22 minutes for security) and has several added features from the last system, including local weather information. Community response to the system has been positive and it was noted that the installation of the web flight tracker is a primary reason overall noise complaints have decreased.

Mr. Hollarn presented updated Missed Approach statistics. See the PowerPoint presentation at the following link:
http://www.san.org/documents/airport_noise/anac/12July_Presentation_Items.pdf

Mr. Hollarn presented an update of year-to-date Noise Complaints. See the PowerPoint presentation at the following link:
http://www.san.org/documents/airport_noise/anac/12July_Presentation_Items.pdf
Prior to the presentation, Mr. Hollarn commented that noise complaints are trending below 2011 which, incidentally, produced the fewest community complaints since we began keeping records; approximately 175 for a year is an all time record low, and he emphasized that since web flight tracker was in place in 2006, every year since its installation noise complaints have decreased, most likely due to residents using the software to discover for themselves the identification, position and altitude of an aircraft overflights instead of calling the Noise Office. One member asked about an air carrier departure each night time around 10:30 – 11:00 p.m., Mr. Hollarn informed the member that it is most likely a US Department of Justice (DOJ) flight that departs around that time, Monday – Friday.

Mr. Cummings presented updated Early Turns operations. See the PowerPoint presentation at the following link:
http://www.san.org/documents/airport_noise/anac/12July_Presentation_Items.pdf

Mr. Cummings next presented Contra-Flow operations. See the PowerPoint presentation at the following link:
http://www.san.org/documents/airport_noise/anac/12July_Presentation_Items.pdf

There was no public comment.

Under new business – It was announced that the next ANAC meeting, October 17, be held at the Quieter Home Program offices. Directions and information will be sent out prior to the meeting and staff suggested that members invite people from their respective community to attend this meeting and become acquainted with QHP.

Dr. Butler then inquired whether the participants have any input or ideas that would make the meetings more responsive to their needs. For instance, committee members are invited to comment on the flow of agenda items, formatting and presentation of statistics and whether the reports are still effectively telling the story and meeting the community's needs. It was explained that prior ANAC members directed which statistics they felt were important and meaningful. Members are invited to suggest different presentations to meet their needs. Dr. Butler asked the committee members to give it some thought and, since changes are usually directed at the year's first meeting, further discussion is invited at the October meeting.

Hearing no more questions, Dr. Butler adjourned the meeting at 5:50 p.m. The next meeting is scheduled for Wednesday, October 17, 2012 at 4:00 p.m. at the QHP offices.

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Dan Frazee
Director, Airport Noise Mitigation

NOTE: 1) Please refer to the Frequently Asked Questions (FAQ's) on the Airport Noise Office website at www.san.org/airportnoise/info_noise_main.asp for the answers to commonly asked aircraft noise-oriented questions at SDIA.

San Diego International Airport (SAN)
Curfew Violation Review Panel (Panel)
August 1, 2012
Record of Decision (ROD)

Panel members: George Condon, representing Planning and Operations Division; Howard Kourik, representing Administration Division; Troy Ann Leech, representing Facilities Development Division; Dan Frazee, Airport Noise Mitigation (Facilitator), Garret Hollarn and Steve Cummings (Airport Noise Mitigation Staff)

Airline, pilot, or operator representatives present: Kyle Benton (US Airways), Brian Towle (Jet Blue Airways), John Oleynick (Delta Air Lines), Al Turner (United), and Patricia Delgado (Spirit)

Members of the public present: None

Spirit NKS918; June 11, 2012 (2337L)
Written information was provided; a representative was present.

Panel Recommendation
The Panel voted unanimously to assess penalty in the amount of $6,000

United Airlines Flight 485; June 22, 2012 (2337L)
Written information was provided; a representative was present.

Panel Recommendation
The Panel voted unanimously to assess no penalty due to maintenance.

Jet Blue Airways Flight 186; June 23, 2012 (0006L)
Written information was provided; a representative was present.

Panel Recommendation
The Panel voted 2:1 to assess a penalty in the amount of $2,000

Spirit NKS918; June 30, 2012 (0039L)
Written information was provided; a representative was present.

Panel Recommendation
The Panel voted unanimously to assess penalty in the amount of $10,000

US Airways Flight 199; July 1, 2012 (2335L)
Written information was provided; a representative was present.

Panel Recommendation
The Panel voted unanimously to assess no penalty due to maintenance.

Delta Air Lines Flight 1072; July 2, 2012 (0019L)
Written information was provided; a representative was present.

Panel Recommendation
The Panel voted unanimously to assess no penalty due to maintenance.

San Diego International Airport (SAN)
Curfew Violation Review Panel (Panel)
October 3, 2012
Record of Decision (ROD)

Panel members: Murray Bauer, representing Planning and Operations Division; Mike Kulis, representing Administration Division; Troy Ann Leech, representing Facilities Development Division; Dan Frazee, Airport Noise Mitigation (Facilitator), Garret Hollarn and Steve Cummings (Airport Noise Mitigation Staff)

Airline, pilot, or operator representatives present: Jean Buggs (United)

Members of the public present: None

N480RW (GLF3); July 28, 2012 (2249L)
No written information was provided; no representative was present.

Panel Recommendation
The Panel voted unanimously to assess penalty in the amount of $2,000

United Airlines Flight 252; July 28, 2012 (2349L)
Written information was provided; a representative was present.

Panel Recommendation
The Panel voted unanimously to assess no penalty due to maintenance.

US Airways Flight 199; August 21, 2012 (2343L)
No written information was provided; no representative was present.

Panel Recommendation
The Panel voted to defer decision until the next CVRP (December 5, 2012).

United States Government Accountability Office

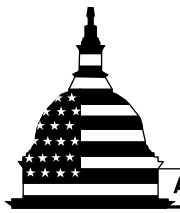
GAO

Report to the Committee on Commerce, Science, and Transportation, U.S. Senate

September 2012

AIRPORT NOISE GRANTS

FAA Needs to Better Ensure Project Eligibility and Improve Strategic Goal and Performance Measures



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GAO-12-890

September 2012

AIRPORT NOISE GRANTS

FAA Needs to Better Ensure Project Eligibility and Improve Strategic Goal and Performance Measures

GAO Highlights

Accountability * Integrity * Reliability

Highlights of GAO-12-890, a report to Committee on Commerce, Science, and Transportation, U.S. Senate

Why GAO Did This Study

The Federal Aviation Administration (FAA) predicts that air traffic in the United States will increase 20 percent by 2024. If not mitigated, the noise associated with these flights could significantly diminish the quality of life for communities surrounding airports and constrain an airport's ability to expand. Over the last 30 years, Congress has provided billions of dollars in grants under the Airport Improvement Program to airports to reduce and mitigate significant noise exposure. FAA's overall strategic noise goal is to reduce the population exposed to significant noise to fewer than 300,000 people nationwide.

At your request, GAO (1) described how airport noise exposure has changed, (2) evaluated noise grant results, and (3) assessed potential future demand for these grants. GAO analyzed FAA data on noise grants, planned projects, and population exposure and reviewed relevant literature. GAO also conducted interviews with relevant airport and FAA officials and industry representatives, as well as visited seven airports that have used noise grants, judgmentally selected based on size, location, and other factors.

What GAO Recommends

GAO recommends that the Department of Transportation align its strategic goal for noise reduction with the results of the noise grant program and establish corresponding performance measures. The department provided technical comments and agreed to consider the recommendations.

View GAO-12-890. For more information, contact Dr. Gerald L. Dillingham at (202) 512-2834 or dillinghamg@gao.gov.

What GAO Found

The number of people in the United States exposed to significant airport noise has steadily declined from roughly 7 million people in 1975 to about 309,000 today. This change reflects large decreases in the size of areas that are exposed to significant airport noise and is primarily due to improvements in aircraft technology.

Since 1982, FAA has provided $5.8 billion in Airport Improvement Program noise grants to 481 airports for residential and public building noise insulation and land acquisition, among other project types. The majority of grants went to airports that voluntarily undertook Noise Compatibility Programs (NCP). While these funds benefitted thousands of people, GAO identified two areas of concern regarding FAA's enforcement of project eligibility criteria that creates a risk that some undetermined amount of grant funds may have gone to projects that do not meet FAA's project eligibility criteria. First, FAA does not always require airports to maintain updated and accurate noise exposure maps to define eligible project areas. For example, half of the noise exposure maps—which show the areas around an airport that are exposed to significant airport noise and are a key element in determining project eligibility—are from the 1990s or earlier. For an airport to receive a noise grant, program criteria generally require that such maps are updated every 5 years, but nine airports received $87.6 million in grants in fiscal years 2010 to 2011 based on maps that predate 2000. Second, FAA has inconsistently implemented requirements that limit residential noise insulation projects to homes with interior noise levels above an established threshold. In the absence of FAA enforcement, airports have little incentive to update maps and limit residential treatment because doing so might eliminate planned projects expected by the public. Concurrent to GAO's review, FAA issued new guidance that should substantially address this risk if effectively implemented. Further, the results of noise grants are not linked to FAA's strategic noise reduction goal and measurement approach. For example, the goal does not include the results of noise insulation of homes and schools. As a result, there is insufficient performance information about the effects of noise grants and the extent to which noise exposure remains a constraint on airport growth.

There has been an increase in the estimated cost of planned noise mitigation projects in FAA's 2011 National Plan of Integrated Airport Systems report to Congress, but a number of indicators point to a future decline in demand for grants for noise projects. Specifically, the 2011 report, compared to prior reports, includes a smaller portion of projects in the most significantly noise-impacted areas. Further, since the 2001 report, the number of airports planning eligible noise projects is down 16 percent, with about half the number of planned projects. Additionally, fewer airports are developing new noise compatibility programs and many of the 234 airports with such programs may be completed. For example, 102 of 137 airports with an NCP more than 10 years old received no noise grants since 2007, an indication that those airports may have completed all eligible projects in those plans. Finally, about a third of the people living in significantly noise-impacted areas reside near airports that have not completed, and may never complete, an NCP, a necessary step before an airport can use noise grants for residential noise insulation. This population, therefore, may never be reached by FAA's grant program.

Contents

Abbreviations

ACIP	Airports Capital Improvement Plan
ADO	Airports District Offices
AEDT	Aviation Environmental Design Tool
AIP	Airport Improvement Program
CNEL	Community Noise Equivalent Level
dB	decibel(s)
DNL	Day-Night Average Sound Level
FAA	Federal Aviation Administration
FICAN	Federal Interagency Committee on Airport Noise
GIS	Geographic Information System
INM	Integrated Noise Model
MAGENTA	Model for Assessing Global Exposure from Noise of Transport Airplanes
NCP	Noise Compatibility Programs
NEPA	National Environmental Policy Act of 1969
NPIAS	National Plan of Integrated Airport Systems
NextGen	Next Generation Air Transportation System
PFC	Passenger Facility Charge
SOAR	System of Airport Reporting
VALE	Voluntary Airport Low Emission

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United States Government Accountability Office
Washington, DC 20548

September 12, 2012

The Honorable John D. Rockefeller IV
Chairman
The Honorable Kay Bailey Hutchinson
Ranking Member
Committee on Commerce, Science, and Transportation
United States Senate

The number of commercial and general aviation flights in the United States is estimated to increase 20 percent by 2024, according to the Federal Aviation Administration (FAA). While airports provide access to transportation for millions of people each day, airport noise—by, for example, interfering with speech, sleep, and student learning—can severely diminish quality of life in communities around airports and spur community objections to airport operations and continued growth. Since 1982, to address and mitigate the problems associated with airport noise, Congress has provided a dedicated source of funding within the Airport Improvement Program (AIP) for noise mitigation projects.[1] FAA administers the AIP, which has provided nearly $5.8 billion in grants since fiscal year 1982 to sound insulate homes and other buildings near airports as well as acquire land in, and relocate residents away from, significantly noise impacted areas, among other noise mitigation activities.[2] FAA's 2018 strategic goal for noise is to reduce the residential population exposed to significant airport noise in the United States to less than 300,000 people. AIP-funded noise mitigation projects, administered by airports, are FAA's primary tool to achieve this goal.

FAA has an ongoing responsibility to balance the growing demand for aviation capacity against the environmental concerns and effects on communities caused by airport noise. Aircraft technology, the number of aircraft operations, and noise levels have changed markedly since FAA first began providing AIP noise grants. Moreover, the implementation of

[1]Tax Equity and Fiscal Responsibility Act of 1982, Pub. L. No. 97-248, § 508 (d) (2), 96 Stat. 324.

[2]FAA defines significant airport noise as at or above a Day-Night Average Sound Level (DNL) of 65 decibels (dB). DNL is a generally accepted measure of noise exposure.

the Next Generation Air Transportation System (NextGen)[3] and the growth in aircraft operations that NextGen investments could spur may lead to new demand for airport noise mitigation or new noise challenges. As a result, it is not clear how well the AIP noise grant program will be able to provide an appropriate and effective tool for addressing changes in future airport noise exposure. In light of these concerns, you requested that we examine FAA's AIP noise grants. Our report addresses the following questions:

1. How has overall airport noise exposure changed since AIP noise grants were first funded?

2. How have AIP noise grants been used by airports to mitigate noise and what have these grants achieved?

3. What is the likely future demand for AIP noise grants?

To describe how airport noise exposure has changed over time, we reviewed available literature; assessed the use of FAA noise models; interviewed industry, FAA, and airport officials; and, for illustrative purposes, performed Geographic Information System (GIS) analysis of changes in the areas exposed to airport noise near several large airports. To assess how AIP grants have been used by airports for noise mitigation projects and planning, we analyzed FAA data in the System of Airport Reporting (SOAR). This database includes detailed information about AIP grantees, Passenger Facility Charge (PFC) approvals, project types, and other information. We performed a data reliability assessment of SOAR that included electronic testing, review of FAA documentation, and interviews with relevant FAA officials. We found the data to be sufficiently reliable for our purposes. To assess the likely future demand for AIP noise grants we compiled and analyzed a range of data from different sources. Sources included planned projects in the National Plan of Integrated Airport Systems (NPIAS),[4] FAA's main planning tool for identifying future airport capital projects; data on airports' Noise Compatibility Programs (NCPs) and noise exposure maps, both key

[3]NextGen refers to the transformation of the air transportation system by 2025 from the current radar-based system, to a more automated aircraft-centered, satellite-based system.

[4]The NPIAS may not capture all planned noise mitigation projects that are included in other airport planning documents, such as environmental approvals.

documents for many AIP noise grants; and FAA's estimates of the population exposed to significant airport noise.[5] FAA calculates these estimates with models that are broadly used and generally considered accurate for the purposes intended. We did not independently assess FAA's models. To illustrate the results of our analysis and better understand the real world implementation and future of airport noise programs, we reviewed noise programs at seven judgmentally selected airports. These airports were selected to represent a range of sizes, geographical locations, and use of noise grants. Information gathered from these reviews is not generalizable to all airports. We conducted this performance audit from October 2011 to September 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Since the late 1950s, noise from aircraft and other airport operations has generated controversy within many surrounding communities and can be a constraint on airport development and aircraft operations. As we have previously reported, noise is one of the top environmental concerns at airports.[6] Most airports are owned and operated by public authorities, such as cities, counties, or port authorities, which have primary responsibility for addressing community concerns about noise. The federal government has a long history of helping airports address noise concerns by, for example, defining how airport noise is measured; providing a framework for assessing the impact of noise and for airports to plan noise mitigation projects; and funding eligible noise mitigation projects. Within this context, airports may undertake a range of noise mitigation projects. The federal government has also required the use of

[5]For the purposes of this report, we used the currently accepted definition of significant airport noise (e.g., DNL 65+ dB). The results of our analysis of future demand for noise grants would change if the definition of significant airport noise changes in the future.

[6]GAO, *Aviation and the Environment: Impact of Aviation Noise on Communities Presents Challenges for Airport Operations and Future Growth of the National Airspace System*, GAO-08-216T (Washington, D.C.: October 2007); GAO, *Aviation and the Environment: Systematically Addressing Environmental Impacts and Community Concerns Can Help Airports Reduce Project Delay*, GAO-10-50 (Washington, D.C.: September 2010).

quieter aircraft technologies. The Aviation Noise and Capacity Act of 1990 required that all commercial jets at civilian airports switch to Stage-3 aircraft by the year 2000.[7] Airlines phased out the loudest aircraft over time, and by 2000, the U.S. commercial fleet was composed of quieter aircraft than in the 1990s.

FAA is charged with implementing and enforcing noise regulations for airports' noise mitigation efforts, including setting the eligibility standards to receive federal funding. In 1979, the Aviation Safety and Noise Abatement Act charged FAA with establishing regulations for noise compatibility planning.[8] In 1984, FAA promulgated regulations, commonly referred to as the "Part 150" program, that guide airports' Noise Compatibility Programs (NCP).[9] Under these Part 150 regulations, FAA has adopted Day-Night Average Sound Level (DNL) as the measure used for assessing noise.[10] Generally FAA applies DNL 65 dB as the minimum level for residential properties to be eligible for federally funded noise mitigation.[11] Airport operators must submit noise exposure maps to the FAA for review and acceptance before submitting an NCP. These maps show, among other things, the airport property, runway location(s), flight paths, DNL noise contours at the 65, 70, and 75 dB levels (and the

[7]Pub. L. No. 101-508, §9308, 104 Stat. 1388-382 (1990). Federal noise regulations define aircraft according to 4 classes: Stage-1, Stage-2, Stage-3, and Stage 4. Stage 1 are the loudest, and Stage 4 are the quietest. All Stage 1 aircraft have been phased out of commercial operation, and all unmodified Stage 2 aircraft over 75,000 pounds were phased out at the end of 1999. The FAA Modernization and Reform Act of 2012 (Pub. L. No. 112-95, §506(a), 126 Stat. 11, 105 (2012)) requires the phase out of Stage 2 aircraft under 75,000 pounds (general aviation aircraft) by the end of 2015.

[8]Pub. L. No. 96-193, §104, 94 Stat. 51 (1980).

[9]14 C.F.R. Part 150. 49 Fed. Reg. 49269, December 18, 1984.

[10]In 1972, the Environmental Protection Agency (EPA) was required to study exposure to airport noise (.49 U.S.C. § 44715(a)(2)). EPA's study identified Day-Night Average Sound Level (DNL) as the appropriate measure for assessing cumulative noise in the airport environment. DNL is a cumulative sound level in decibels (dB), for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between 10:00 p.m. and 7:00 a.m.

[11]According to FAA, a lower local standard (e.g., DNL 60 dB) may be used if the standard is formally adopted by the local jurisdiction for land-use compatibility and the airport sponsor has incorporated it. See, 49 U.S.C. §47504(c)(2)(B)). Where a compatible land use plan is adopted outside of the Part 150 process, the land use compatibility plan must be developed cooperatively by the airport sponsor and local jurisdiction. 49 U.S.C. § 47141.

incompatible land uses and estimates of the population residing within those contours), and the location of noise sensitive public buildings, such as schools, as defined by FAA regulations.[12] For example, residential development within the DNL 65+ dB contour is deemed incompatible, whereas commercial and manufacturing development is not because of the different impacts of noise on people. The NCP documents the noise mitigation projects the airport proposes to implement and is submitted to FAA for review and approval. The airport may offer mitigation measures within incompatible land use areas that meet other eligibility criteria. For example, a residence located within a DNL 65+ dB area that also has interior noise levels above DNL 45 dB may receive noise insulation. Airport participation in the Part 150 process is voluntary. The typical level of noise in a suburban residential neighborhood that is not near an airport is about DNL 50 dB and an urban residential area is about DNL 60 dB.[13]

FAA administers two programs that fund airports' capital development projects, including noise-related projects. With the creation of the AIP in 1982, FAA had a source of funds to provide grants to airports for noise mitigation projects. Congress reserved a set-aside specifically for noise projects that is currently funded at no more than $300 million per year, but has also expanded over time to include other types of environmental projects including water projects at airports undertaken as a result of an environmental record of decision for an airport development project and

[12]Noise Exposure Maps show noise contours surrounding an airport that depict specified levels of noise and look similar to a land elevation map. The number of operations, runway orientation and use, the type of aircraft, and time of day (because night operations have a higher multiple/weight in calculating DNL) are the fundamental drivers of the size and shape of an airport's noise contour.

[13]DNL is a noise descriptor or metric that takes into account the magnitude of the sound levels of all individual events that occur during a 24-hour period, the number of events, and an increased sensitivity to noise during typical sleeping hours (between 10:00 p.m. and 7:00 a.m.) Although FAA requires the use of DNL for airport analyses, it also promotes the use of supplemental metrics, which according to the Federal Interagency Committee on Aviation Noise, are also useful in addressing various public noise concerns and helping the public to further understand airport-related noise impacts.

certain types of air quality projects.[14] Capital projects in approved NCPs that meet AIP criteria are eligible for AIP grants. Further, airports can be awarded AIP noise grants for some types of noise mitigation projects without an NCP. First, in 2003, AIP noise grant eligibility was temporarily expanded by permitting FAA to provide grants to state and local governments for land use compatibility planning and noise mitigation projects around large and medium hub airports if the airport had not submitted a Part 150 study or had not updated its NCP for more than 10 years.[15] Second, the National Environmental Policy Act of 1969 (NEPA), as amended, requires federal agencies to examine the potential impacts associated with a proposed federal action, including potential noise impacts. As a result, airport development proposals, such as adding new runways or otherwise expanding capacity, must be reviewed for the potential environmental effects as fully as technical, economic and other considerations. Likewise, operational changes, such as changes in flight paths, may trigger a similar review process, depending on the extent of the likely noise impact. These reviews may require airports to prepare an environmental assessment or may require the FAA to prepare an environmental impact statement which could, in turn, lead to a noise mitigation project that is eligible for AIP funding. Airports must match AIP

[14]Pub. L. No. 97-248, §505, 96 Stat. 676 (1982). The AIP is funded by congressional appropriation from the Airport and Airway Trust Fund which is principally funded by a variety of excise taxes paid by users of the national airspace system. Under FAA's current authorization, 35 percent of the annual AIP discretionary budget, up to $300 million, is reserved for airport noise mitigation projects, including noise compatibility planning and implementation of noise compatibility programs, and other approved environmental projects. The upper limit is a new statutory provision enacted as part of the FAA Modernization and Reform Act of 2012 49 U.S.C. § 47117(e)(1)(A). Airports that accept AIP grants for airport development commit to several assurances, include taking steps, to the extent practicable, to restrict use of land adjacent to airports to activities and purposes compatible with normal airport operations. 49 U.S.C. 47107.

[15]In such cases, the airport sponsor must agree and provide necessary documentation. Vision 100: Century of Aviation Reauthorization Act, Pub. L. No. 108-176, § 160(a), 117 Stat. 2511 (2003). This provision was later extended by the FAA Modernization and Reform Act of 2012 to September 30, 2015. Pub. L. No. 112-95, § 153.

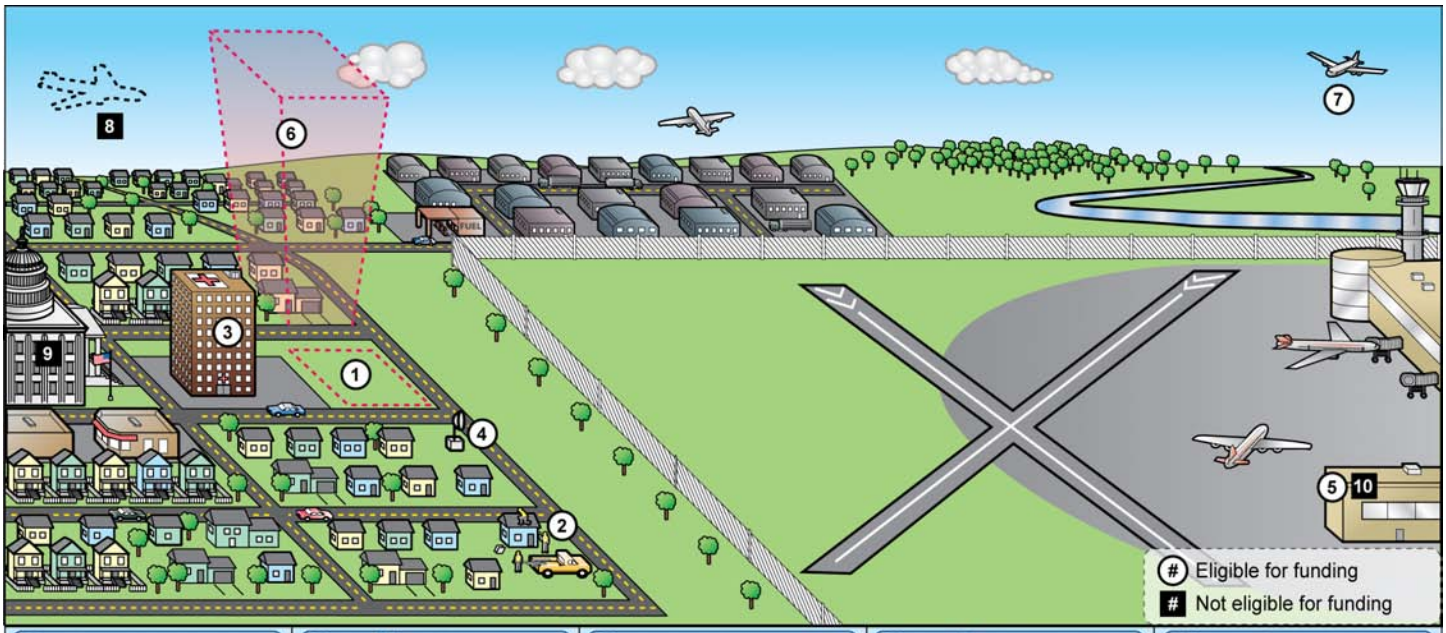
grants to varying degrees, depending on an airport's size.[16] The second FAA funding program for noise mitigation projects is the Passenger Facility Charge (PFC) program.[17] This program allows publicly operated airports to charge passengers a fee and retain these fees for their use on FAA-approved projects, including those that reduce noise. Project eligibility criteria for the PFC and AIP programs are largely the same, although an NCP is not required to use PFC funds for noise mitigation projects. PFC funds can be used to match AIP grants.

There are a variety of projects and actions to mitigate and reduce airport noise that airports may use, some of which are eligible for AIP grants. See figure 1.

[16]FAA's authorizing statute categorizes the nation's primary airports into four main groups based on the number of passenger enplanements—large hubs, medium hubs, small hubs, and nonhubs. The categories are based on the number of passengers boarding an aircraft (enplaned) within the United States. A large hub enplanes at least 1 percent of all systemwide passengers, a medium hub at least 0.25 but less than 1 percent, a small hub at least 0.05, but less than 0.25, and a nonhub less than 0.05 percent. See 49 U.S.C. § 47102 (10), (12), and (23) respectively. Historically, noise mitigation projects were eligible for 80 percent funding under AIP for large- and medium-hub airports, and 90 percent funding at small, non-hub, general aviation, and reliever airports 49 U.S.C. § 47109. Between 2004 and 2011, the federal share for smaller airports was temporarily increased to 95 percent under Vision 100-Century of Aviation Reauthorization Act (Pub.L. No. 108-176), but that increased level expired with the passage of the FAA Modernization and Reform Act of 2012.

[17]49 U.S.C. §40117.

Figure 1: Selected Tools Available to Address Airport Noise



1 Property acquisition

This involves the acquisition of homes or other uses through purchase by the airport operator (or planning authority or others) and their relocation. Land so acquired may be cleared, sold with appropriate easements retained, and reused with compatible uses.

2 Residential noise insulation[a]

Structural noise insulation can lower the indoor noise levels to reduce the adverse impact of airport-related noise on residents. Treatments commonly include installation of acoustic windows, doors and ventilation systems.

3 Public building noise insulation

Similar to residential insulation, but for public buildings such as schools and hospitals.

4 Noise monitoring equipment

A project for noise monitoring may be as modest as a few portable noise monitors or as extensive as a system of a dozen or more fixed monitors linked to a central processing unit, perhaps incorporating air traffic, weather and land use data.

5 Noise compatibility planning

Airport sponsors may conduct studies of noise exposure and develop noise compatibility programs to address noise.

6 Avigation easement purchase

Positive easements allow someone to make noise over someone else's land, and negative easements make it illegal. Easements may be purchased, acquired in exchange for soundproofing of properties.

7 Flight procedures[b]

Air carriers, pilots, FAA's Air Traffic Organization, and airport can develop and implement flight procedures that direct air traffic over lower population areas. For example, planes could be directed to approach the airport following a river instead of over housing.

8 Flight restrictions

Include voluntary measures that limit time of day or type of aircraft for noise reductions.

9 Land use planning/ zoning

State or local governments issue zoning ordinances, which can be used to promote land use compatibility while leaving the land in private ownership, on the tax rolls, and economically productive. Airport authorities can help localities establish compatible ordinances.

10 Community outreach and complaints

Airports and FAA can provide information to surrounding communities about operations, noise, changes, etc.

Source: GAO analysis.

[a]Beginning October 1, 1998, FAA only approves noise mitigation measures for incompatible development existing as of that date.

[b]FAA Modernization and Reform Act of 2012 allows FAA to provide noise grants for airports to complete environmental reviews and assessment activities for proposals to implement flight procedures as part of an airport noise compatibility program (Pub. L. No. 112-95, § 504).

Populations Exposed to Significant Airport Noise Have Declined Because of Improvements in Aircraft Technology

Model for Assessing Global Exposure from Noise of Transport Airplanes (MAGENTA)

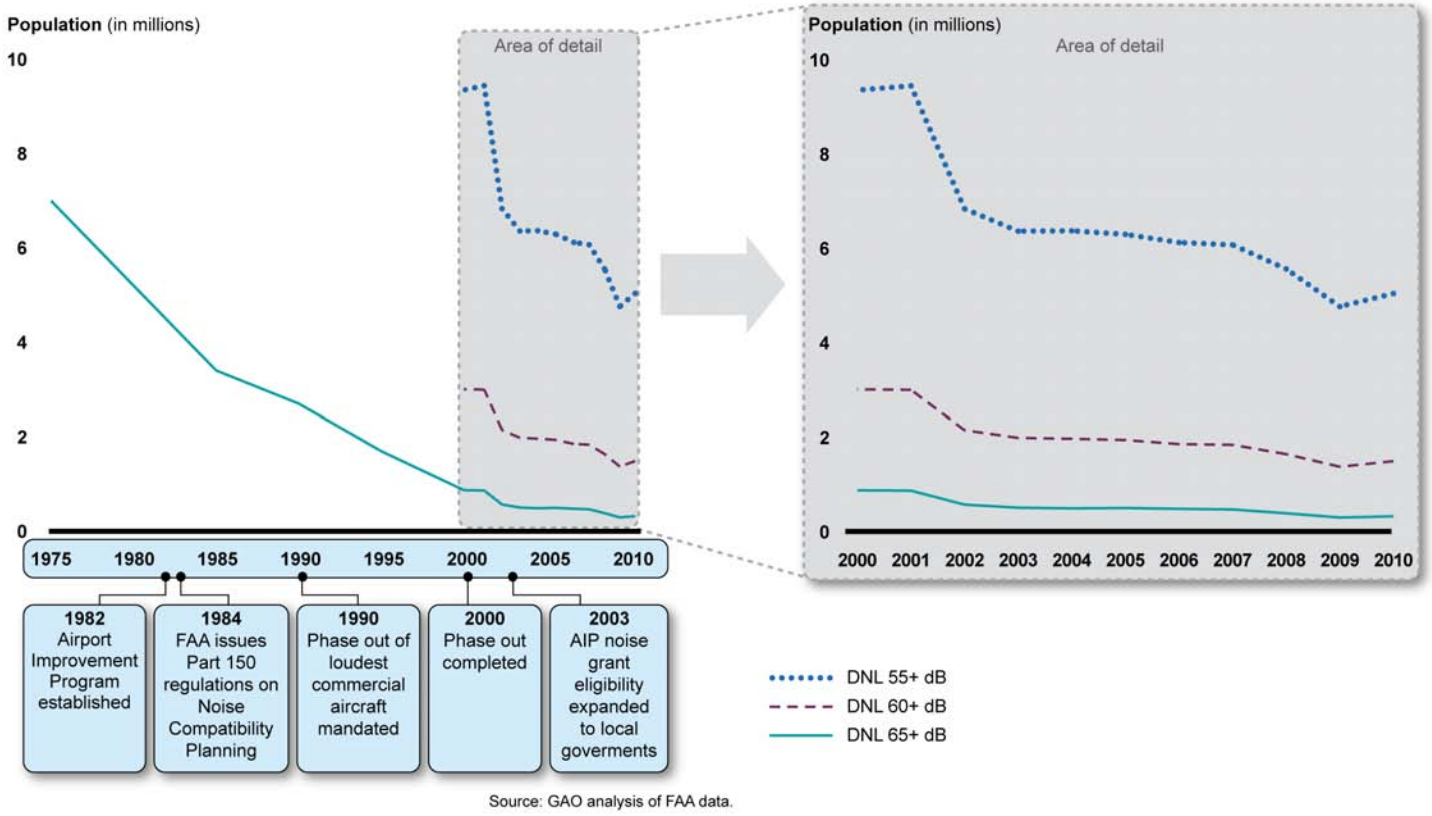
Each year, FAA's estimates of the number of people exposed to airport noise are obtained by computer modeling. This model provides specific estimates of the population exposed to airport noise; this estimate is not a census. The principal model used by FAA in recent years—called the Model for Assessing Global Exposure from Noise of Transport Airplanes (MAGENTA)—relies on

- detailed airport-level information on the numbers and times of aircraft operations
- types of aircraft, flight paths
- census population figures for 94 of the largest airports in the United States.

Using less detailed information, FAA also generates airport-level estimates for an additional 626 airports. FAA calculates an overall estimate of the population exposed to airport noise by adding these individual airport estimates. Using traffic forecast data, FAA can predict future exposure. In 2011, FAA began using a new model—called the Aviation Environmental Design Tool (AEDT)—which can model changes in noise exposure and emissions. Though AEDT provides enhancements to the methodologies, the core noise component of MAGENTA and AEDT remains FAA's Integrated Noise Model (INM). INM is commonly used by airport authorities and consultants in performing Part 150 studies and developing noise exposure maps.

The number of people exposed to airport noise has been steadily declining for several decades, according to FAA. FAA uses a model, called Model for Assessing Global Exposure from Noise of Transport Airplanes (MAGENTA), to calculate a high-level national estimate of the population exposed to different levels of airport noise. MAGENTA uses, among other factors, airport-level information about the number of aircraft operations, types of aircraft, flight paths, and census data for communities near airports (see sidebar). Individual airports may have, through Part 150 studies or through studies undertaken for NEPA compliance, for example, more precise estimates. FAA estimates that approximately 7 million people lived in areas exposed to significant airport noise—DNL 65 dB or higher—in 1975. Through the 1980s and 1990s, this exposure declined to less than a million by the year 2000. FAA estimates that about 309,000 people currently live in areas at or above DNL 65 dB. FAA estimates also show declines in the populations exposed to non-significant airport noise (i.e., below DNL 65 dB). For example, FAA estimates that between 2000 and 2010 the number of people residing in areas with DNL 60 to 65 dB decreased from about 3 million to 1.5 million (see fig. 2). The downward trend in noise exposure has held relatively steady despite overall increases in air traffic. For example, total U.S. operations—including arrivals and departures—went up from approximately 17.4 million in 2000 to 20.8 million in 2011, though some locations have seen declines.

Figure 2: Estimated Population Exposed to Various Airport Noise Levels, 1975 to 2010



Source: GAO analysis of FAA data.

Note: Population exposure estimates include residents that have and have not received noise insulation treatment. Data on DNL 55 dB+ and DNL 60 dB+ were not available for years prior to 2000.

FAA's model is intended to determine the population living within geographic areas exposed to airport noise, regardless of whether the houses or apartments have been sound insulated using AIP, PFC, or other funds. Consequently, some percentage of the population that FAA estimates is exposed to DNL 65 dB or higher lives in structures that have benefited from noise insulation. There are no readily available data to determine this percentage. Thus, FAA's model cannot be used to specifically assess the results of AIP grants.

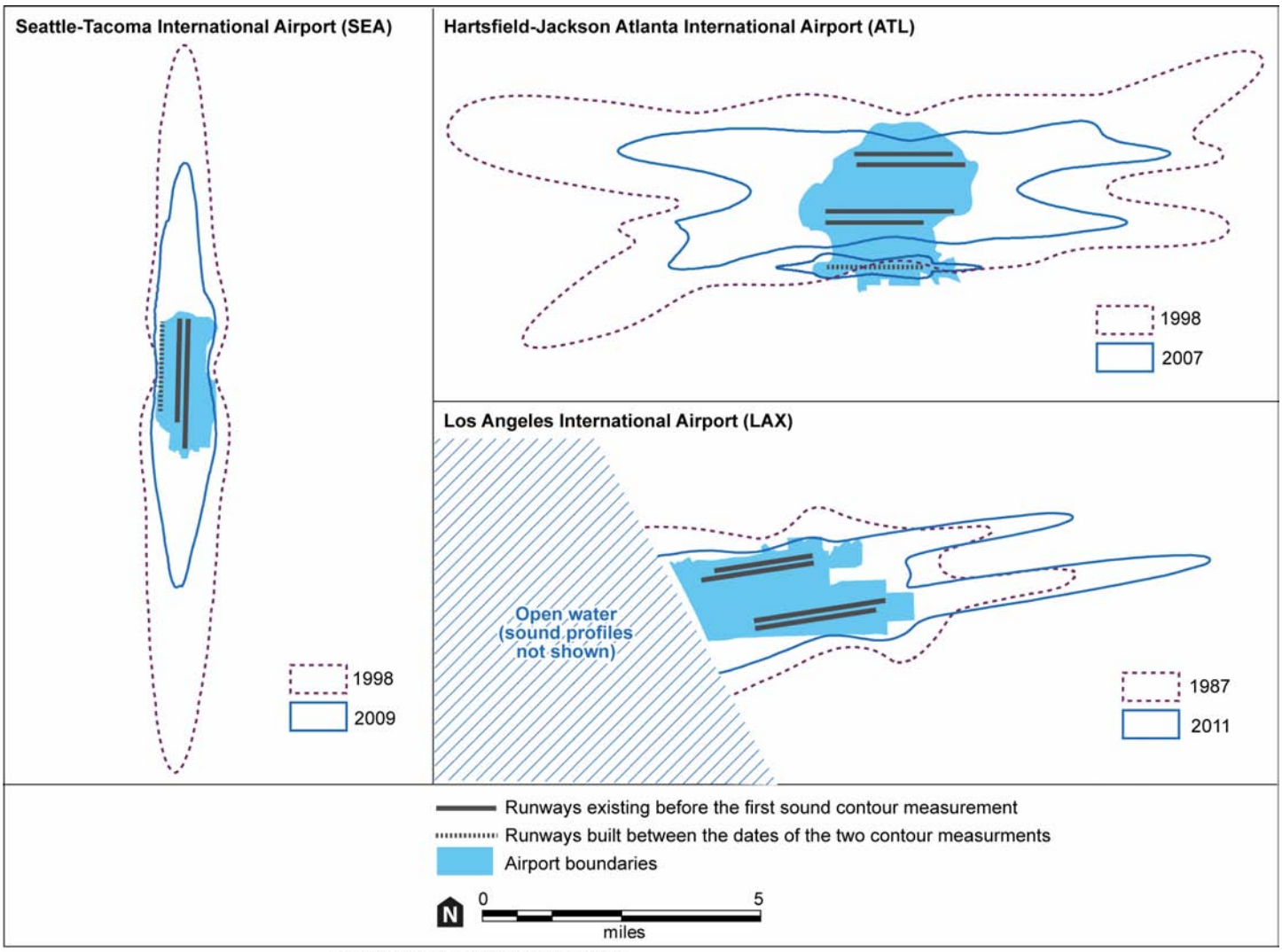
As with the shrinkage in the populations living in noise-exposed areas, the geographic areas exposed to significant noise around airports have

also generally been shrinking based on multiple recent assessments of DNL 65 dB noise contours that we, FAA officials, and others have conducted.[18] Likewise, FAA and airport officials, as well as industry representatives with whom we spoke generally agreed that the DNL 65 dB noise contours around airports have been shrinking. We did not perform an overall assessment of the extent of this change because noise exposure maps are updated at different times at the discretion of individual airports. At all seven of the airports we examined—including two airports that have recently added runways—noise contours have shrunk overall, according to airport officials or our assessments of noise exposure maps for these airports.[19] For example, at Atlanta-Hartsfield airport, the DNL 65 dB contour has become smaller since the 1980s despite a tripling of airport operations. Likewise, at Seattle-Tacoma International airport, noise contours are substantially smaller today than in the past. Specifically, the DNL 65 dB contour decreased in area almost 60 percent, from approximately 14 to 6 square miles, from 1998 to 2009. However, while noise exposed areas have generally become smaller overall, the shapes of some contours may have changed or shifted over time, decreasing significant noise exposure in some areas, but also exposing new areas to significant noise. For example, while the DNL 65 dB area around Los Angeles International airport decreased from approximately 13 to 11 square miles in total area from 1987 to 2011, the shape of the contour changed and now includes different communities (see fig. 3).

[18]GAO, *Aviation and the Environment: Impact of Aviation Noise on Communities Presents Challenges for Airport Operations and Future Growth of the National Airspace System*, GAO-08-216T (Washington, D.C.: October 2007). Airport Cooperative Research Program, *Aircraft Noise: A Toolkit for Managing Community Expectations,* ACRP Report 15 (Washington, D.C.: 2009).

[19]We examined Atlanta-Hartsfield (ATL), Birmingham-Shuttlesworth (BHM), Burbank (BUR), King County International – Boeing Field (BFI), Los Angeles International (LAX), Ontario International (ONT), and Seattle-Tacoma International (SEA). To some extent, comparing noise contour maps over time is a judgmental process because the methods and assumptions used in producing maps at different points in time change. For example, newer maps maybe generated, in part, with data from noise monitors that were not in place when older maps were made. However, to illustrate a broad trend, we compared the DNL 65 dB (Community Noise Equivalent Level, or CNEL, in California) contours of available maps, using Geographic Information System (GIS) analysis when possible. CNEL, like DNL, is used to characterize average noise levels, but uses a somewhat different methodology.

Figure 3: Examples of Decrease in Size of Areas Exposed to Significant Airport Noise (DNL 65 dB)



Source: GAO analysis of airport provided data.

Improvements in aircraft technology, spurred by federal mandates and industry actions to reduce aircraft noise levels, have been the largest contributor to the shrinkage in airport-noise-exposed populations and

noise contours.[20] FAA and airport officials we spoke with generally agreed that the phase out of the loudest aircraft—specifically, stage 1 and stage 2 aircraft weighing over 75,000 pounds—by 2000 and improved aircraft and engine technology are the most significant factors causing noise contours to shrink. For example, reduced air velocity moving through improved engines has reduced engine noise. Likewise, acoustical liners and improved air flap designs have reduced airframe noise.[21] Other factors that may have contributed to decreased airport noise exposure include the implementation of flight procedures that can, for example, direct air traffic over less populated areas during arrivals and departures.

FAA Is Taking Steps to Ensure that Projects Meet Eligibility Criteria, and FAA's Strategic Noise Goal Is Not Linked to the Noise Grant Program

AIP noise grants have been widely used by airports and have provided noise mitigation to thousands of people. However, in recent years, the program has benefited fewer people and FAA has not met its program goals. In light of the shrinking airport noise contours discussed above, FAA's enforcement of grant eligibility criteria—related to noise exposure maps and the assessment of interior residential noise—creates a risk that some noise grants may not have met eligibility criteria, especially in the edges of the noise contour where noise may be below DNL 65 dB. FAA has recently issued guidance to address these areas of grant eligibility criteria, which if followed should reduce the risk of making ineligible grants. In addition, FAA's overall strategic goal for its noise-related activities is not linked to the results of noise grant investments.

Grants Are Widely Used for Noise Insulation Projects and Land Acquisition

Since fiscal year 1982, FAA has provided about $5.8 billion in AIP noise grants to 481 commercial and general aviation airports, reflecting broad participation in the program by airports through the program's history. Specifically, most primary airports have been awarded at least one noise grant. General aviation airports have received $75 million in grants since fiscal year 1982. Airports that have completed voluntary Part 150 studies and have had an NCP approved by FAA have received the majority of

[20]49 U.S.C. § 47528. The importance of technological advancement in reducing airport noise exposure has been comprehensively addressed by the National Academies of Sciences. National Research Council, *For Greener Skies: Reducing Environmental Impacts of Aviation* (Washington, D.C.: 2002).

[21]FAA seeks to achieve source noise reduction through programs such as the Continuous Lower Energy, Emissions and Noise (CLEEN) program as well as through operational and procedure changes.

AIP noise grant funding.[22] As of May 2012, 234 airports had an approved NCP and received grants totaling about $5 billion.[23] Primary commercial airports account for 168 of the 234 approved plans. Of the remaining 66, 62 are larger general aviation or reliever airports.[24] Additionally, grants have been awarded to airports and communities outside the Part 150 framework following statutory changes in 2003 that allow for such grants.[25] During fiscal years 2005 through 2011, grants totaling $336 million have been awarded to 24 airports or communities that do not have NCPs. These grants went to some of the largest airports in the country. For example, the Port Authority of New York and New Jersey secured $134 million in grants for noise insulation of public buildings—mostly schools—near Teterboro, Newark, LaGuardia, and Kennedy airports.

AIP noise grants have funded a range of different types of projects, reflecting FAA and airport priorities, with noise insulation and land acquisitions receiving the most support. From fiscal year 2000 through 2011, out of approximately $3.2 billion total, residential and public building noise insulation projects received approximately $1.7 billion and $456 million, respectively; property acquisition projects received $780 million (see fig. 4). In addition, since fiscal year 2000, FAA has approved PFC applications from 73 airports to collect nearly $2 billion for noise mitigation projects.

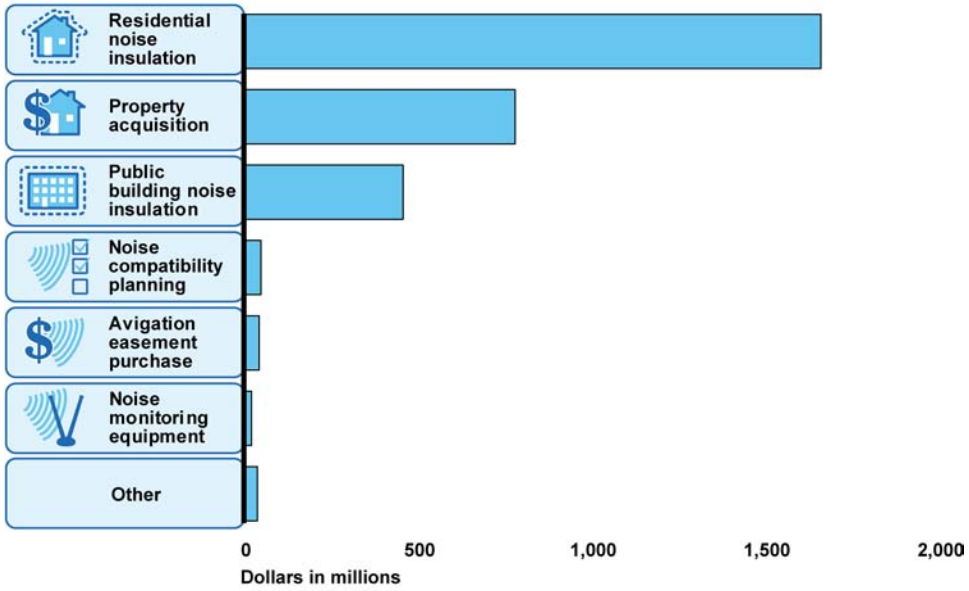
[22]As previously discussed, noise grants can be awarded following FAA approval of a Part 150 NCP, agreements that are made pursuant to certain environmental review studies, or via other statutory provisions that allow certain projects to be funded without Part 150 approvals. FAA's Office of Airport's System of Airports Reporting (SOAR), a central data system, does not track the underlying justification for each grant and airports may have performed both Part 150 and environmental reviews.

[23]101 airports have been awarded AIP noise grants for planning purposes, but have not subsequently been awarded grants for capital projects, such as noise insulation or land acquisition.

[24]A primary airport is a commercial airport with more than 10,000 passenger boardings each year. 49 U.S.C. § 47102(15). A reliever airport is an airport designated by the Secretary of Transportation to relieve congestion at a commercial airport and provide general aviation access to the overall community. 49 U.S.C. § 47102(22). A reliever airport may be publicly or privately-owned.

[25]Vision 100: Century of Aviation Reauthorization Act, Pub. L. No. 108-176, § 160(a), 117 Stat. 2511 (2003)

Figure 4: Airport Improvement Program Projects by Funding Category, Fiscal Years 2000 through 2011



Source: GAO analysis of FAA data.

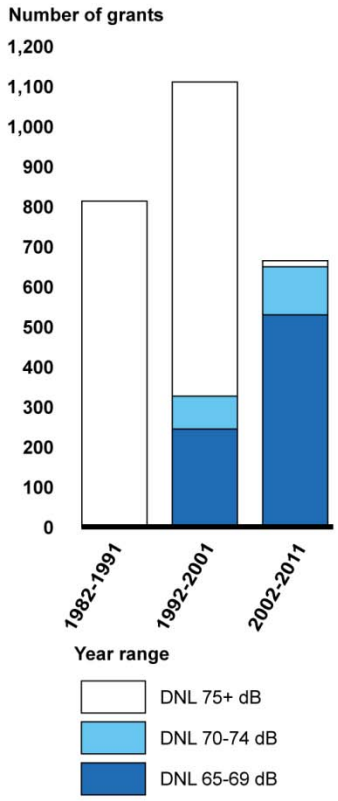
Note: Other includes various project categories listed above, but FAA data do not specify project-type funding levels.

The distribution of funds reflects airport priorities and FAA's project assessments based on AIP grant-scoring formulas as well as judgmental considerations. FAA's grant scoring formula ranks proposed projects in higher DNL areas above lower DNL areas and at larger airports above smaller airports. For example, a proposed residential noise insulation project in the DNL 70-74 dB range would score higher than a project in the DNL 65-69 dB range, regardless of airport hub size. In addition to formula scores, FAA made grant award decisions based on judgmental factors such as input from regional FAA officials—such as FAA's Airports division regional offices or Airports District Offices (ADO)—about an individual airport's capacity to execute its proposals and consideration of FAA regional priorities, as well as to meet national priorities. In recent years, FAA has also considered information on the number of expected beneficiaries—whether residents, students, or other groups—and attempted to fund a mix of grants that will meet an annual beneficiary goal. These beneficiary goals, discussed later in this report, are measured in the number of people expected to benefit from awarded grants. The fiscal year 2012 goal was 15,000 people.

In the first decades of the program, noise grants largely went to projects in areas most significantly impacted by airport noise—generally areas closest to airports—while grants in more recent years have gone to projects in areas that are less significantly impacted, but still deemed to be exposed to DNL 65 dB or higher noise levels (see fig. 5). For example, based on FAA data, all 385 acquisition and noise insulation grants from fiscal year 1982 through 1991 went to projects in DNL 75 dB or higher areas. In the last 12 years, as areas of higher noise exposure were increasingly already addressed, a large majority of grants went to projects in DNL 65-69 dB areas, the lowest significant noise-level eligible for grants under the program.[26] Also, most of the grants for planning activities were awarded in the first half of the program's history. Specifically, through fiscal year 2000, FAA awarded 332 planning grants for approximately $50.3 million. As of 2000, 195 airports had approved NCPs. Since fiscal year 2000, FAA has awarded 117 grants totaling approximately $45.5 million for planning. Since 2001, thirty-nine airports had new NCPs approved by FAA. In some cases, instead of conducting a Part 150 noise study, airports completed environmental impact statements for major proposed development that included developing noise exposure maps that could be used to identify mitigation projects eligible for AIP noise grants.

[26]The DNL of these projects refers to the noise level stipulated for the project by the airport sponsor based on, for example, the noise exposure map and additional documentation required closer to the date of the grant award.

Figure 5: FAA Noise Grants by DNL Range, since Fiscal Year 1982



Source: GAO analysis of FAA data.

Note: 124 grants totaling $124.6 million did not specify the DNL level of the projects ("noise mitigation measures") and are excluded from this analysis.

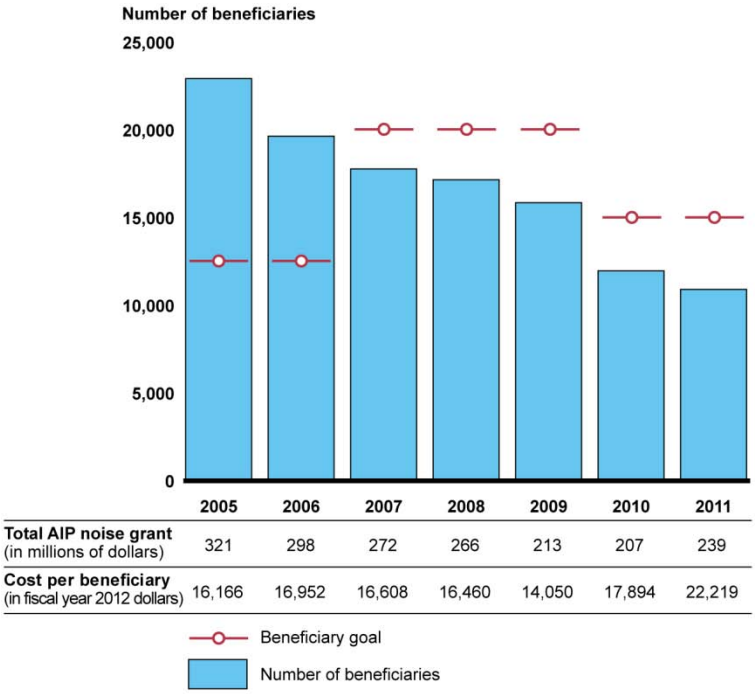
Consistent with the grant trends discussed above, according to FAA and airport officials with whom we spoke, planned projects within individual airport noise programs were prioritized to first address the most noise impacted areas or specific project types. At all of the seven airports we visited, officials indicated that they began mitigation efforts with properties in the noisiest areas that are typically closest to the airport or with schools. For example, Burbank (Bob Hope) Airport in California first insulated most of the schools inside the DNL 65 dB contour before beginning residential noise insulation. At Boeing Field in Seattle, residences in areas above DNL 70 dB were generally insulated first. However, airport officials also noted that project selection can also depend on practical program considerations, not simply noise exposure. For example, before starting a residential insulation project, the airport sponsor must identify and sign up homeowners and complete other

planning steps—all of which take time—and could lead to noise insulation of homes in areas with lower noise before homes in higher noise areas simply because they cleared these steps more quickly.

As part of managing the grant program, FAA sets beneficiary goals for AIP noise grants and tracks progress towards those goals. Beneficiary data, assessed annually, are used as part of FAA's annual budget justification to Congress. These data aggregate the number of people who have been—or are expected to be—relocated following acquisitions, as well as residential and student population soundproofing beneficiaries as a result of the grants awarded that year. Based on this information, noise grants have helped reduce or mitigate airport noise exposure for thousands of people.[27] However, as shown in figure 6, in recent years, fewer beneficiaries have been reached by these grants, FAA has fallen short of its beneficiary goals, and results have come at a higher per beneficiary cost. For example, in fiscal year 2011, the awarded noise grants benefited 10,913 people, short of the goal of 15,000, at nearly 40 percent higher per beneficiary costs than in fiscal year 2005. FAA officials explained that these trends are partly attributable to increasing construction costs due to inflation and more projects in higher cost areas, such as San Diego and Los Angeles. Finally, as discussed more below, these results are not reflected in FAA's overall reporting on the population exposed to significant airport noise.

[27]FAA does not collect information on the results of noise mitigation projects that are funded exclusively with PFC or other local sources of funds. The results FAA reports for AIP grants include accomplishments that came, in part, because of local matching funds, such as PFCs.

Figure 6: FAA Noise Grant Beneficiary Goals, Results and Costs, Fiscal Years 2005 through 2011



	2005	2006	2007	2008	2009	2010	2011
Total AIP noise grant (in millions of dollars)	321	298	272	266	213	207	239
Cost per beneficiary (in fiscal year 2012 dollars)	16,166	16,952	16,608	16,460	14,050	17,894	22,219

Source: GAO analysis of FAA data.

Note: Beneficiaries include both residential and student populations that received noise insulation, relocation, or other benefits. Total Airport Improvement Program noise grants excludes Voluntary Airport Low Emissions grants that do not provide noise beneficiaries.

AIP noise grants have been the most important source of funding for noise mitigation projects, but other funding sources have also been used. Officials representing all seven of the airports we reviewed agreed that AIP funds were of great importance to their noise mitigation programs and most stated that, in the absence of these funds, much less, if anything, would likely have been spent on such projects. For example, Boeing Field does not collect PFCs, and according to airport officials, its noise mitigation program is highly dependent on AIP funds. However, many airports do have other funding sources—primarily PFC funds—that can be used for noise mitigation projects. According to FAA and airport officials, PFC funds are most commonly used to provide the local matching funds required of AIP grantees. For example, officials at five of the six airports that we reviewed that collect PFCs indicated that PFCs were used for noise mitigation projects as a match to AIP grants. PFCs also have been used to supplement AIP funds. FAA officials indicated that PFC funds may be used to speed up the completion of planned noise

mitigation projects in light of limited availability of AIP grants. However, most officials agreed that projects essential to the continued operations of the airport, such as runway rehabilitation and maintenance, were typically a higher priority for PFCs than noise mitigation projects. FAA's existing data system does not distinguish between projects that are fully funded using PFCs from those where PFCs are used to match AIP grants or provide supplemental funding.

Outdated Noise Exposure Maps and Inconsistent Application of Interior Noise Standards Increase Risks for Noise Grant Funds

We found that many of the FAA-accepted maps used to determine project eligibility for noise grants are outdated and could overstate the actual size of the DNL 65+ dB areas around airports, putting some federal grant investments at risk of funding projects that do not meet the eligibility criteria. Following the passage of the Vision 100 Act in 2003,[28] airports have been required to update noise exposure maps when a change in airport operations would indicate that the maps on file with FAA no longer accurately show the size or shape of the airport's DNL 65 dB noise contours and relationship to land uses. Federal regulation defines a significant change as a 1.5 decibel increase or decrease in the DNL for a substantial land area exposed to airport noise. Additionally, if the maps on file with FAA are older than 5 years, then the airport must certify that the maps continue to accurately reflect current conditions.[29] FAA officials explained that maps over 5 years old should be periodically reviewed for potential inaccuracies or changed conditions. In light of the general shrinkage in DNL 65 dB contours, some of the FAA-accepted maps are outdated and therefore could be inaccurate:

- Most maps that could be used for noise grant eligibility are more than 5 years old. According to FAA data, of the 252 airports that have developed noise exposure maps accepted by FAA, 189 maps are

[28]Previously airports had been required to update maps only when there was an increase in the contours that would create a substantial new incompatible land use.

[29]Prior to 2003, program criteria indicated that maps should accurately reflect conditions and be revised when changes occurred, but did not require a revised map when changes resulted in decreases in noise exposure. Part 150 requires preparation of "current" and "forecast" condition maps. The current condition map reflects conditions—operations, fleets, etc.—at the time of the study while the forecast condition map uses estimates of conditions at least 5 years in the future. Either map can be used for AIP grant eligibility provided it accurately reflects conditions.

more than 5 years old.[30] Further, we found 126 airports with maps from 1999 or before, predating the phase-out of stage 2 commercial aircraft by the year 2000. To the extent that the contours depicted by these maps reflect conditions from when these louder aircraft operated, the actual noise exposed area today is likely smaller.

- Many airports with old maps continue to be awarded noise grants for residential noise insulation in DNL 65-69 dB designated areas—the area that would first drop out of grant eligibility because of shrinking noise contours. Of the 28 airports that were awarded noise grants for this purpose in 2010 or 2011, 10 have maps from 2000 to 2005. In addition, nine of the 126 airports with maps from 1999 or before received a total of $87.6 million in grants in fiscal years 2010 and 2011 for residential insulation projects in the DNL 65-69 dB area of the official map.

- Some airports have produced separate noise maps for reasons unrelated to Part 150 noise compatibility planning, such as to meet state requirements or for environmental reviews.[31] In some cases, these maps indicate that noise-exposed areas have decreased, but FAA has not required the airport to update the map used for AIP eligibility. For example, Ontario International's noise mitigation program area is currently defined by a map from 1990, but to meet state noise requirements, the airport produces quarterly noise exposure maps. While the technical details of the FAA-accepted map and these quarterly maps differ, preventing exact comparisons, the area exposed to significant noise in the more recent maps covers very little residential land across a much smaller area than in the 1990 map.[32] The program has received $25.8 million in grants since fiscal year 2007 and has identified $58.4 million in planned AIP-funded noise mitigation projects for fiscal years 2013 through 2017.

[30]18 of the airports that developed noise exposure maps have not developed an NCP, and as will be discussed later in this report, an airport that no longer intends to request noise grants may not update its NCP and therefore, its noise maps.

[31]Noise exposure maps developed as part of environmental reviews can be used for AIP grant eligibility.

[32]While the methodologies used to develop noise maps for California's requirement and for FAA grant eligibility may differ, both types of maps were developed using FAA's Integrated Noise Model. Therefore, each methodology may produce somewhat different noise contours , but the overall trend in the size of the contour should be similar.

These indicators suggest that some risk of funding projects that do not meet eligibility criteria exists. Without current and accurate noise maps, or documentation of an alternative project justification, such as environmental agreements, there is no readily available way to determine how many, if any, FAA-funded projects did not meet the requirement of being inside the DNL 65 dB contour at the time of funding, though FAA officials believe that few, if any, grants have funded projects to date that do not meet the eligibility criteria.[33]

Because an airport has little incentive to update a map that might overstate noise exposure, as it might disqualify projects planned by the airport from future grants, it is important that FAA enforce the requirement that airports maintain appropriately updated or certified noise exposure maps. As illustrated by the examples above, FAA has not always done so. For oversight purposes, FAA's 24 regional and district airports offices are primarily responsible for assessing the continued accuracy of noise exposure maps. In our site visits, we found that FAA district officials were generally informed about noise conditions at airports, potentially obviating the risk of funding ineligible projects, although we also found examples of lax enforcement as well.[34] Some local FAA officials we met with said they had reviewed additional information, such as other noise maps from environmental reviews, and determined that the requested grants targeted projects that remained in significantly noise affected areas. Officials explained during our site visits that these assessments are partially a judgmental process based on their knowledge of an airport's unique circumstances. For example, district officials determined that Seattle-Tacoma airport did not need to update its noise exposure map until after the addition of a third runway, a project that involved a comprehensive environmental review that included developing noise exposure maps. In this case, as in others we identified during our site visits, the maps developed as part of this review were used to meet AIP grant eligibility requirements. However, in our site visits, we found that each district office made different judgments about when to require an updated map. In one case, a district office allowed noise maps that were

[33]The annual data FAA collects on beneficiaries includes DNL designations for the areas in which individuals reside and, to the extent that some grants went to projects that did not meet eligibility criteria as discussed previously, beneficiary results would be overstated.

[34]We did not assess the extent that FAA officials in other districts consulted additional information in similar circumstances nor did we evaluate FAA's review of individual grant requests.

known to be inaccurate to be used in an effort to continue funding an existing airport's noise mitigation program. Several airport officials acknowledged that the maps used in their AIP funded noise program could overstate current exposure. Some airport officials we spoke with explained that they were reluctant to update maps when doing so could limit AIP eligibility for planned projects that the airport has already promised residents. Airport and FAA officials explained that planned project areas, as reflected in noise maps, need to be somewhat stable. They emphasized that while noise exposure is constantly evolving, it takes time to define a program, receive a grant, enroll people, and then design and execute projects. According to these officials, planned projects represent promises to communities, making program stability important. Changing or canceling planned projects because of decreasing noise can create public relations problems for airports, especially since gradual decreases in DNL may be difficult for residents to perceive. In light of these considerations, airport sponsors are unlikely to limit projects to only those that clearly meet program criteria without FAA's insistence. FAA, however, is responsible as the steward of the program for insuring that AIP noise mitigation funds only support projects that meet the program's eligibility criteria. Because the program has limited funding, paying for noise mitigation that is no longer needed takes money away from eligible projects that did not receive funding or from other aviation priorities.

Furthermore, program criteria—including regulations and FAA guidance—require that only homes located in DNL 65 dB areas with interior noise levels above DNL 45 dB can be approved for noise treatment, with limited exceptions, such as neighborhood equity. For example, FAA's principal guidance on AIP implementation explains that the design goal of residential noise insulation should be to achieve a noise level of 45 decibels in all habitable rooms; homes with interior noise levels already below this level should not generally receive noise insulation.[35] This guidance does not explain the method by which a project sponsor needs to assess interior noise levels. FAA district officials told us that the only practical way to determine interior noise levels is with testing. FAA

[35]Homes that are below DNL 45 dB can be treated with some insulation to assure conformity of improvements and perceived equity of application in the project neighborhood. Additionally, within the airport industry, there is some disagreement and confusion about whether the 45 DNL noise level is a design goal or a grant eligibility requirement.

officials indicated that airport sponsors generally conduct interior noise testing on a sample of homes to determine eligibility based on the 45 dB criterion and to assist in designing acoustical treatments, but acknowledged that not all airports and consultants were consistently applying these rules. We found that interior noise assessments to determine project eligibility had been conducted at only three of the six airports we visited with residential noise insulation programs. Two of the three airports tested samples of homes, and officials at one of these airports noted that, to date, no homes have been excluded based on testing results because all had tested above DNL 45 dB. The third airport's program included interior noise assessment for all homes in the DNL 65-69 dB contour to determine eligibility prior to including a home in the insulation program. In that program's current phase—focused on homes in the DNL 65-69 dB contour in the airport's noise exposure map—less than half of the homes qualified for insulation following testing. We also found that testing protocols differed at these three airports. For example, some tests used artificial noise to simulate aircraft noise while other test procedures relied on actual flyovers. The other three airports we visited did not conduct interior noise assessments for eligibility, but did do some testing for project design purposes. However, without information on testing practices at all airports performing residential noise insulation, we cannot determine the extent of the risk to federal investments or how much, if any, AIP noise grant funding has gone to projects that did not meet the eligibility criteria.

Residential noise insulation projects may not have been limited to residences that have interior noise levels above DNL 45 dB because FAA has not consistently and routinely implemented criteria on interior noise level assessment. These criteria do not delineate requirements and protocols in detail. FAA officials explained that implementation has been inconsistent because airport officials, airport consultants, and FAA district officials have different interpretations of existing program criteria. FAA guidance did not, for example, specify testing protocols fully. Further, as with updating noise maps, there are disincentives for airports to rigorously implement existing criteria. For example, as a result of assessments some residents may not receive expected benefits, such as acoustical doors, windows, and ventilation systems. Airport officials often have to deal with community discontent when they explain why some residents are eligible for noise insulation and others are not.

At the time of our review, FAA, recognizing concerns about the age of noise exposure maps and the inconsistent implementation of interior testing criteria, issued program guidance in August 2012 to clarify existing

requirements regarding noise mitigation.[36] According to FAA officials, the guidance reinforces existing criteria on grant eligibility regarding the age and accuracy of noise exposure maps and clarifies the DNL 45 dB interior noise eligibility criteria. The guidance also addresses how interior noise should be measured and will provide for a 3-year transition period that will allow airports to continue with promised noise mitigation projects while better aligning projects slated for 2014 and beyond with the eligibility criteria. It is unclear whether FAA will fund projects during the transition period that do not demonstrably meet program eligibility criteria. FAA previously identified similar concerns about fund use and issued clarifying guidance. Namely, the problems we found regarding potentially inaccurate and old noise exposure maps were also identified in a 2002 internal FAA study.[37] Specifically, the study found that in fiscal years 2000 and 2001, grants were provided to airports based on potentially inaccurate maps from the 1980s and early 1990s that pre-dated the stage-2 aircraft phase-out. The study indicated that, because of shrinking contours, some grants may have funded projects in moderately noise impacted areas (DNL 55 to 64 dB) that should not have been funded. To address this issue, in 2003, and again in 2005, FAA issued program guidance requiring that all grant decisions be based on noise exposure maps that are less than 5 years old or otherwise certified as a reasonable representation of conditions at the airport. Therefore, it will be important that FAA enforce and its district offices adhere to the new guidance to ensure that noise grants are both eligible and targeted to the highest needs.

FAA's Strategic Goal for Noise Reduction Is Not Linked to Noise Grant Program

FAA has established an overall agency goal for addressing airport noise—which covers all noise-related agency efforts, not just the AIP noise grant program—to reduce the population living in significantly noise impacted areas to below 300,000 people nationwide by 2018.[38] This goal

[36]Program Guidance Letter 12-09, AIP Eligibility and Justification Requirements for Noise Insulation Projects (Aug. 17, 2012)

[37]Federal Aviation Administration, "Evaluation of Noise Set Aside Portion of the Airport Improvement Program," (Oct. 1, 2002).

[38]This agency goal is defined as residential populations living in DNL 65+ dB areas. As discussed earlier, the declining trend in the population exposed to significant airport noise are largely attributable to quieter aircraft that result in smaller noise exposure contours. Current exposure is estimated at about 309,000.

is articulated in the Department of Transportation's fiscal year 2013 performance plan, FAA's long-range strategic plan—Destination 2025—and other FAA performance documentation. The intended outcome of reaching this goal is to ameliorate community noise concerns such that they are not a constraint on airport growth. To achieve this goal and outcome, the department and FAA have indicated that people still exposed to significant airport noise levels shall be addressed by AIP noise grants, FAA's largest program to address airport noise, primarily though airport-specific Noise Compatibility Programs.

However, the overall strategic goal is not linked to the results of the AIP noise grants. We have previously reported that linking program performance to overall goals can provide a clear, direct understanding of how program results will lead to the achievement of goals. We have also reported that to determine whether goals are met, an agency should establish performance measures that gauge progress toward desired outcomes and can be used as a basis for decision making.[39] However, with the exception of AIP-funded land acquisition and relocation projects, the types of projects funded by AIP noise grants are not intended to lower the number of people living in significantly noise-impacted areas, but rather mitigate the negative impacts of airport noise exposure.[40] In other words, noise grant results will not help the agency achieve its goal, as articulated. Further, by articulating its goal strictly in terms of the residential population exposed to significant airport noise, FAA has established a strategic goal that does not account for the results of its largest noise program. Specifically, neither the goal nor FAA's use of the MAGENTA tool to measure progress toward that goal by estimating the population exposed to different levels of airport noise reflects AIP noise grant results:

[39]GAO, *Executive Guide: Effectively Implementing the Government Performance and Results Act*, GAO/GGD-96-118 (Washington, D.C.: June 1996).

[40]Through 2005, FAA monitoring of progress towards its strategic goal—namely, annual estimates of the population exposed to significant airport noise using the MAGENTA model—did include population decreases because of noise grant funded acquisition and relocation projects, but these results have not been included in estimates since 2005 because of an administrative error. FAA is currently taking steps to account for relocated populations into estimates again, but expects doing so will lower the overall population estimate only slightly.

- The residential population goal and associated annual estimates of population exposure do not take into account the number of residents benefiting from AIP-funded acoustically treated homes. While these residents continue to live in a noise impacted area, they do so in a quieter home that has benefited from AIP-funded mitigation.

- The goal and measure also do not account for student or other populations using public buildings that may be affected by airport noise and could benefit from the AIP grant program in the future.

As a result of establishing a strategic goal and a corresponding measure of progress that do not account for AIP noise grants results, there is insufficient performance information about the nature and extent of remaining airport noise exposure and the contribution of noise grants in mitigating the impact of that exposure. Specifically, FAA does not know how many residences, schools, or other public buildings are in significantly noise exposed areas or which of those have yet to benefit from noise insulation projects. Without this information, Congress and FAA program managers cannot make fully informed decisions about what the noise grant program can reasonably be expected to address in the future and the extent to which noise exposure remains a constraint on growth. FAA officials acknowledged that the current approach could cause confusion and that there may be some benefit to better distinguishing between the agency's overall noise goal and the purpose of noise grants.

Airports Continue to Plan Noise Mitigation Projects, but of a Changing Nature

The 2011 National Plan of Integrated Airport Systems (NPIAS) report, which includes airport projects from fiscal years 2011 through 2015, shows continued plans for noise mitigation projects, but a drop in the number of projects and the number of airports planning them. Additionally, since the 2001 NPIAS report, the nature of included projects has changed, reflecting airports' progress in implementing their noise compatibility programs, and a corresponding drop in the residential population living in areas around airports deemed significantly affected by noise. The change in the nature and extent of noise mitigation projects in the NPIAS combined with other indicators—such as the age of NCPs, shrinking noise contours, and other factors—points to the possibility of a future decline in the demand for noise project funding. Concurrently, the scope of projects eligible for the set-aside has expanded to include water and emissions projects, whose cost may grow in the future.

Planned Noise Mitigation Project Demand

The NPIAS, which inventories airport projects planned over the next 5 years, is one indicator of future noise grant demand.[41] The most recent NPIAS, issued in 2011, illustrates that, as compared to previous years, fewer airports are planning fewer noise mitigation projects, albeit at a higher total cost. The 2011 NPIAS report to Congress includes planned AIP-eligible projects. The number of airports with planned AIP noise mitigation projects has declined 16 percent since the 2001 report, which covered fiscal years 2001 through 2005, and the number of planned noise projects included in the 2011 NPIAS is nearly half what it was in 2001 NPIAS.[42] Despite the decreased number of planned projects, the anticipated costs for those projects rose to $2.1 billion, or roughly $425 million per year.[43] Table 1 shows the number and estimated costs of planned projects at airports as reported through the NPIAS since 2001.

Table 1: Planned Airport Noise Projects Identified in the National Plan of Integrated Airport Systems since 2001

NPIAS report	Airports with (and number of) noise projects	Planned noise projects estimated cost (in millions)
2001-2005	104 (369)	$ 1,400
2005-2009	88 (283)	1,426
2007-2011	91 (178)	1,581
2009-2013	93 (187)	2,007
2011-2015	87 (188)	2,124

Source: GAO analysis of FAA data.

The nature of the projects in the most recent NPIAS has changed to focus more on projects designated to be in DNL 65-69 dB contours; the total

[41]As a planning document, the NPIAS does not reflect the agency's investment priorities. FAA prioritizes projects through its Airports Capital Improvement Plan (ACIP) which is compiled based on information prepared by regional offices. The project priority ranking included in the ACIP incorporates an airport's size, the purpose of a project (such as insulating homes) and the specific types of efforts (such as insulating homes in the DNL 65 dB contour).

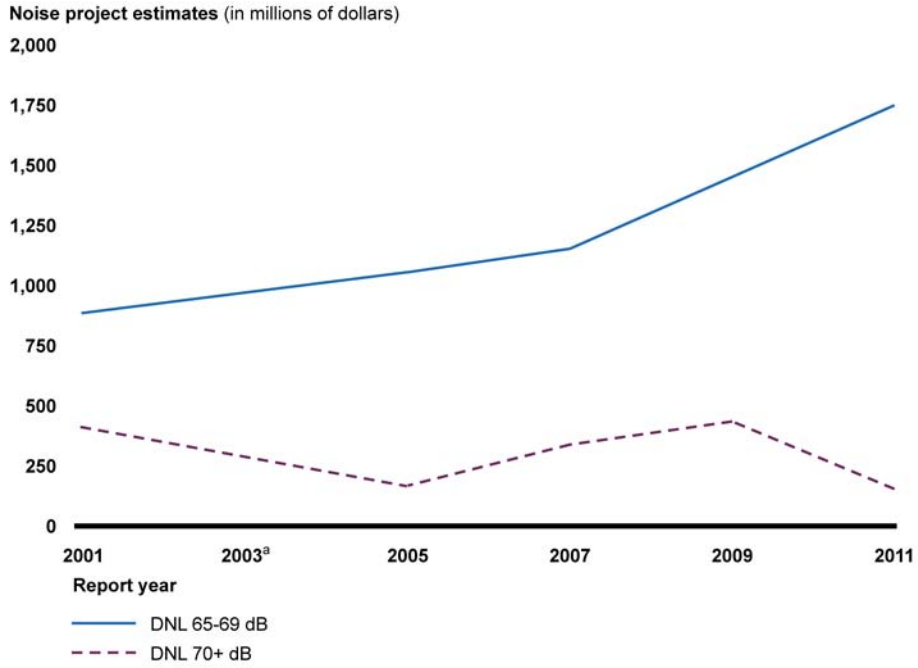
[42]Since the 2007 NPIAS report, individual projects have been grouped together as part of a bigger multi-phased project that had previously been counted individually. The change may have contributed to apparent decreases in the number of projects.

[43]These cost estimates are obtained from airport master plans and state system plans, and includes only AIP-eligible projects to be undertaken by airport sponsors. Cost estimates also don't include contingency costs or normal price escalation.

estimated planned costs for mitigation inside DNL 70-74 dB contours has dropped, and there are no projects for land acquisition or noise insulation inside the DNL 75 dB contour. As discussed earlier, airports generally began with projects in the loudest contour, and the changes reflected in the NPIAS suggest that some airports have completed projects in those contours and are now focusing on projects in areas further away from the airport. In fact, the vast majority of noise-related projects identified in the 2011 plan are focused on the further away DNL 65-69 dB contour—the contour with the lowest noise exposure that is considered significant under federal guidelines and still meets eligibility criteria.[44] This shift of focus may partly explain why the most recent NPIAS has a higher total cost because contours further away from an airport tend to cover larger geographic areas and more homes, though increases in construction costs and other factors likely contribute as well. Figure 7 below shows the change in planned noise mitigation projects as reflected in the NPIAS.

[44]Future demand for noise grants would change if the definition of significant airport noise were to change in the future. FAA, in collaboration with the Federal Interagency Committee on Airport Noise (FICAN) is currently researching whether DNL 65 dB remains the most appropriate measure for assessing airport noise exposure and, as a result of this research, may adopt a different definition of significant airport noise. If this criterion were lowered, then the number of projects eligible for AIP noise grants would likely increase. Our analysis did not assess possible future demand scenarios should this definition change.

Figure 7: Planned Noise Project Estimates by Noise Contour as Reported in the National Plan of Integrated Airport Systems, 2001 through 2011



Source: GAO analysis of FAA data.

[a]No NPIAS was prepared for 2003-2007 because of delays associated with September 11th terrorist attacks and other factors. FAA continued to make AIP noise grants during these years as usual.

Noise Compatibility Programs

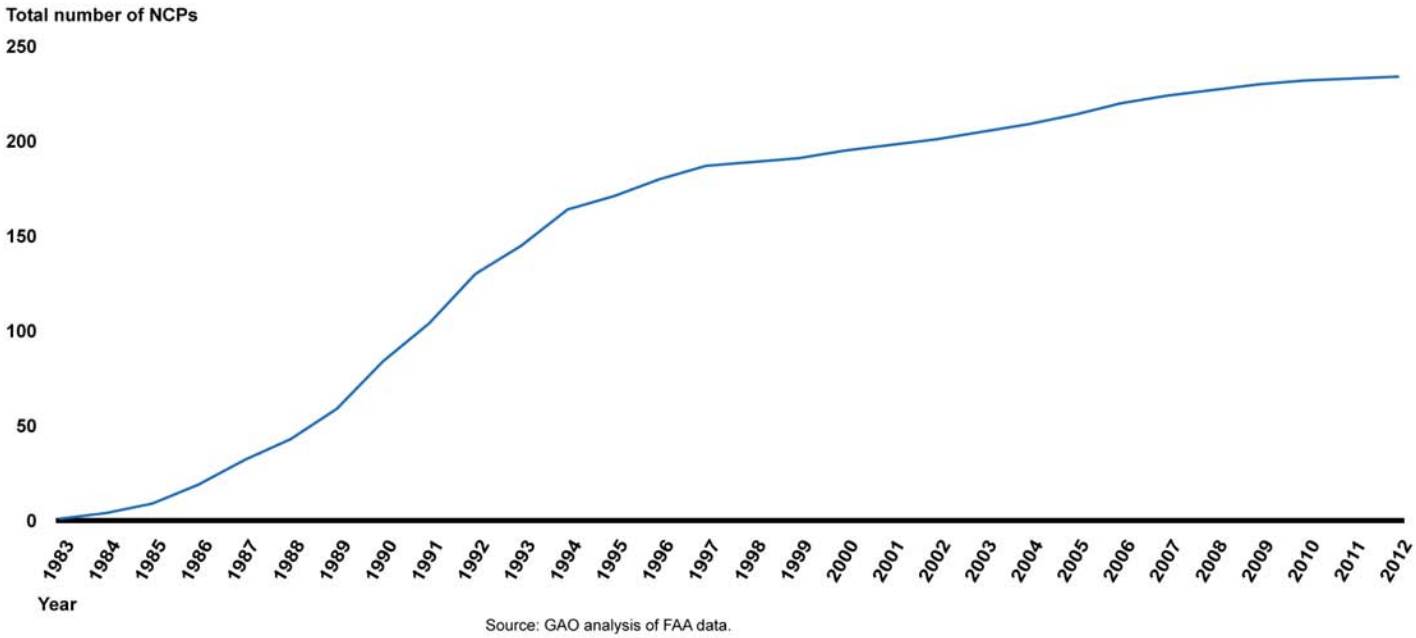
The status of projects in existing NCPs is also an indicator of future noise grant demand and shows potentially lower future demand. Our analysis determined that 102 of 137 airports with NCPs more than 10 years old received no noise grants since fiscal year 2007 and that only 22 of these 137 airports have noise mitigation projects in the 2011 NPIAS, an indication that some of these airports may have completed all of their AIP eligible noise mitigation projects. For several reasons, we could not fully assess the number of outstanding noise mitigation projects that are included in airports' NCPs and that airports intend to seek noise grants for

in the future.[45] However, some airports are nearing the end of their programs. For example, we were told by officials at 4 of the 7 airports that we reviewed that they anticipate completing their noise compatibility programs within about 3 years. At those airports without NCPs, some anticipate completing their public building insulation efforts in the near future. For example, officials from the Port Authority of New York and New Jersey indicated that they expect to complete the school insulation program around their airports within about 3 years.

Furthermore, airports have developed fewer new or updated NCPs in recent years, suggesting that future demand for noise grants may be waning as existing programs mature. As noted previously, since AIP noise grants were established in the early 1980s, FAA has approved NCPs for 234 airports and inclusion in an NCP is a prerequisite for AIP funding, with limited exceptions. About 85 percent (198 of 234) of the airports' NCPs were approved more than a decade ago, and since 2007, only 14 new ones have been approved (see fig. 8).

[45]Although the NCP sets forth an airport's plan to address noise, FAA does not centrally track the funding or completion status of those projects. In addition, because of the program's voluntary nature, airports are not compelled to complete all projects listed in its NCP. An airport's needs or priorities, for example, may change, which could result in some items being excluded from or added to its noise program. And even if an airport still intends to seek noise grants to fund listed projects, FAA is not obligated to fund projects via AIP.

Figure 8: FAA Approval of Noise Compatibility Programs, 1983 to 2011



Source: GAO analysis of FAA data.

Some communities around airports that are exposed to significant airport noise are not likely to receive residential noise insulation. Airports are free to choose not to perform residential noise insulation projects because developing an NCP—a necessary step for the airport to take to receive AIP funds for such projects—is voluntary. According to FAA and as would be expected, 30 years into a voluntary program, airports that are likely to pursue AIP-funded residential noise insulation programs have likely already at least begun to do so. Some of the busiest airports in highly populated areas have chosen not to complete an NCP. For example, officials from the Port Authority of New York and New Jersey indicated that they have not conducted Part 150 studies for any of the five airports under their jurisdiction because a residential noise insulation program would not alleviate noise exposure when people are outside their homes—they noted that noise complaints peak in the summer—and AIP's grant-matching requirements would be financially prohibitive. To the extent that airports without NCPs continue not to participate in the Part 150 program, the people living in areas significantly impacted by airport

noise may never receive the benefits of noise mitigation.[46] This population is about a third of the remaining population that FAA's MAGENTA model estimated is exposed to significant airport noise. Specifically, in 2010, the model estimated 113,000 people (out of 323,000) lived near airports that had not developed an NCP, though this population is not monitored as part of FAA's strategic goal and measurement approach discussed above.

Given the shrinkage of noise contours previously discussed, it is possible that if airports updated older NCPs and noise exposure maps, some noise projects in the current NPIAS—which reflects projects in NCPs—would no longer meet grant eligibility criteria. These smaller noise contours would also reflect that the residential population within areas significantly impacted by noise has fallen dramatically. While there is no way to determine how many planned projects—and the costs of those projects—would no longer meet the grant eligibility criteria, the 2011 NPIAS includes planned projects in areas designated as DNL 65-69 dB at 61 airports. Eighteen of these 61 airports have over $770 million in projects even though their noise exposure maps are more than 10 years old; as noted previously, these maps are likely to overstate current noise exposure and funding to these projects could put federal investments at risk.[47] Together, smaller contours and fewer noise impacted populations, if sustained, suggest that projects approved under updated NCPs could tend to be smaller in scale and scope.

Technology and NextGen

Future changes in aircraft noise and the ongoing implementation of NextGen, could factor into future demand levels for AIP noise grants. FAA and the aviation industry expect aircraft noise levels to continue to fall with ongoing technological and operational advancements. Manufacturers continue to work to provide quieter engines for aircraft and to address noise produced by airframes. In addition, as NextGen is implemented, FAA is making an effort to incorporate changes that will not only improve the efficiency of the system, but also provide for quieter operations. FAA

[46]FAA can provide grants directly to communities around medium and large hub airports where airports have not established an NCP, or where an NCP has not been updated in 10 years. 49 USC § 47141.

[47]Some of these 18 airports may have other noise exposure maps that are more recent because of, for example, an environmental assessment. FAA data would not include these maps.

anticipates that there will be noise exposure reduction benefits resulting from the implementation of some operational changes, such as flight procedures. For example, new arrival procedures will involve less engine thrust, and thus result in quieter approaches. But even with these benefits, changes in flight paths will affect populations that had previously been subjected to less aircraft noise or less concentrated flight paths. This impact, however, would generally remain outside the DNL 65 dB contour and, unless the minimum eligible DNL were lowered, would not affect grant demand. FAA has not yet determined the extent of the impact of such operational changes on airport noise, and whether or how they might change noise contours or lower noise exposure around an airport. In contrast, the increases in air traffic predicted in the next decade, particularly at airports near large, densely populated urban areas, could result in recently contracted noise contours growing larger, which could offset, to some unknown degree, advancements in technology and operations. However, if noise contours reverse course and begin to expand, some of that expansion could be into areas that already have been remediated through previous noise mitigation efforts. In such cases, newly eligible noise mitigation projects would not result. Conversely, new incompatible land uses created by subsequent airport development or operational changes may be eligible for funding consideration.

Noise Mitigation Projects Will Compete with Other Projects for Noise Grants

In the future, more types of environmental projects will be competing for the same amount of AIP noise grant funds. The amount of funding available for noise grants is established by Congress. Recently, Congress has expanded the eligibility for noise set-aside funding to projects not directly related to noise, a change that has effectively decreased the funding available for noise programs in recent years. In addition, the Voluntary Airport Low Emission (VALE) program, which was designed to reduce ground sources of emissions at commercial service airports located in areas failing to meet or maintain EPA ambient air quality standards, became eligible for noise grant funding in fiscal year 2005.[48] Under the VALE program, FAA made 51 grants during fiscal years 2005 to 2011 totaling $108.5 million at 30 airports. The 2011 NPIAS identifies plans for $87.9 million in VALE projects at 11 airports through fiscal year 2015 (about 4 percent of the estimated cost of all AIP eligible noise

[48]GAO, *Aviation and the Environment: Initial Voluntary Airport Low Emissions Program Projects Reduce Emissions and FAA Plans to Assess the Program's Overall Performance as Participation Increases*, GAO-09-37 (Washington, D.C.: Nov. 7, 2008).

mitigation projects listed in the report). FAA airport district office officials, as well as airport officials we interviewed, indicated that VALE projects will continue to be pursued in the future. In addition to VALE, the 2012 FAA reauthorization expanded eligibility for certain water projects at airports undertaken as a result of an environmental record of decision for an airport development project, such as a runway extension.[49] FAA has not estimated future demand for VALE. And because the water project eligibility is new, no such projects appeared in the 2011 NPIAS report and FAA has yet to determine how these projects would be ranked against VALE and noise mitigation projects. Therefore, it is not clear how expanded eligibility for these other kinds of projects for AIP noise set-aside grant funds may affect FAA's ability to meet future noise grant demand.

Conclusions

Today, the number of people in the United States who are exposed to significant airport noise is considerably reduced from when FAA began providing AIP noise grants in the early 1980s. Overall, the program has benefited thousands of people over the years by mitigating airport noise—one of the top environmental concern of airports. However, in the decades since the AIP noise grant program began, airports have completed numerous noise mitigation projects and technology has produced quieter aircraft and better operating procedures. Our review shows that, now and going forward, the need for noise grants may be lower than it was in the past. It is up to FAA to ensure that

- future noise grants are directed to the remaining projects that meet the grant eligibility criteria,
- the agency's goal for addressing airport noise aligns with the current airport noise problem, and
- the measures used to assess progress accurately reflect FAA's programmatic results.

As implemented, there is a risk that some federal investments in noise mitigation went to projects that may not have met existing eligibility criteria, and if not effectively addressed, this risk will continue in the

[49]Pub. L. No. 112-95, §145, 126 Stat. 11, 30 (2012).

future. FAA has not uniformly enforced the accuracy of noise exposure maps and has inconsistently applied program criteria for interior noise assessments. This diminishes Congress's and the public's assurance that federal funding has been or will be spent appropriately and, to the extent that some misapplication of AIP grants to projects has occurred, creates the risk that more meritorious projects at other airports may not have been funded. It is encouraging that FAA issued guidance to more clearly articulate the program's eligibility criteria and has called upon airports to review their noise programs to better ensure the eligibility of planned projects. If properly implemented and followed, this guidance should reduce the risk of federal investment in ineligible projects. However, since some of these problems have persisted despite previous FAA guidance, it is too soon to tell if FAA's current actions will be successful.

Currently, FAA's overall goal for its noise efforts is to reduce the population exposed to airport noise above DNL 65 dB to less than 300,000 people by 2018 and FAA measures progress by estimating the residential population exposed to this noise level. However, there are shortcomings to this approach. First, FAA's overall goal is disconnected from FAA's primary tool to address noise—the AIP noise grants—because it does not reflect the results of these grants. Beneficiaries of noise insulation projects continue to reside or attend school in DNL 65 dB or louder areas even though the noise exposure has been mitigated for them. Second, approximately one-third of the estimated remaining population exposed to significant airport noise resides near airports that have yet to and may never establish an NCP. After 30 years, it appears unlikely that this population will ever be reached by the current program. FAA's strategic goal and measures do not account for this population. To more effectively manage the program and target federal funds, goals and metrics should align with the nature and extent of the remaining airport noise problem. At present, however, the nature and extent of the remaining airport noise problem are ill-defined. Key steps to effectively address airport noise include

- understanding the nature and extent of the current problem,
- determining appropriate goals to address the problem,
- establishing metrics to measure progress, and
- using this information for decision making.

Effective program management should increase the effectiveness of the current grant program and provide a more complete picture of noise grant results. Though a number of airports continue to have planned noise mitigation projects, after 30 years of funding noise grants, it is reasonable to question whether the program may remain relevant for only a limited period in the future or need to be reformed to better target emerging needs. Increased knowledge about the problem and the use of noise grants as a solution should help Congress and FAA chart the most appropriate course for the future of the AIP noise program.

Recommendation for Executive Action

To better ensure that federal investments effectively address the remaining airport noise problem and to more fully demonstrate the results of AIP noise grants, the Secretary of Transportation should direct FAA to take the following two actions:

- Establish a strategic noise reduction goal that aligns with the nature and extent of airport noise and targets the agency's noise grant program.
- Establish performance measures to assess progress toward this goal that better demonstrate the results of the program and provide Congress and FAA's program managers with information to gauge progress and make programmatic decisions.

Agency Comments and Our Evaluation

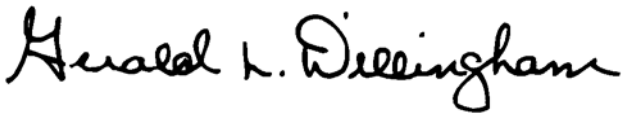
We provided a draft of this report to the Department of Transportation (DOT) for its review and comment. DOT and FAA officials provided technical comments that we incorporated as appropriate. In addition, in emailed comments to us, DOT offered several observations on our report. First, DOT highlighted that the noise grant program is not the only means by which airport noise has been reduced, noting that other FAA initiatives and industry actions, especially those that led to improvements in aircraft engine technology are primarily responsible for airport noise reductions. We concur with this position but, as indicated in the report, the noise grant program is the largest FAA expenditure to address noise. Second, DOT officials stated their belief that noise grants only go to projects that meet eligibility criteria unless otherwise justified. However, as noted in our report, in light of the overall decline in airport noise, the age and potential inaccuracy of some noise exposure maps, and FAA's inconsistent implementation of eligibility standards, we believe there is an increased risk for noise grants and have noted the limited circumstances under

which grants can be made to projects that don't meet these criteria. FAA's recent issuance of guidance clarifying eligibility criteria is commendable and needed because, if properly implemented, it will address this risk. Finally, DOT noted that FAA sets annual beneficiary targets for noise grants, tracks progress toward these targets, and reports these results to Congress. We acknowledged these actions in our report, but these targets, results, and reporting are not linked to FAA's strategic noise goal and measurement approach nor are they included in FAA's reporting on progress toward that strategic goal. Without a linkage between the results of FAA's most costly program to address noise and FAA's strategic goal for addressing noise, Congress, FAA, and the taxpayers do not have sufficient information on the value of these continued investments.

FAA reviewed our recommendations and agreed to consider them for action.

We are sending copies of this report to the Secretary of the Department of Transportation, the Administrator of the Federal Aviation Administration, and appropriate congressional committees. This report is also available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-2834 or dillinghamg@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix II.



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Director, Physical Infrastructure Issues

Appendix I: Objectives, Scope, and Methodology

This report addresses the following objectives: (1) how airports' noise exposure has changed since federal noise grants were first funded, (2) how Airport Improvement Program (AIP) grants have been used by airports to mitigate noise and what have these grants achieved, and (3) the likely future demand for AIP noise set-aside grants.

To describe how airport noise exposure has changed over time, we reviewed available literature and met with industry organizations. For the purposes of this report, we used the currently accepted definition of significant airport noise (e.g., DNL 65+ dB). We interviewed officials from the Federal Aviation Administration's (FAA) Office of Airports and the Office of Policy, International Affairs and Environment at FAA Headquarters, and at 4 Airport District Offices in 3 of 7 FAA regions. We also performed a Geographic Information Systems (GIS) analysis of noise contours at selected airports to illustrate the changes to areas exposed to airport noise over time. To assess how the population exposed to noise has changed over time, we obtained information from FAA's MAGENTA noise model. We did not independently assess the MAGENTA model itself. FAA uses this model to estimate the population exposed to significant airport noise. The MAGENTA estimates for noise exposure are broadly used and generally considered accurate for the purposes intended.

To assess how AIP grants have been used for noise project planning and implementation, we obtained and analyzed data in FAA's System of Airport Reporting (SOAR). This database includes detailed information about AIP grants, Passenger Facility Change (PFC) approvals, project types, and other airport information. We assessed the reliability of SOAR data by (1) performing electronic testing of required data elements, (2) reviewing existing information about the data and the systems that produced them, and (3) interviewing agency officials knowledgeable about the data. We determined that the data were sufficiently reliable for the purposes of this report. We met with sponsors of 7 airports in three regions to discuss the development and implementation of their noise compatibility programs. These airports were judgmentally selected to provide information from airports of different sizes, different parts of the country, and at different points in implementing their noise projects. Information obtained from these airports is for illustrative purposes only, and cannot be generalized for all airports. To understand how the results of AIP noise grants have contributed to FAA's progress towards achieving

its strategic noise goal, we assessed FAA's use of its MAGENTA noise model compared to GAO criteria.[1]

To assess future demand for AIP noise grants, we reviewed planned projects in the National Plan for Integrated Airport Systems (NPIAS), FAA's primary tool for identifying potential airport capital projects. The NPIAS data is part of FAA's SOAR reporting system. We also obtained information about the dates of airports' Noise Compatibility Programs (NCPs) and noise exposure maps from the Office of Airports at FAA Headquarters. For the purposes of this report, we used the currently accepted definition of significant airport noise (e.g., DNL 65+ dB)—as does the NPIAS—to identify potential future noise projects. The results of our analysis of future demand for noise grants would change if the definition of significant airport noise changes in the future. To understand the implementation and future of airport noise programs, we reviewed noise programs at the 7 airports indicated above and discussed them with the 4 Airports District Offices which oversee those airports.

We conducted this performance audit from October 2011 through September 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[1]GAO, *Executive Guide: Effectively Implementing the Government Performance and Results Act*, GAO/GGD-96-118 (Washington, D.C.: June 1996).

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition to the individual named above Paul Aussendorf (Assistant Director), Amy Abramowitz, Hiwotte Amare, Elizabeth Curda, Jeff Heit, Dave Hooper, Christopher Jones, Delwen Jones, John Mingus, SaraAnn Moessbauer, Josh Ormond, and John Stambaugh made significant contributions to this report.

U.S. Department of Transportation
Federal Aviation Administration

Memorandum

Subject: **ACTION:** Program Guidance Letter 12-09
AIP Eligibility and Justification Requirements for Noise Insulation Projects

Date: August 17, 2012

From: Manager, Airports Financial Assistance Division, APP-500

Reply to Attn. of: Nancy S. Williams
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To: PGL Distribution List

The reason for this PGL is to reconfirm the two-step requirement for AIP eligibility for residential and other noise insulation projects. The AIP Handbook interprets 14 CFR Part 150 to require that structures be located in the existing or forecast yearly day-night average (DNL) 65 decibel (dB) noise contour (or, under limited circumstances, a lower dB noise contour formally approved by a local government to determine compatibility of residences), *and* that noise insulation project be designed to achieve interior noise levels of 45 dB to qualify for federal funding.

1. Two-Step Requirement for AIP Eligibility.

FAA has become aware that there may be confusion and ambiguity in our guidance about the second step, that interior noise levels must be 45 dB or greater for a residence or other eligible structure, such as a school, to be eligible for AIP funding for noise insulation.

Title 14 CFR Part 150, Airport Noise Compatibility Planning, establishes the amount of noise reduction (NLR) that must be achieved through noise attenuation measures for a residence or school to be considered normally compatible with airport noise. See, Note 1 of Table 1, 14 CFR Part 150, Appendix A.[1] FAA Order 5100-38, the original AIP Handbook (Handbook) dated November 24, 1986 reflected this NLR requirement as a design objective for noise insulation projects. It clarified that residential noise insulation must be designed to achieve a 50 dB interior noise level when the project is completed (paragraph 711.) Later revisions to the Handbook lowered the design objective to 45 dB in all habitable rooms. The current Handbook continues to require that a residential noise insulation project be in the existing or forecast DNL 65 dB contour and be designed to

[1] It states that residences and schools are not normally considered compatible with airport noise levels above 65 DNL dB unless insulation projects to reduce outdoor to indoor noise by at least 25 to 30 dB have been incorporated. "Normal residential construction can be expected to provide a [noise level reduction] of 20 dB, thus the reduction requirements are often started as 5, 10, or 15 dB over standard construction…"

achieve target interior noise levels of 45 dB in habitable rooms to be eligible for AIP funding.[2] Accordingly, residences and schools that already have interior noise levels of less than 45 dB are not generally eligible for AIP funding, with some equitable exceptions.

2. Age of Structure.

The policy that the FAA will consider funding eligibility for noise insulation measures under 14 CFR Part 150 only for noncompatible development which existed as of October 1, 1998, remains unchanged. New incompatible land uses created by subsequent airport development may also be eligible for funding consideration.

3. Upcoming Revisions to FAA Advisory Circular 150/5020-1, Noise Control and Compatibility Planning for Airports.

The revision to FAA Advisory Circular 150/5020-1, Noise Control and Compatibility Planning for Airports is not part of this PGL.

4. APP-400 Review of Residential Sound Insulation Programs.

In FY 2013 The Office of Airport Planning and Programming will begin a review of regional compliance with this guidance to ensure program consistency.

5. Revisions to AIP Handbook.

Attachment 1 to this PGL contains the replacement paragraph 812 Noise Insulation Projects of FAA Order 5100-38C, the AIP Handbook, in its entirety, effective as of the date of this PGL.

6. Requirements for Ongoing Noise Insulation Programs.

Specific requirements for ongoing noise programs for Fiscal Years 2012, 2013, and 2014 have been developed. Attachment 2 details the specific requirements for ongoing noise insulation programs.

7. Communication with Residents and Others Impacted by Noise Insulation Programs.

Early communication with all residents that are in the DNL 65 dB contour is important. The Sponsor must explain the two-step requirements to residents that are *currently* in the DNL 65 dB contour.

Further, it is important for the residents to understand that if noise contours change, a neighborhood that was previously identified as potentially noise impacted may no longer be impacted. The sponsor must also explain how the program will be phased. The Sponsor must let residents know that final determinations of which residences will be noise insulated will only be made after sampling and testing has been completed. Clearly explaining the noise insulation

[2] "The design objective of a residential noise insulation project generally should be to achieve the requisite NLR when the project is completed. (This is mathematically equivalent to achieving a DNL of 45 dB in all habitable rooms.)" FAA Order 5100.38C, Paragraph 812b(1). This is mathematically equivalent to achieving a DNL of 4 dB because, application of 25 dB NLR to the 70 yearly DNL range in Table 1, Appendix A, Part 150, and application of 30 dB NLR to the 75 yearly DNL, both result in interior noise levels of 45 yearly DNL.

program process to residents will help prevent unrealistic expectations of residents who may later be found to be outside of the noise impact areas or whose homes already provide sufficient sound insulation.

8. Use of the Term ADO

For the purposes of this PGL, the term ADO means the FAA Airports District Office or Regional Office in regions that do not have Airports District Offices.

9. Applicability

The provisions set forth in this Program Guidance Letter do not apply to noise insulation projects for which construction has been completed. Construction being completed means that final payment has been made to the contractor doing the sound insulation work on the residence or public building. Paragraph 580 concerning environmental mitigation projects, which generally refers to Chapter 8 of the existing AIP Handbook on noise compatibility projects, does not change.[3]

10. Relationship to Type of Funding

The requirements of this PGL apply to AIP grant funded projects. Under 49 USC §40117(a)(3)(D) and (E), PFC funds may be used for noise compatibility planning and project, although the project only has to be ***approvable*** under 14 CFR Part 150, and does not necessarily have to have been ***approved*** under 14 CFR Part 150. This means that an airport does not have to have a 14 CFR Part 150 Record of Approval in order to conduct residential sound insulation projects using PFC funds.

Projects that are funded with airport revenue must meet the requirements of the 49 USC §47107(b)(1) and §47133; Grant Assurance 25, and the FAA policy for revenue use as described in 64 Federal Register 7696[4]. In general, the requirement is that the revenue must be used for the capital and operating expenses of the airport or local airport system. Sound insulating structures that are not adversely affected by aircraft noise would not be considered a capital or operating expenses of the airport.

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[3] Consistent with past policy and interpretation of paragraph 580, airport sponsors have a reasonable period of time to implement substantial multi-year noise insulation projects that were a condition of approval in a record of decision for an AIP funded airport development project. Where structures in the project area no longer meet the qualifying criteria, airport sponsors may seek concurrence from ARP-1 that circumstances warrant special consideration. The sponsor must show that flexibility is needed to reasonably fulfill commitments in an environmental record of decision.

[4] The Federal Register Notice and grant assurances are published on the FAA website at the following address: http://www.faa.gov/airports/airport_compliance/
Title 49 of the United States Code is published on the U.S. House of Representatives website at the following address: http://uscode.house.gov/download/title_49.shtml

Attachments:

1. AIP Handbook Replacement Paragraph 812
2. Handling of Noise Insulation Programs Currently Underway

812. NOISE INSULATION PROJECTS.

a. Regulatory Background.

The Aviation Safety and Noise Abatement Act of 1979 (ASNA) directed FAA to identify land uses that are normally compatible with various noise exposure levels.

In response, FAA adopted the 14 Code of Federal Regulations Part 150, Airport Noise Compatibility Planning (14 CFR Part 150.) The adoption of the regulation was published in the Federal Register Notice 46 FR 8316 on page 69, on January 26, 1981.

14 CFR Part 150 under 49 US Code serves as the guidance for much of the AIP-funded noise compatibility program. 14 CFR Part 150 includes "Table 1 - Land Use Compatibility With Yearly Day-Night Average (DNL) Sound Levels" that defines compatible and noncompatible land uses and related structures.

b. General Requirements for AIP funding of Noise Insulation Projects

1. Only a noise-impacted noncompatible structure that is in the DNL 65 dB contour *and* the existing interior noise levels are 45 dB or greater with the windows closed can be included.

A noise-impacted noncompatible structure - typically a residence, place of worship, school, or hospital – must be both in the DNL 65 dB contour and be experiencing existing interior noise levels that are 45 dB or greater with the windows closed. (For schools, the 45 dB measurement may be based on the number of hours of the school day.) 46 Federal Register, page 8316, January 26, 1981, establishing the interim rule for Part 150 included the interior noise level. This was further clarified in 1992 by the Federal Interagency Committee on Noise (FICON) findings of 45 dB to be the interior noise level that will accommodate indoor conversations or sleep.[1] The 45 dB standard has been adopted by FAA for interior noise.

There are three ways that a structure can be considered for noise insulation.

A. The structure is located within a currently valid existing or forecast day/night average sound level (DNL)[2] 65 decibel (dB) or higher contour associated with operations at an airport on the FAA-accepted Noise Exposure Map (NEM)[3] and is in an approved program measure[4]. The

[1] Table 3.4 and Section 3.2.3 of the 1992 FICON report states that the indoor noise level of DNL 45 dB is identified as the protective level to protect speech interference.
[2] The FAA recognizes CNEL (community noise exposure level) as an alternative noise metric for California. For purposes of this guidance the metric DNL and CNEL can be used interchangeably.
[3] 14 CFR Part 150 section 150.21
[4] Per 49 USC 47504(c)

NEM is normally developed by an airport sponsor as part of a Part 150 study.

B. The structure is included in a noise mitigation program prepared by a State or local jurisdiction surrounding a medium or large hub airport that either has not prepared a 14 CFR Part 150 program or does not have an updated 14 CFR Part 150 program[5]; or

C. The structure is an adversely affected school or hospital. Under 49 United States Code §47504, an adversely affected school or a hospital may also be eligible; whether or not it is part of an airport sponsor's NCP.

Under 14 CFR Part 150, the FAA adopted the standard of DNL 65 dB, as the Federal land use compatibility guideline at which residential land uses are considered non-compatible with airport noise.

2. A lower local standard (e.g., DNL 60 dB) may be used for Part 150 purposes if the standard is formally adopted by the local jurisdiction for land-use compatibility and the airport sponsor has incorporated it[6] (although the interior noise level standard of 45 dB does not change). Where a lower local noise standard is adopted outside of the Part 150 process, 49 USC 47141 requires that the land use compatibility plan be developed cooperatively by the airport sponsor and local jurisdiction to be eligible for a grant. Additional information on these requirements is addressed in Paragraph 810.b. **Noise Exposure Maps used for Noise Insulation Programs must be Current.**

Noise contours change for many reasons, such as changes to aviation activity and changes to air traffic procedures. By law, FAA must rely on only those noise exposure maps that reflect current or reasonably projected conditions[7]. In 2005, FAA published Program Guidance Letter 05-04[8] which addressed the requirement for currently valid noise contours. In general, NEM's less than 5 years old are considered current, unless conditions have created a significant change that would affect noise contours.

NEM older than 5 years old must be certified by the sponsor and updated as required as discussed in the PGL.

The ADO must verify that the NEM showing the DNL 65 dB contour reflects the current or projected operational conditions at the airport and associated

[5] Codified in 49 USC 47141.
[6] 14 CFR Part 150, Table 1 in Appendix A.
[7] 49 USC 47503
[8] Program Guidance Letter 05-04, About §§189, 322, and 324 in Vision 100-Century of Aviation Reauthorization Act: Guidance For Funding Mitigation Projects for Aircraft Noise less than 65 DNL, Public Availability of Noise Exposure Maps, and Determining Eligibility Of Airport Noise Compatibility Projects In Areas of Significantly Reduced Noise Exposure, June 3, 2005. Available online at http://www.faa.gov/airports/aip/guidance_letters/

noncompatible land uses.[9] The ADO must place a copy of the verification in the project files.

3. Only Eligible Sponsors can participate in Noise Insulation Programs.

Eligible sponsors include units of local government having jurisdiction over the project location, airport sponsors, and special purpose units of local government (e.g., school districts and hospitals).

4. Acquisition of Noise Easements is not required.

Sponsors are encouraged to obtain a noise easement in return for the noise insulation provided by the project, but it is not an AIP requirement. (See Paragraph 808).

c. Specific Eligibility and Justification Requirements and Limitations for a Noise Insulation Projects.

1. Specific Eligibility and Justification Requirements for Projects.

In order for a structure to be funded with AIP grant funding, the sponsor must demonstrate that the structure meets all of the criteria listed in Table 1.

Table 1 Structure-Specific Eligibility and Justification Requirements

The following requirement …	As described further …
The structure must be in the 65 dB or higher contour.	The structure must be located in a noise contour as described in paragraph b-1 and be current as described in b-2.
The interior noise level must be 45 dB or greater.	The windows-closed interior noise level of the structure must be 45 dB or greater. The measurement of interior noise levels is an average for all habitable spaces in a particular residential unit, or educational spaces in a school. A structure may have interior noise levels that are already below 45 dB. This depends on the type of construction (i.e., predominant building cladding and roofing materials, type of

[9] 49 USC 47503 (b) requires submission of revised noise maps if a change in the operation of the airport would establish a substantial new noncompatible use, or would significantly reduce noise over existing noncompatible uses that is not reflected in the existing conditions map or forecast map currently on file with the FAA. The requirement for determining currency of an NEM is addressed in 14 CFR Part 150.

The following requirement …	As described further …
	thermal insulation, type of doors and windows, etc.) Structures with an interior noise level that is less than 45 dB are not eligible for noise insulation even though they may be within the DNL 65 or higher dB contour.
Interior Noise Testing is based on Windows Closed.	All testing is done with the windows closed. This requirement applies whether or not the structure has a ventilation system or not.
Noise Insulation Measures are Limited to Specific Items.	Noise insulation measures are limited to window and door replacement, ceiling insulation, caulking, weather-stripping, and central air ventilation systems if the structure does not already have a central air ventilation system. The use of other measures is not allowable unless the ADO has approved the use of the measures in advance. In this case, the ADO must keep a copy of the Sponsor's request for use of other measures and a copy of the ADO approval of the request in the project files
The structure must have been constructed before October 1, 1998.	The structure must have been built prior to October 1, 1998[10] unless the sponsor has demonstrated to the ADO that no published noise contours existed at that time[11]. New incompatible land uses created by subsequent airport development may also be eligible for funding consideration.

[10] October 1, 1998 is the date included in the publication of the FAA Final Policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects, Federal Register: April 3, 1998 (Volume 63, Number 64), Rules and Regulations, Page 16409-16414 "As of October 1, 1998, the FAA will approve under 14 CFR part 150 (part 150) only remedial noise mitigation for existing noncompatible development and only preventative noise mitigation in areas of potential new noncompatible development"

[11] Per the Federal Register FR Volume 63, Number 64, Page 16409-16414.

The following requirement …	As described further …
There must be at least a 5 dB noise level reduction.	Because the design objective for using AIP funds is to provide a discernable benefit to residents, the sponsor must demonstrate that a least 5 dB[12] noise level reduction will be achieved. If for any reason the 5 dB reduction cannot be achieved, the sponsor must provide a written request to the ADO. The ADO must receive APP-1 concurrence to proceed with the work. APP-1 concurrence will generally be limited to ventilation packages and cases of neighborhood equity or for older or poorly maintained residences where the 5 dB reduction may be difficult to achieve. These special circumstances are discussed in Table 4.
All building code requirements must be met.	Sponsors must certify to the ADO that the engineering plans and specifications for the noise insulation project conform to the local building code.
All required federal contract provisions must be met.	As required by all projects funded with AIP, the noise mitigation measures must meet all federal procurement and contract requirements, including the Buy American Preference requirements of Title 49 United States Code §50101.

2. Specific Sampling and Testing Requirements for Projects.

In order for a structure to be funded with AIP grant funding, the sponsor must follow the sampling and testing criteria listed in Table 2.

[12] Handbook of Environmental Acoustics, 1994. By James P. Cowan

Table 2 Sampling and Testing Requirements

For the following…	The requirement is…
Published Guidance	In 1992, FAA adopted guidance on testing frequency, sampling and other statistical measures that can be applied to a neighborhood to estimate the interior noise levels in the residences that are in the 65 dB contour[13]. This information is compiled into the Acoustical Testing Plan. Long standing agency policy is that an airport sponsor must use the 1992 guidance to establish the existing interior noise levels to determine whether or not the building qualifies for sound insulation using AIP.
Sponsor Requirements for submitting Testing Protocol to the ADO	The Sponsor must submit the proposed testing phase protocol to the ADO. The ADO has the option to review the sampling protocol. After ADO review or after the ADO has indicated that the protocol will not be reviewed, the Sponsor will then noise insulate the residences in the testing phase.
First Step – initial testing	The first step of a noise insulation program is generally the initial testing phase. In this phase, the Sponsor characterizes the neighborhood by characterizing the housing types and locations. The Sponsor will also describe the acoustical issues, number of residences to be tested and describe the acoustical criteria and testing methodology. Example: A Sponsor is starting a sound insulation program in a community near the airport. The Sponsor first conducts a windshield survey of the types of residences that are in the current phase. The windshield survey catalogs the types of residences in the neighborhood, notes similarities and differences in the age, construction type, size, number of levels, and types of housing (single family or multi-family). Once the Sponsor has characterized the diversity of the residences in the noise contour, it will select a representative sample of each type of residence for testing, which based on industry review is typically 10 to 30 percent. Testing in this case means that the sponsor develops a sound insulation package that the sponsor believes will reduce the interior

[13] Guidelines for Sound Insulation of Residences Exposed to Aircraft Noise, Oct. 1992. This document may be found on the FAA Airport Noise web site at : http://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.information/documentNumber/150_5000-9A

For the following…	The requirement is…
	noise level in the residence for each type of construction. Therefore, in a neighborhood where the residences are made of either brick or wood siding, the Sponsor will develop 2 different packages – one for the brick residences and one for the siding residences. The sponsor will then measure the interior noise levels and prepares a summary report detailing the effectiveness of the design package, make recommendations for any changes to the package, lists the before and after interior noise level data, and submits the package to the ADO. Reimbursement for initial and subsequent phase testing is limited to 10% of the residences of a particular type unless the Sponsor has provided the justification for the request to the ADO and the ADO has approved the request. The ADO must approve or disapprove a Sponsor request for reimbursement for testing more than 10%, but not more than 30%, of the residences of a particular construction type. The ADO may request APP-400 assistance in evaluating Sponsor requests. A copy of the Sponsor's written request and the ADO approval or disapproval must be kept in the project file. For requests for reimbursement for more than 30% of the residences of a particular type, the ADO must receive APP-400 approval. The request to APP-400 from the ADO must contain unless the Sponsor's justification for the request, and the ADO's recommendation for approval or disapproval.
Second Step - ADO and Sponsor Review of Initial Testing Results	The Sponsor should review the results to determine if additional residences should be tested. The ADO has the option to review and approve or disapprove all Sponsor revisions to the sampling program.

For the following…	The requirement is…
Special Circumstance – Resident Requests Specific Testing	Occasionally a resident may request that their residence be tested specifically. This may be because of the condition of the home, or because the resident believes that their residence will test differently than others. These additional tests are generally allowable. However if an additional residence is tested, it must be tested both before and after any noise insulation work to ensure the 5 dB NLR is achieved.
Final Step – Completing the Testing Phase	After the completion of the testing phase, the sound insulation program will begin for the neighborhood. In these later phases, the sponsor is still expected to test from 10 to 30 percent of each different category of residences in the phase to revalidate the design assumptions. The results of the revalidation testing must be submitted by the Sponsor to the ADO. The ADO has the option to review these test reports.

3. Limitations on Eligible Projects.

Noise insulation projects are designed to reduce interior noise due to aircraft noise in habitable rooms or classroom areas. These projects are also called noise attenuation, noise mitigation, noise compatibility, sound insulation or soundproofing projects.

These projects are not intended to compensate for inadequate maintenance, to bring nonconforming structures up to building code standards, or to improve the comfort or attractiveness of a building.

Table 3 Eligibility Limitations for Specific Circumstances

For the following specific circumstance...	The requirements for eligibility or allowability of costs are…
Mechanical, Electrical, Structural and Building Code Deficiencies	If it is determined in the course of designing a sound insulation project that a building needs improvements in order to conform to local building codes, only the costs of the sound insulation are allowable. The costs of the improvements that are not related to the sound insulation are not allowable. For example, if a resident constructed unpermitted work on a residence. In order to obtain a building permit for the sound insulation project, the local

For the following specific circumstance...	The requirements for eligibility or allowability of costs are…
	building code inspectors require that the resident must install a railing around a deck. The cost of installing the deck railing is not allowable because the residence did not meet building code requirements before the sound insulation project was started.
Residential Habitable Areas	Eligible projects may include noise insulation of only the habitable areas of residences such as living, sleeping, eating or cooking areas (single family and multifamily)[14]. Bathrooms, closets, halls, vestibules, foyers, stairways, unfinished basements storage or utility spaces are not considered to be habitable. Areas that are not allowed under local building code are not considered habitable. For example, a resident has converted part of a basement to a bedroom and the bedroom conversion does not meet the building code requirements to be categorized as a bedroom. The converted bedroom is not considered habitable space.
School Classrooms and Libraries.	Eligible projects may only include noise insulation of the parts of a school that are used for educational instruction. For schools, noise insulation is limited to classrooms and libraries. Areas that are used for incidental instruction, such as hallways, gymnasiums or cafeterias are not allowable. For schools, the usual design objective for classroom environment is a time-average A-weighted sound level of 45 dB resulting from aircraft operations during normal school hours. As with residential noise insulation, a school project must reduce existing noise levels by at least 5 dB for the same time-average school hour time frame.
Structures within the DNL 75 dB and higher noise contour	The ADO should not normally consider sound insulation projects for residences, schools, hospitals, places of worship, auditoriums, and concert halls within a DNL 75 dB or greater noise contour since these uses are never compatible in these noise contours. If a sponsor requests sound insulation in the

[14] Guidelines for Sound Insulation of Residences Exposed to Aircraft Noise, Oct. 1992. This document may be found on the FAA Airport Noise web site at : http://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.information/documentNumber/150_5000-9A

For the following specific circumstance...	The requirements for eligibility or allowability of costs are…
	DNL 75 dB contour, the ADO may consider consulting with APP-400 for guidance. The ADO must document any determination to sound insulate within the DNL 75 dB contour, including reasons for *not* seeking APP-400 guidance must be included in the project file. Where APP-400 was coordinated with, the results of that coordination must be included in the project file.
Mobile Homes or Mobile Classrooms	Mobile homes and Mobile Classrooms are not viable noise compatibility projects since their design and construction do not lend themselves to effective noise reduction measures.
Permanent Modular Buildings.	Some modular structures may be classified as permanent if they meet construction guidelines applied to permanent structures. The ADO must make a determination whether or not to noise insulate these structures on a case-by-case basis by the ADO. The ADO must coordinate the review of the structures with APP-400. The ADO must document any determination to sound insulate permanent modular buildings in the project files.
Ineligibility of Previously Insulated Residences.	It is important that a Sponsor ensure that people in sound insulated residences understand that ongoing maintenance and eventual replacement of the sound insulating measures become the resident's responsibility. AIP funds may only be applied to noise insulate residences a single time. While it is recognized that windows, ventilation systems, and noise insulation improvements will deteriorate over time, noise insulating a residence more than once is not an allowable AIP cost. Therefore, replacement of such components represents a normal home maintenance expense. This provision is reflected in Grant Special Condition K, Noise Projects on Privately Owned Property.

d. Special Circumstances.

The Part 150 regulation provides for special circumstances where residences that do not meet the requirements in Table 1 may be considered eligible for noise attenuation.

The ADO must receive APP-1 concurrence for the proposed treatment of the special circumstances. The ADO must document these special circumstances, including APP-1 approval, in the project file.

Table 4 Special Circumstances for Noise Insulation in Residences

For the following Special Circumstances…	**The Sponsor must determine and the ADO must concur…**
Block Rounding – *Residences that extends beyond the DNL 65 dB*	In determining the reasonable end point for noise insulation projects, the ADO must ensure that the end point is a logical breakpoint (e.g., neighborhood boundary, significant arterial surface street, highway, river, other physical or natural barrier or feature) or whether the end point extends unreasonably beyond a natural break. In these cases, the Sponsor must provide the ADO the proposed end point information. The sponsor must provide the ADO with a list of the specific residences (by address) that will be included in the program. These residences must be noted as "Included due to block rounding." The ADO must review and either approve or disapprove including the residences in the noise insulation program. Note: The airport sponsor may elect not to employ the "block rounding" concept. In such a case it is recommended that the ADO notify APP-1 of the Sponsor's decision not to block round. Once a residence is approved for block rounding, its interior noise levels will determine whether the residence qualifies for noise insulation or whether the residence is considered under the neighborhood equity provisions, below.
Neighborhood Equity – *Residence is in the DNL 65 dB contour, but is not experiencing interior noise levels 45 dB or greater.*	When a *few* residences that do not meet the interior noise level requirements are scattered among residences that do meet the interior noise level criteria, there will be confusion among the homeowners as to why one home is being insulated and another is not. The success of a noise compatibility program in a neighborhood relies on the support of the community. This community support may be lost if there is a sense that some residences are being denied noise insulation. To ensure community support, it may be reasonable to include provisions for neighborhood equity in a noise insulation project. In these cases, the Sponsor develops two sets of noise insulation packages. The standard noise insulation package will be prepared for residences that meet the interior noise criteria. A second package will be prepared consisting of other improvements such as caulking, weather stripping, installation of storm doors or ventilation packages for residences that are

For the following Special Circumstances…	The Sponsor must determine and the ADO must concur…
	not experiencing interior noise 45 dB or greater. In order for grant funding to be available for the secondary package, participation must be limited by FAA policy to less than 10 percent of the residences in the neighborhood, (as logically bounded by either streets or other geographic delineation), but by FAA policy in no case more than 20 residences total in a phase of the noise insulation program. Where there are more than 10 percent or 20 residences proposed for neighborhood equity packages, the costs of this work must be funded with other, non-federal, sources of funds. If a sponsor proposes the use of secondary packages for neighborhood equity, the Sponsor must provide a list to the ADO that outlines the number of residences that are proposed for noise insulation, breaking down the residences that meet criteria and those that do not. The Sponsor's report must also provide detailed information about the proposed neighborhood equity package including costs of the secondary package compared to the cost of a standard noise insulation package. The ADO must review and approve/disapprove the Sponsor's proposed neighborhood equity package to ensure that the use of the minimal neighborhood equity packages on non-eligible residences is required to allow successful completion of the overall noise insulation program in the neighborhood, thus allowing these residences to be noise insulated within the guidelines of AIP eligibility. The ADO must document the approval of the noise insulation package in the project files. In extremely rare cases, ADO may determine that the program will benefit by providing noise equity packages to more than the 10 percent/no more than 20 residence limit. In this instance, the ADO must receive APP-1 approval to exceed this limit. Use of the standard noise insulation package that is designed for residences experiencing noise levels 45 dB or greater for neighborhood equity is not allowable.
Noise Mitigation Package Consisting of Ventilation Only (Continuous Positive Ventilation System) -*For*	Because the interior noise measurements are conducted with "windows closed", there may be situations where a residence does not have an existing ventilation system, but relies on keeping the windows open for air circulation. A Continuous Positive Ventilation System is the allowable package for these residences. The sponsor

For the following Special Circumstances…	The Sponsor must determine and the ADO must concur…
Residences that do not have Continuous Positive Ventilation and when tested, demonstrate interior noise levels less than 45 dB.	must also provide detailed information about the ventilation package including costs of the package compared to the cost of a standard noise insulation package. The sponsor may recommend an air conditioning system in lieu of ventilation- only. Because a ventilation system is likely to increase utility and maintenance costs for the residence, the sponsor should provide information about utility and maintenance costs for the installed equipment to the residence owners.

Handling Noise Insulation Programs That Are Currently Underway

1. Applicability.

This attachment applies to all sponsors that have noise programs that are currently underway. The provisions set forth in this attachment do not apply to noise insulation projects for which construction has been completed. Construction being completed means that final payment has been made to the contractor doing the sound insulation work on the residence or public building.

Because of the inconsistent application of the two-step requirement for noise programs, FAA must confirm that the noise programs meet the published AIP requirements for noise insulation programs.

a. **Airport Review of Noise Programs Currently Underway Must be Complete by September 30, 2014.** All sponsors of noise insulation programs currently underway must review the testing, design, and construction plans against the restated noise insulation requirements in this PGL. This review must be completed by September 30, 2014.

   FAA anticipates that it will take some time for a Sponsor to review its ongoing program against the restated noise insulation requirements.

b. **During the Airport Review, Sponsors have the Option to Continue Ongoing Noise Program Work under the Terms and Agreements of that Specific Noise Program.** Rather than stop all noise insulation projects while sponsors are verifying their noise programs, FAA will allow programs to continue as described in the following paragraphs during the review period. This decision was made because stopping an ongoing noise program would disrupt those neighborhoods where construction is underway and delay providing relief to noise impacted residences, schools, or public buildings.

   However, the ongoing program must meet all existing program requirements for noise level reduction, noise contour, reporting and other factors defined in the ongoing noise program 14 CFR Part 150 Record of Approval.

2. Defining an Ongoing Program.

A program is considered ongoing if it meets the requirements in Table 1.

Table 1 Definition of an Ongoing Noise Insulation Program

A noise insulation program is considered to be "Ongoing"	**If the following conditions are met…**
Residential Noise Insulation Program	Residential noise insulation construction is underway: Construction took place in fiscal year 2010 or 2011 and construction is planned to continue in fiscal years 2012, 2013 or 2014; or Residential noise insulation construction is about to

Handling Noise Insulation Programs That Are Currently Underway

	start: The first phase of residential noise insulation construction is scheduled to begin in fiscal year 2012.
School or Public Building (Places of Worship, Medical Facility) Noise Insulation Program	A school or public building noise project at a specific school that started construction prior to the date of this PGL; or A school or public building noise project at a specific school for which construction procurement was completed prior to the date of this PGL.

3. Planned FY2012, 2013, and 2014 noise insulation projects.

In fiscal year 2012, 2013 and 2014, the FAA will allow a sponsor to complete the noise insulation of structures that the sponsor has contracted to noise insulate as planned, provided that all noise insulation projects undertaken during this time meet all required federal contract provisions, such as Buy American.

Any noise insulation project that is started during the review period must be completed prior to September 30, 2015. Projects for which construction is ongoing after September 30, 2015, must fully meet the AIP requirements, including experiencing pre-insulation interior noise levels 45 dB or greater.

Additional Costs Incurred to Conform to the PGL. During the program review period, a sponsor may incur additional project costs. Redesign costs to conform to the PGL are not eligible for reimbursement.

Additional costs for testing to determine pre-insulation or post-insulation interior noise levels will generally be eligible for AIP funding. As with any AIP project, the costs to repeat a test are not eligible for AIP funding.

Additional testing costs for projects that will be designed or go under construction after the transition period will generally be eligible for reimbursement.

4. Required Sponsor and ADO Actions:

Table 2 describes the required actions that sponsors and the ADO must take for projects that are continuing during the transition period.

Table 2 Required Sponsor and ADO Actions for Transition Period Projects

In the following time period or if the following circumstance exists…	The Sponsor must…	The ADO must…
Within 30 days after publication date of the PGL	Submit the Initial Report, which includes the following documents on projects that are ongoing or that	Concur or nonconcur with the sponsor's initial submittal. A copy of the ADOs concurrence

Handling Noise Insulation Programs That Are Currently Underway

In the following time period or if the following circumstance exists…	The Sponsor must…	The ADO must…
	will be underway during the transition period: **a.** Program and policy procedures manual **b.** Testing reports **c.** List of structures that will be undertaken during the period, including estimated start and completion of construction dates. The list must include: 1. Address 2. Year that structure was constructed 3. Location on the noise exposure map. **d.** Certification that all projects that will be designed or constructed during the transition period will comply with all required federal contract provisions, including Buy American. **e.** Certification that the ongoing program will meet all existing program requirements for noise level reduction, noise contour, reporting and other factors defined in the ongoing noise program 14 CFR Part 150 Record of Approval or environmental mitigation Record of Decision. If the ADO does not concur with the submittal, the sponsor must revise the submittal until a document that the ADO can concur with has been produced.	and the sponsor's initial submittal must be placed in the project file. If the ADO does not concur with the submittal, the ADO must provide comments to the sponsor so the sponsor can revise the transition plan. The ADO review will consist of determining whether the sponsor has provided the three items listed as required. The ADO has the option of coordinating the review with APP-400.
If the Sponsor anticipates incurring additional costs on projects during the transition period	Submit all cost data to the Airport's District Office (ADO) in advance of incurring the cost	The ADO must review the cost data and determine whether the costs can be reimbursed with AIP. If the costs are not reimbursable, the ADO must notify the sponsor that the costs will not be

Handling Noise Insulation Programs That Are Currently Underway

In the following time period or if the following circumstance exists…	The Sponsor must…	The ADO must…
		reimbursed.
Submit Bi-Annual Report By the following dates: 1. March 30, 2013 2. September 30, 2013 3. March 30, 2014 4. September 30, 2014 5. March 30, 2015 6. September 30, 2015 (final report)	Documentation in the Bi-Annual Report. Each report must include documentation on each of the residences in the program. The report must include: a. Address of the residences b. Year that residence was constructed c. Location of the residences on the noise exposure map. d. Pre-mitigation indoor noise level (if tested) e. Post-mitigation indoor noise level (if tested) f. A certification that the projects that are being designed or constructed during the transition period comply with all required federal contract provisions, including Buy American. g. Other information requested by the Region or ADO. Note: This progress report is not the same as the existing grant progress report which Sponsors are required to submit on a quarterly basis.	The ADO has the option to review the Bi-Annual Report. The ADO must place the report in the project file. The ADO review will consist of determining whether the sponsor has provided the items listed as required.

SAN DIEGO INTERNATIONAL AIRPORT

DRAFT

FEDERAL AVIATION ADMINISTRATION (FAA) CLARIFIES GUIDELINES FOR QUIETER HOME PROGRAM ELIGIBILITY

FREQUENTLY ASKED QUESTIONS

1. ***What changes has the Federal Aviation Administration (FAA) made to the eligibility requirements for the Quieter Home Program?***
   The FAA has provided clarification regarding the process for determining which structures are eligible for Airport Improvement Program (AIP) funding for sound-insulation projects. The clarification states that in order for a home to be eligible for AIP funding:
   1) It must be located within the airport's FAA-approved 65 decibel (dB) CNEL contour and
   2) "Habitable areas" inside the home must have noise levels of 45 dB or greater with all windows closed.

   The FAA issued the clarification after becoming aware of possible confusion and ambiguity in its guidance regarding the second criterion. The exact number of structures affected by this clarification cannot be determined until new testing criteria are completed. We will continue to work with the FAA to establish testing criteria that take into consideration San Diego's unique characteristics and lifestyle.

2. ***When will the strict enforcement of the process take effect?***
   The FAA has provided for a three-year transition period. Until September 30, 2015, program eligibility will remain the same. This transition will allow the airport's Quieter Home Program to complete projects that are currently in process.

3. ***Will this impact eligibility of San Diego homeowners within the airport's 65 dB noise contour?***
   The exact number of homes affected by this clarification cannot be determined until testing criteria of future projects is completed.

4. ***What if I have already completed an avigation easement and homeowner agreement for sound insulation?***

The good news is that the airport will be able to complete all the homes that have executed those documents – approximately 500 homes.

5. ***What if I am currently on the waiting list?***
   There are more than 900 homes on the waiting list. The airport may not be able to complete all 900 homes before September 30, 2015. After that date, the airport will sound-insulate as many homes as possible based on eligibility and continued funding from FAA.

6. ***How many homes do you expect to complete annually once the enforcement of the two-step process takes effect in October 2015?***
   It is too soon to know how many homes can be sound insulated annually after September 30, 2015. At this point the level of funding cannot be determined. The airport will continue to work with FAA regarding levels of funding.

7. ***What has SDIA done to communicate with the FAA about this issue?***
   The airport is – and has been – actively communicating with the FAA to help the agency understand San Diego's unique characteristics and lifestyle.

8. ***Are other airport communities equally affected by the clarification?***
   There are broader concerns for airports and communities nationwide brought about by this clarification, and SDIA is not alone in being concerned about potential impacts.

9. ***Where does the money come from to pay for the FAA's sound insulation program?***
   The funding comes from airport user fees, meaning that anyone who flies pays a fee included in the purchase of their airplane ticket; that fee is aggregated by FAA in the Airport and Airway Trust Fund (AATF), and the funds are used for numerous airport system needs, including sound-insulation programs nationwide.

10. ***So, if San Diegans are paying that user fee when they fly out of the airport, why can't that money be used to finish sound-insulating all homes within the 65 dB noise contour?***
    Since funding for the program comes primarily from monies administered by the FAA, the airport must adhere to the FAA's policies for its sound-insulation program in order to receive funding. User fees are also used to fund other important projects at SDIA and airports nationwide. Funds from the AATF are not exclusively for sound insulation.

11. ***Where can I find a copy of the FAA clarification regarding AIP eligibility for sound insulation projects?***
    The FAA's Program Guidance Letter regarding AIP Eligibility and Justification Requirements for Noise Insulation Projects is available on the FAA's website at: http://www.faa.gov/airports/aip/guidance_letters/media/pgl_12_09_NoiseInsulation.pdf.

If you have additional questions, please contact us at noisematters@san.org or (619) 400-2304.

Missed Approach Statists Update

Airport Noise Advisory Committee

San Diego International Airport

October 17, 2012

Missed Approach Definition

*Only the pilot and FAA have responsibility to control aircraft headings during arrivals and departures. Some examples of when air carriers may execute a missed approach are listed below. Please note that this list is not inclusive.

-A departing aircraft is exiting the airspace/runway slower than an arriving aircraft is entering the airspace/runway. In an effort to ensure safe separation of each aircraft, a missed approach is executed.

-A change in weather conditions has reduced approach minimums to the point that the pilot cannot safely land and execute a missed approach.

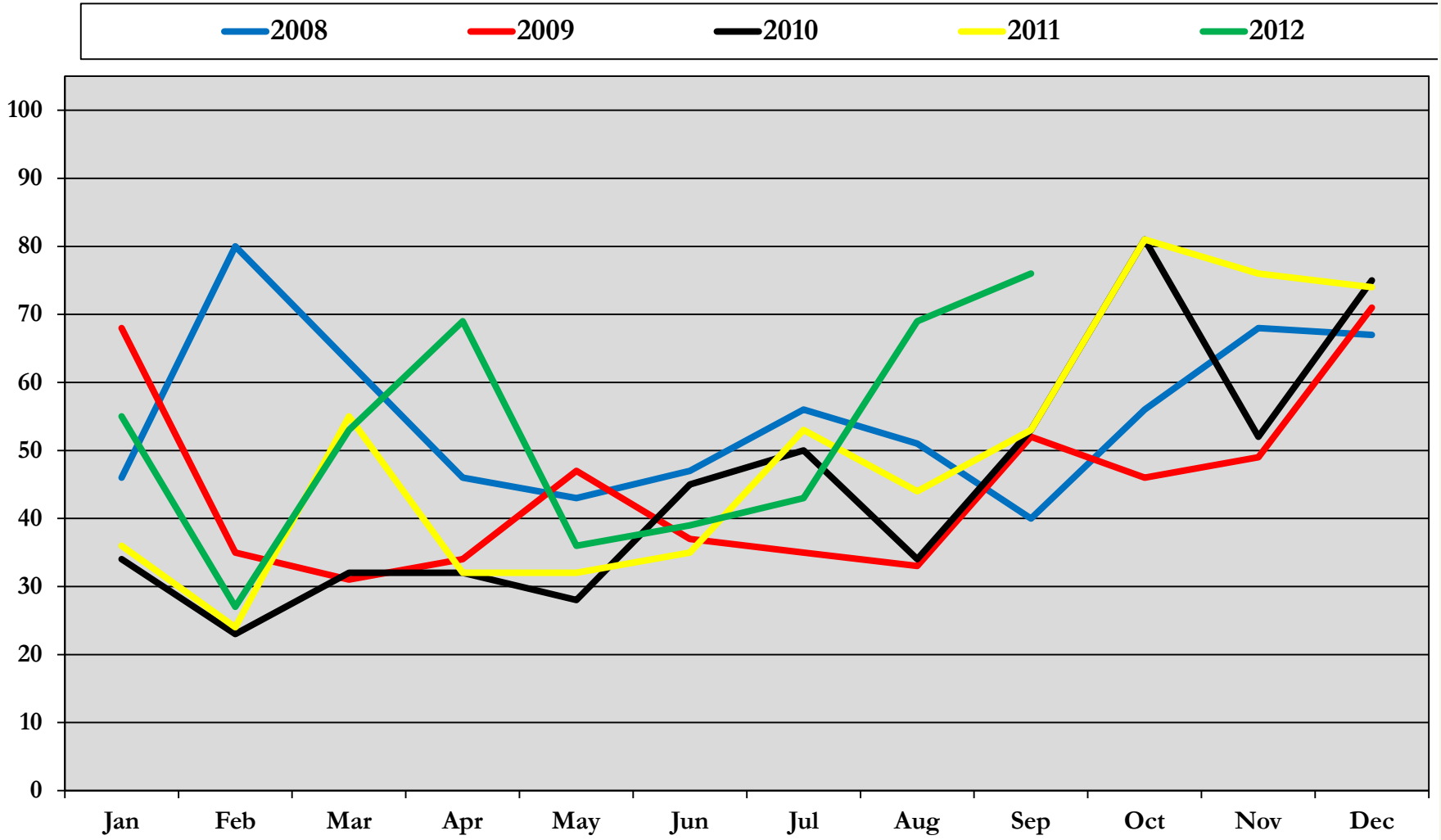
-A pilot is approaching the field at a speed or altitude that would not permit the aircraft to touch down at a reasonable distance past the displaced threshold (landing line) and still have enough runway remaining for braking and/or reverse thrust.

-Operations have been halted because foreign object debris (FOD) has been spotted on the runway and must be removed prior to resuming operations.

-Slow flow of departures and/or arrivals.

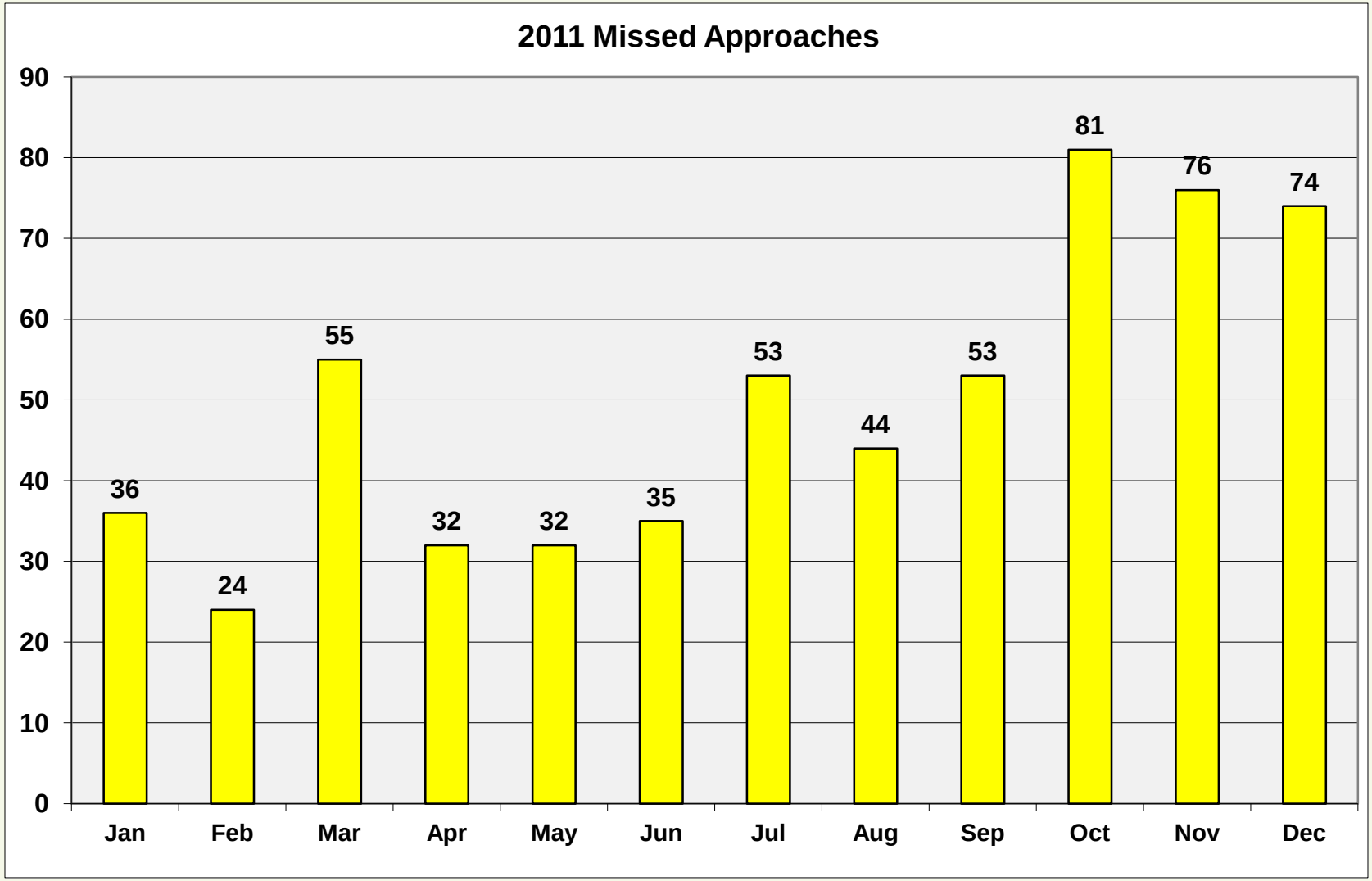
2004-2012 Missed Approaches

2004 = 589, 2005 = 696, 2006 = 594, 2007 = 633, 2008 = 663
2009= 538, 2010 = 539, 2011 = 595, 2012= 467 (YTD)



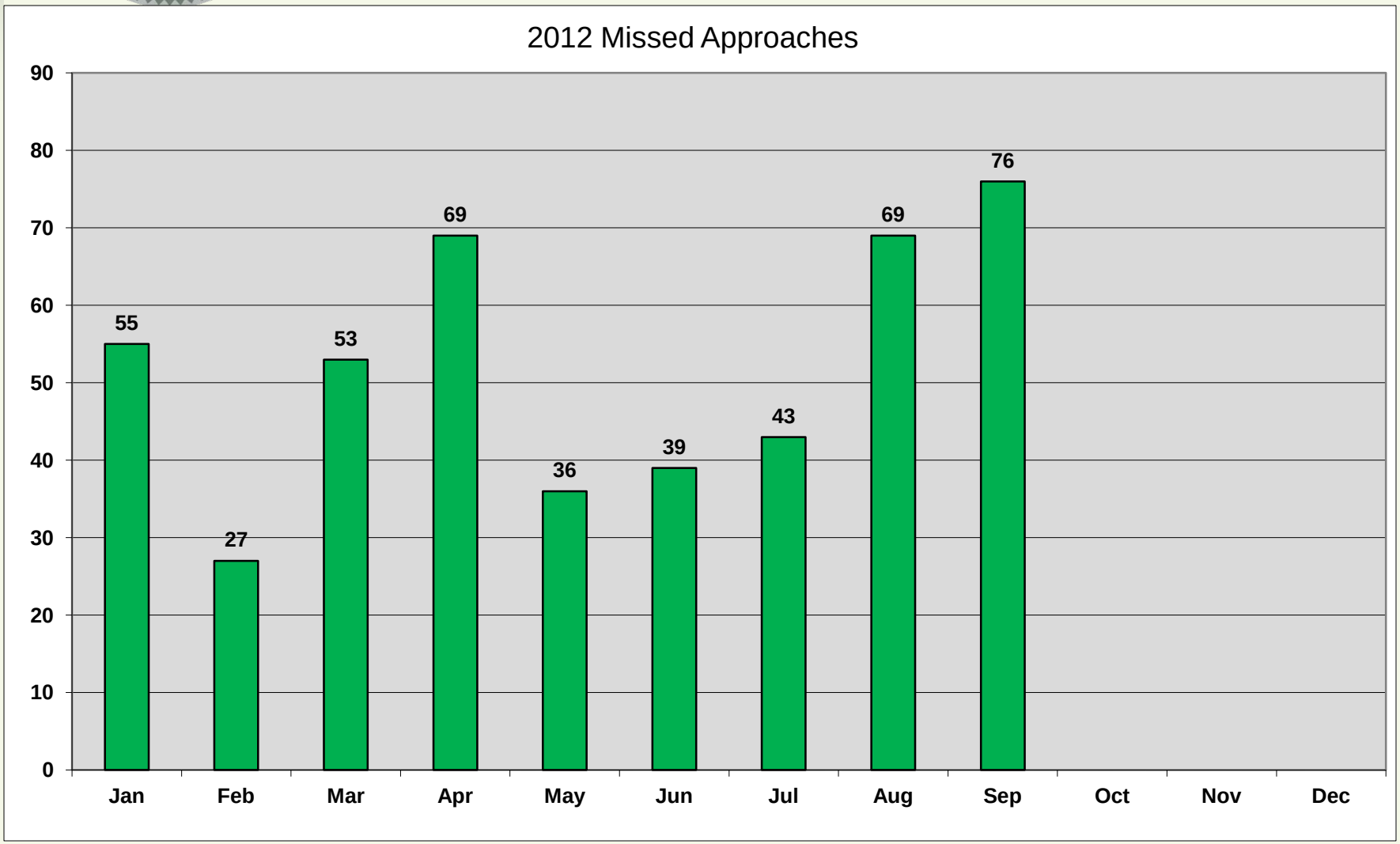
2011 Missed Approaches

595 Total

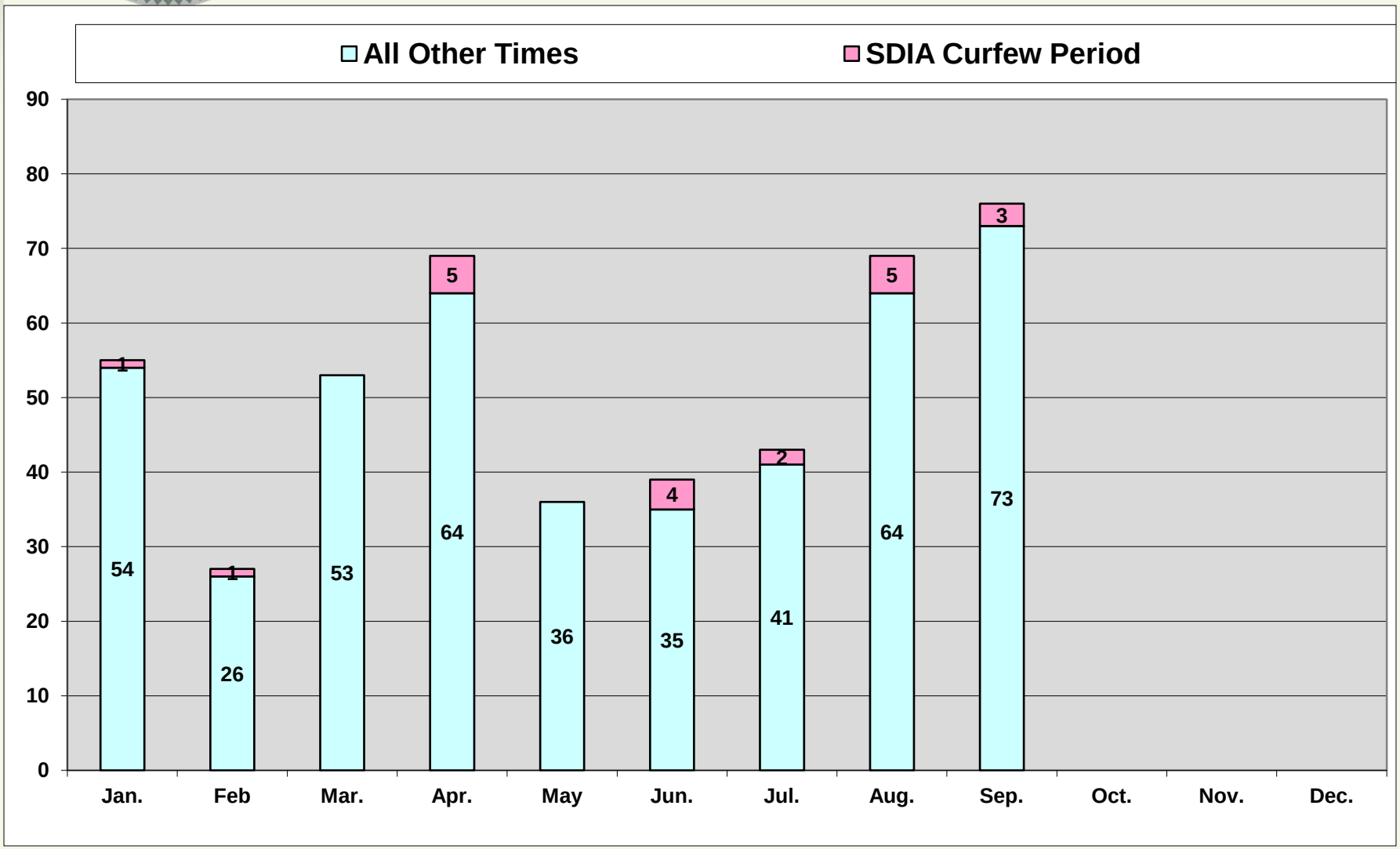


2012 Missed Approaches

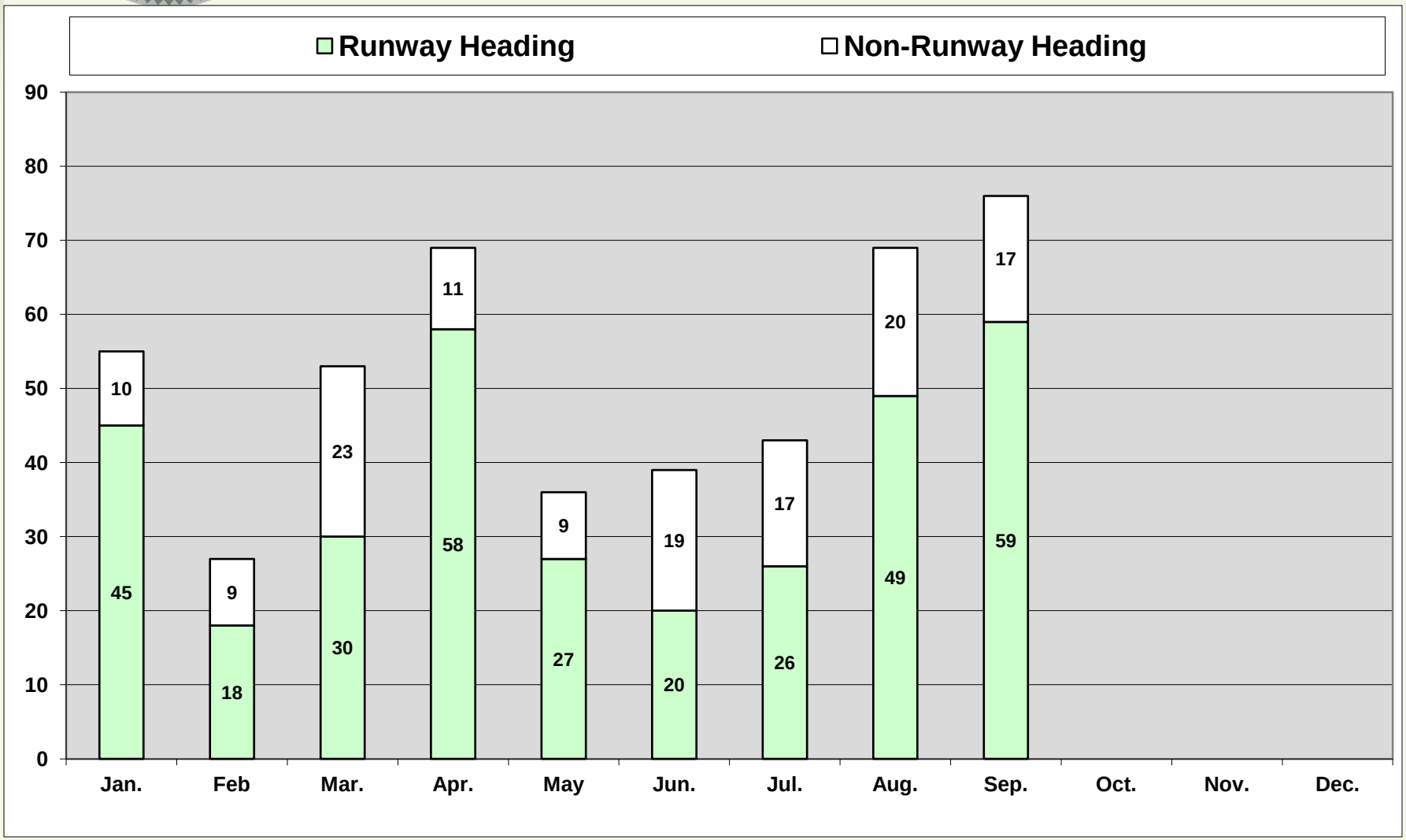
467 Total Year To Date



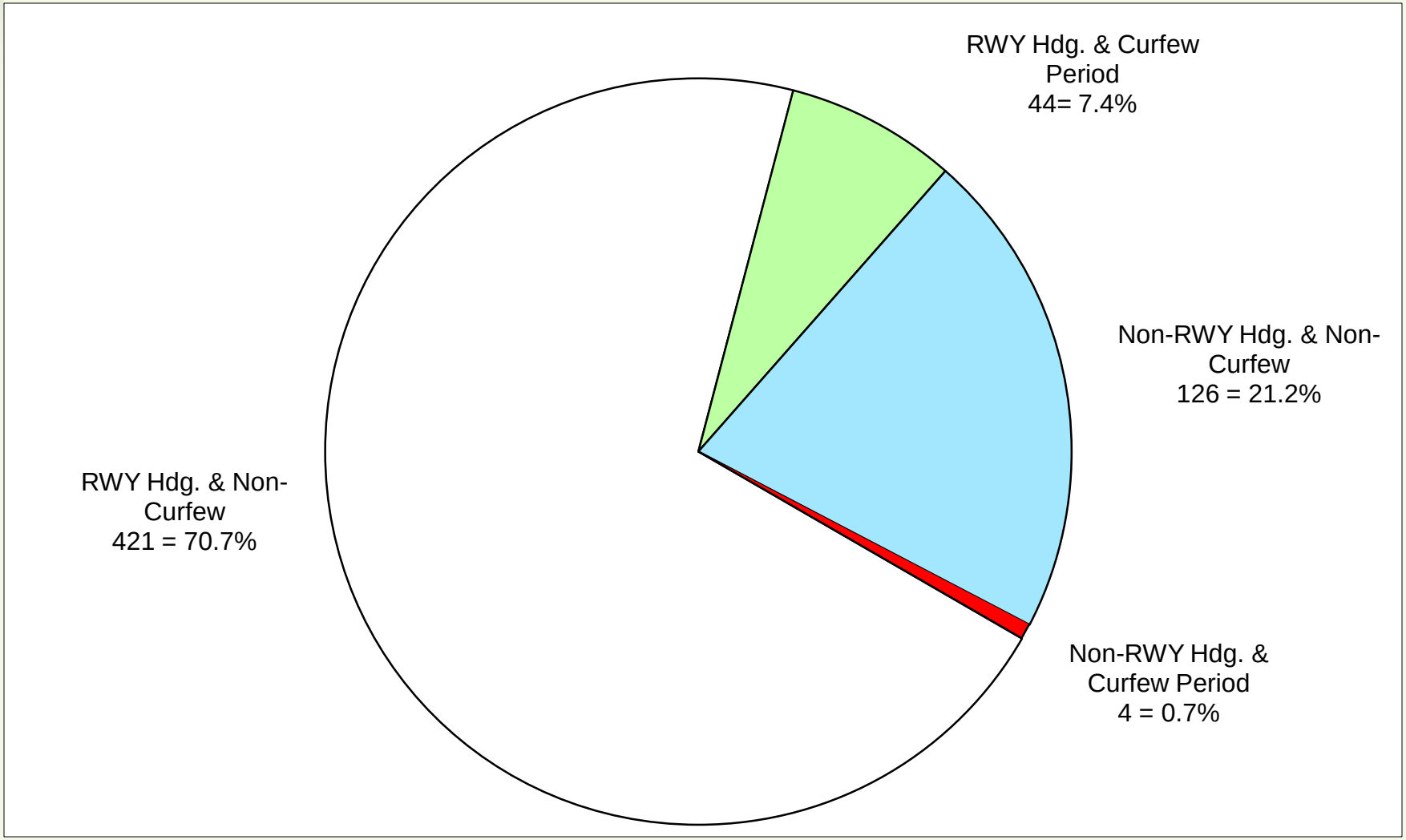
Curfew Period vs. All Other Times



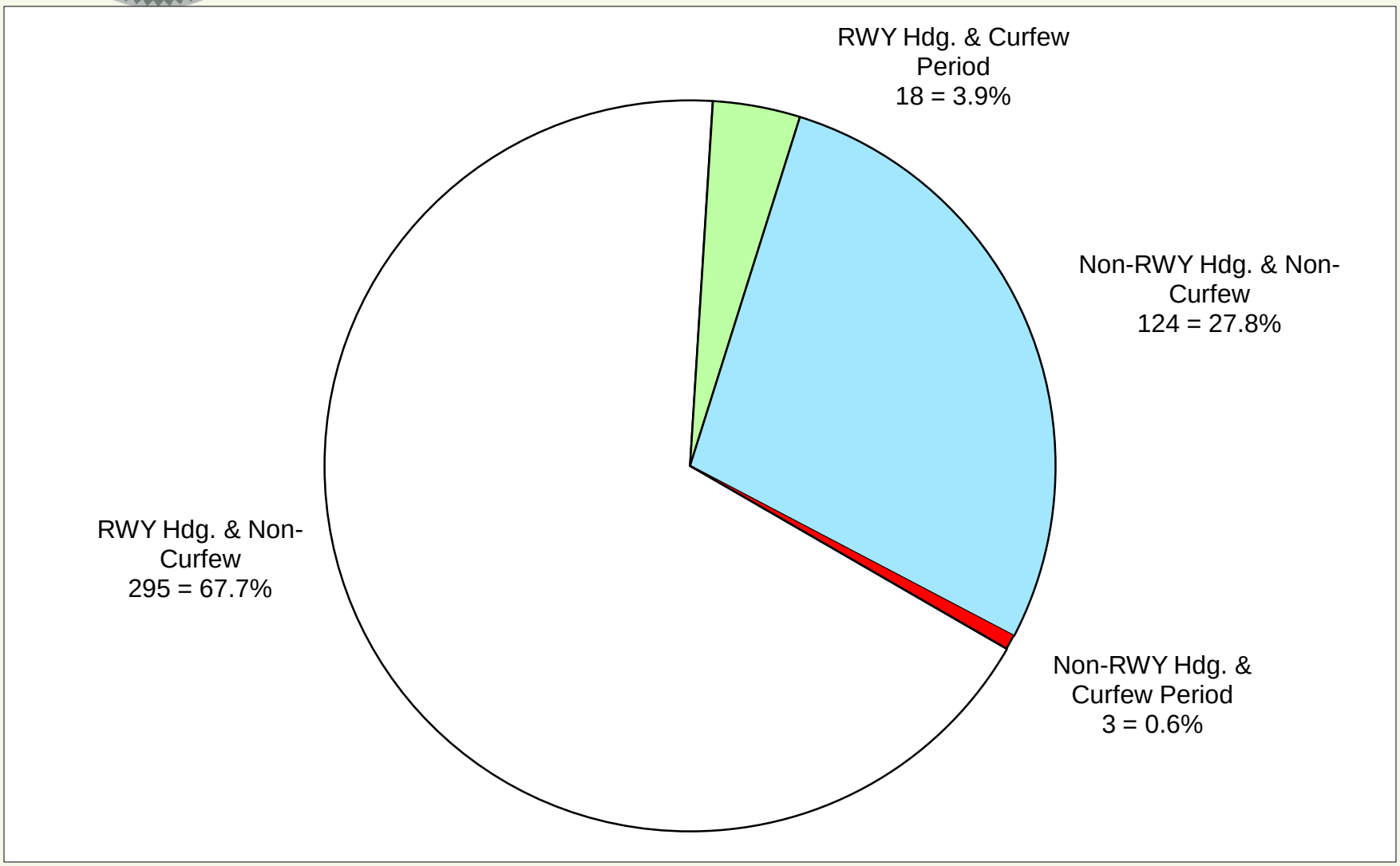
Runway Hdg. Vs. Non-Runway Hdg.



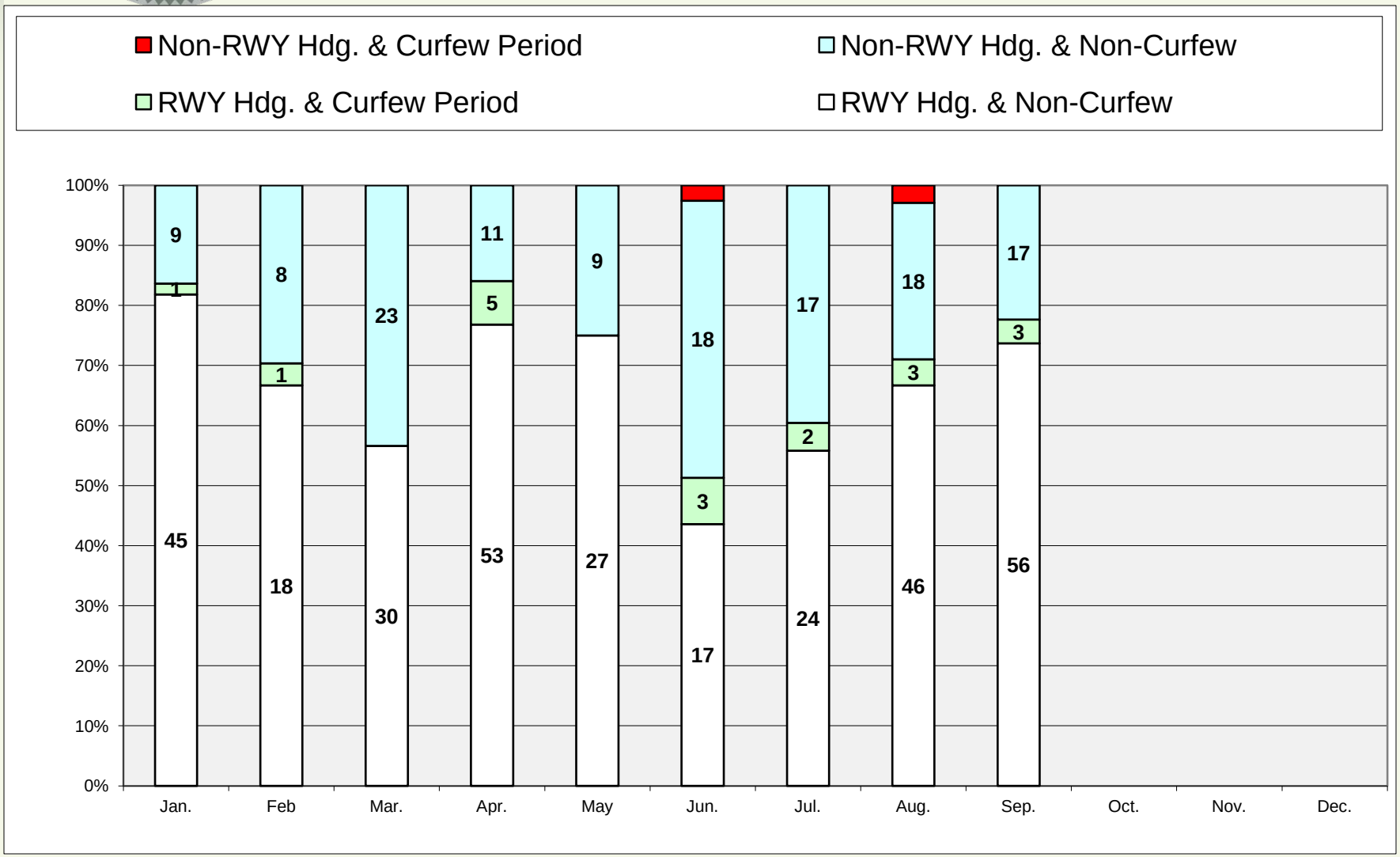
2011 Missed Approaches – Percentage



2012 Missed Approaches – Percentage (Year to Date)



2012 Missed Approaches – Percentage (Year to Date)



Questions?

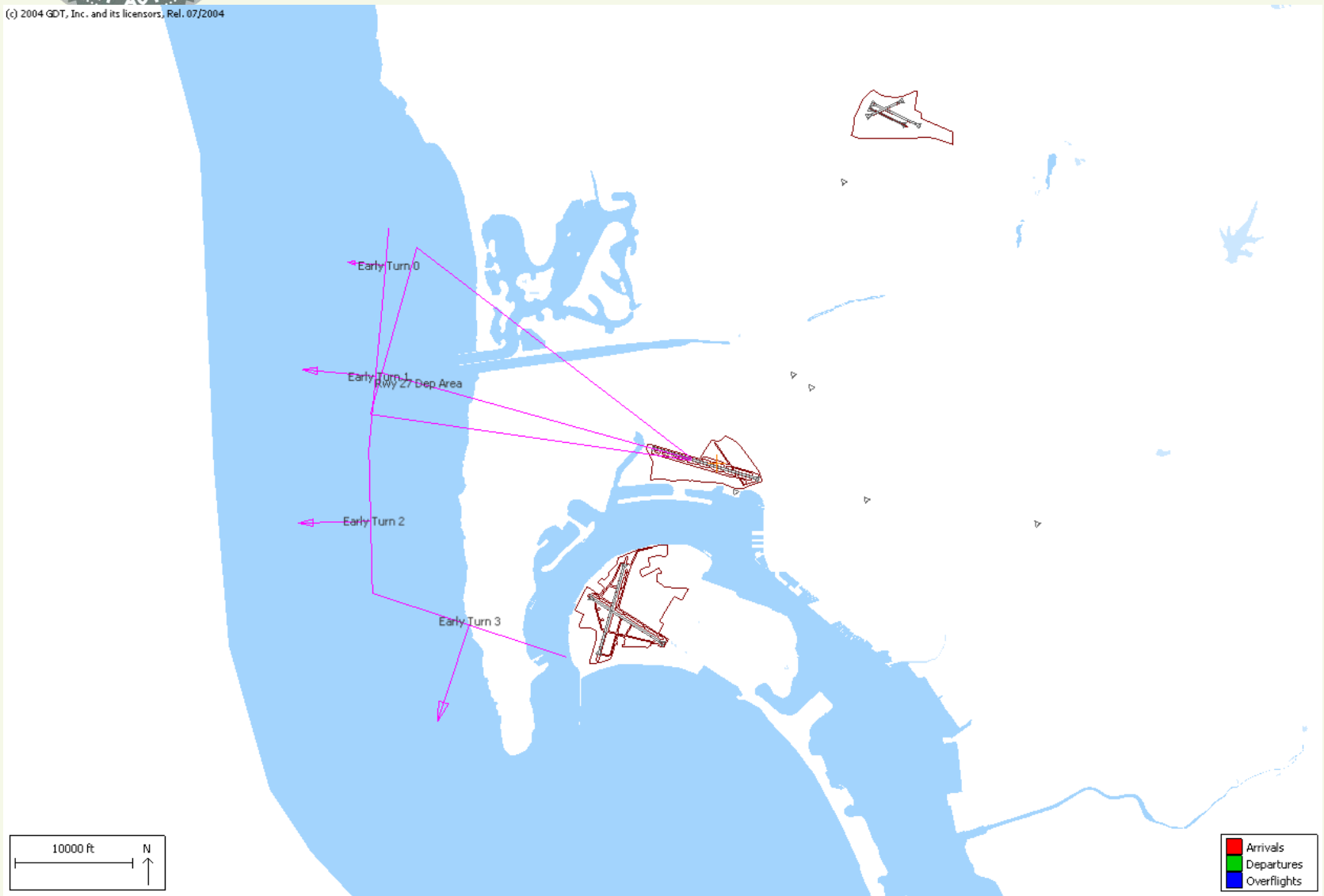
"Early Turn" Statistics Update

Airport Noise Advisory Committee

San Diego International Airport

October 17, 2012

Boundary Definition



Definition

- An aircraft that deviates from established departure procedures to a new prescribed departure path, to insure the safe and efficient flow of all aircraft. These early turns are solely conducted at the FAA Control Tower's discretion.

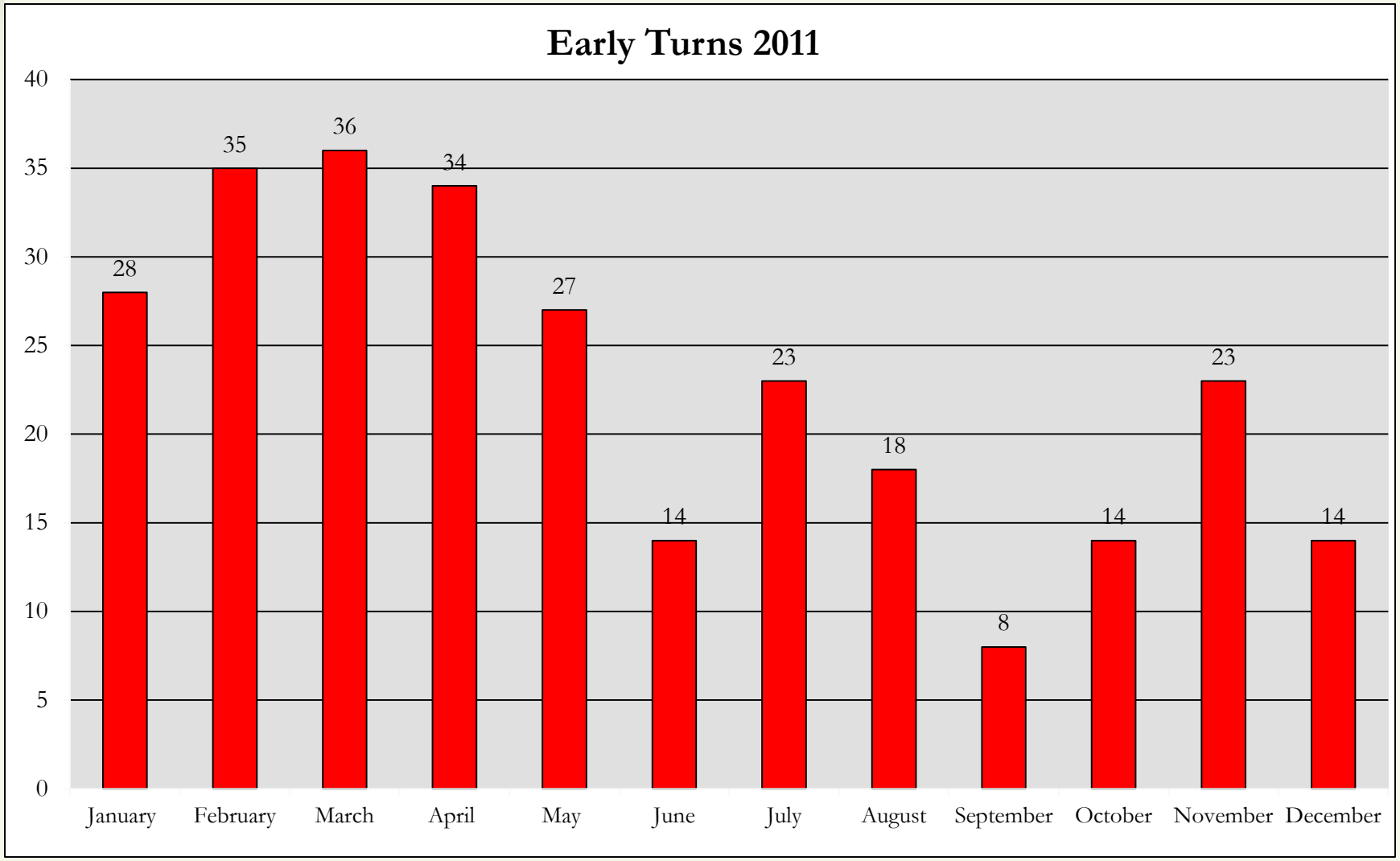
Definition

Link:http://www.san.org/documents/airport_noise/Airport_Noise_FAQs_2006.pdf

Only the FAA has the capability of determining what heading aircraft use when departing SDIA. However Airport staff can use the available computerized system to determine if departing aircraft utilize a standard instrument departure (SID). The ANOMS-GIS software is capable of overlaying the SID corridor that aircraft normally fly when departing SAN. When aircraft fail to transit this corridor, a printout of the radar flight track showing this deviation is sent to the FAA **TRACON** for review.

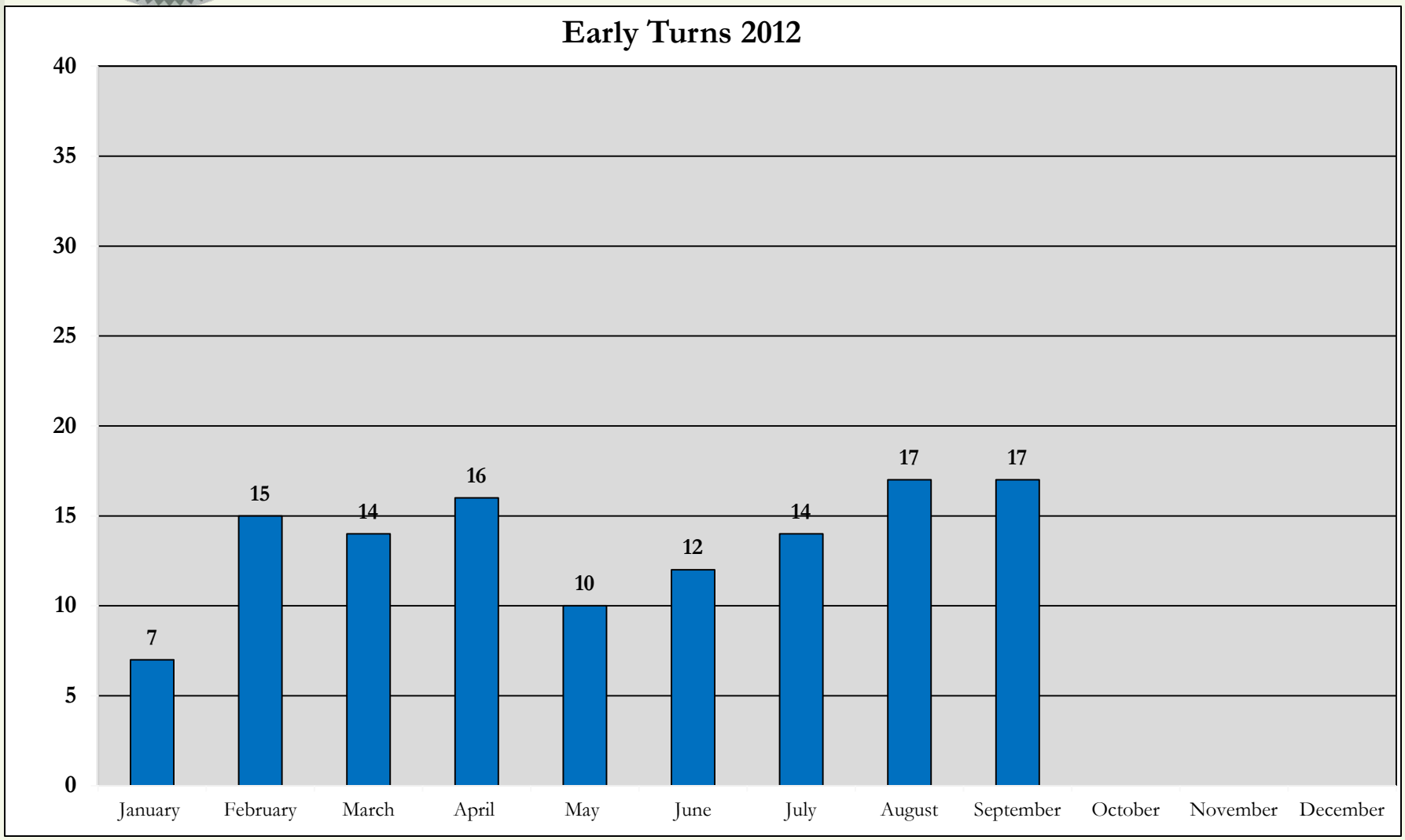
2011 Early Turns

Total sent to FAA
(Total for 2011 = 274)



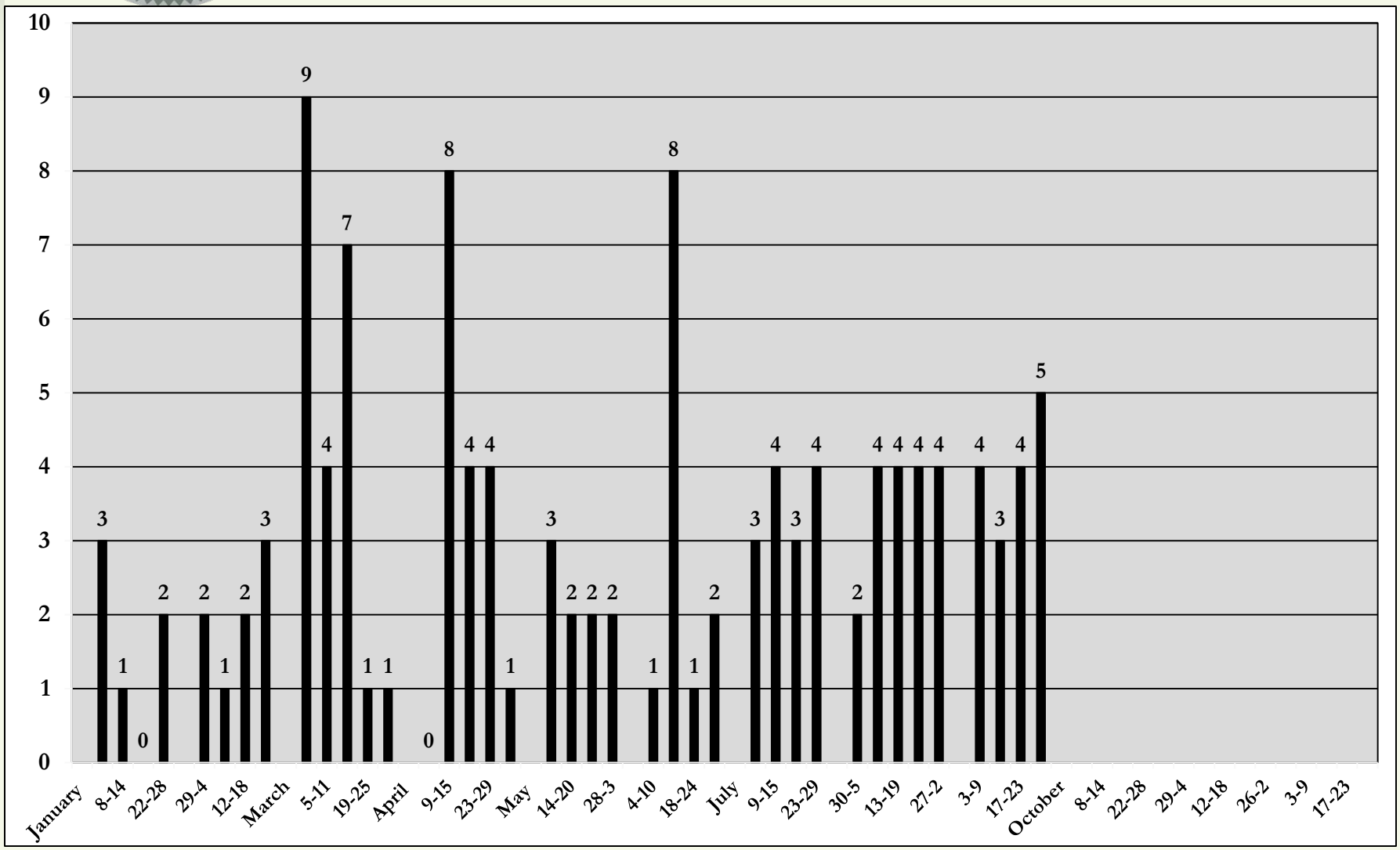
2012 Early Turns

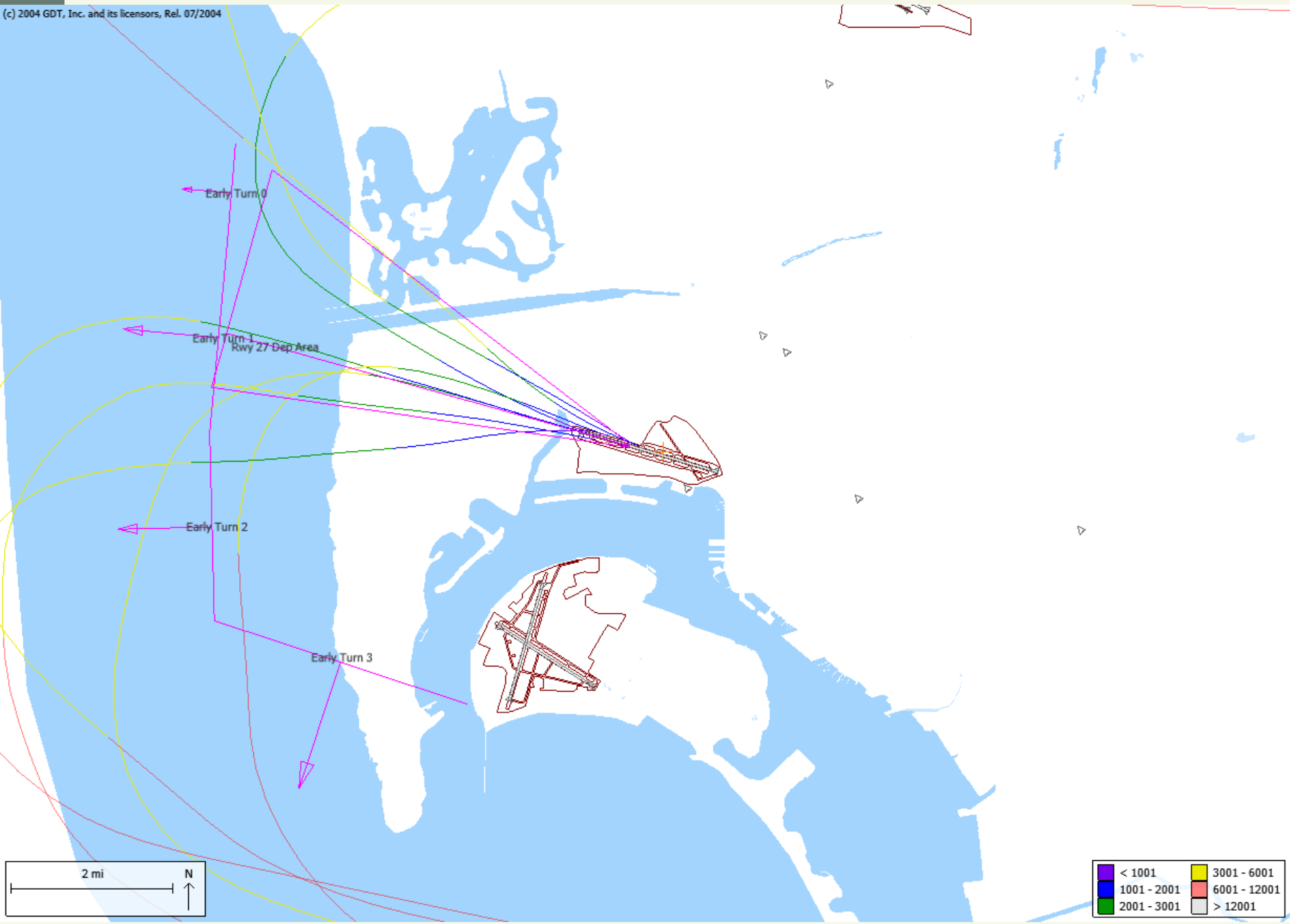
Total sent to FAA
(Total to date in 2012 = 122)



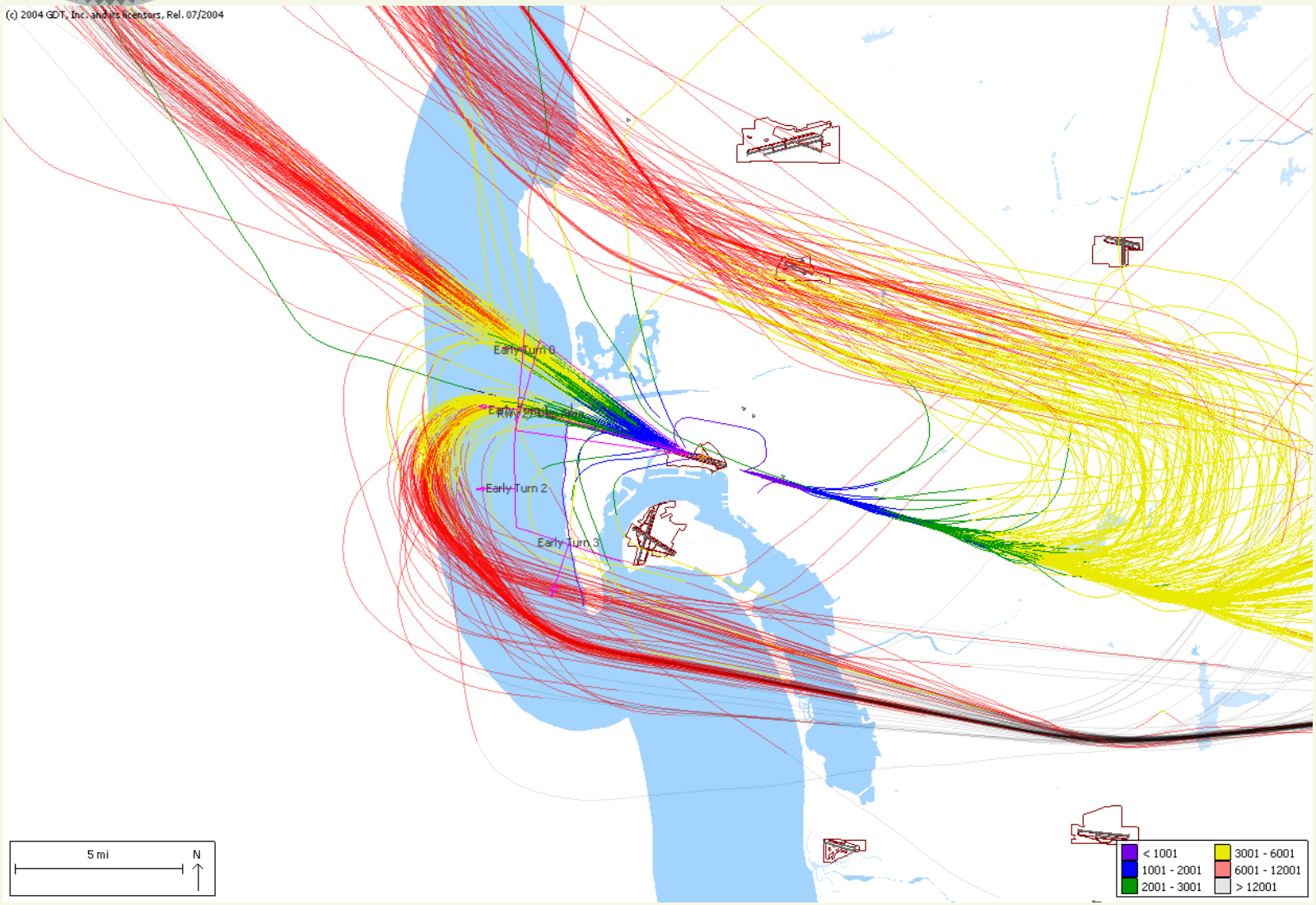
2012 Early Turns

Weekly Totals



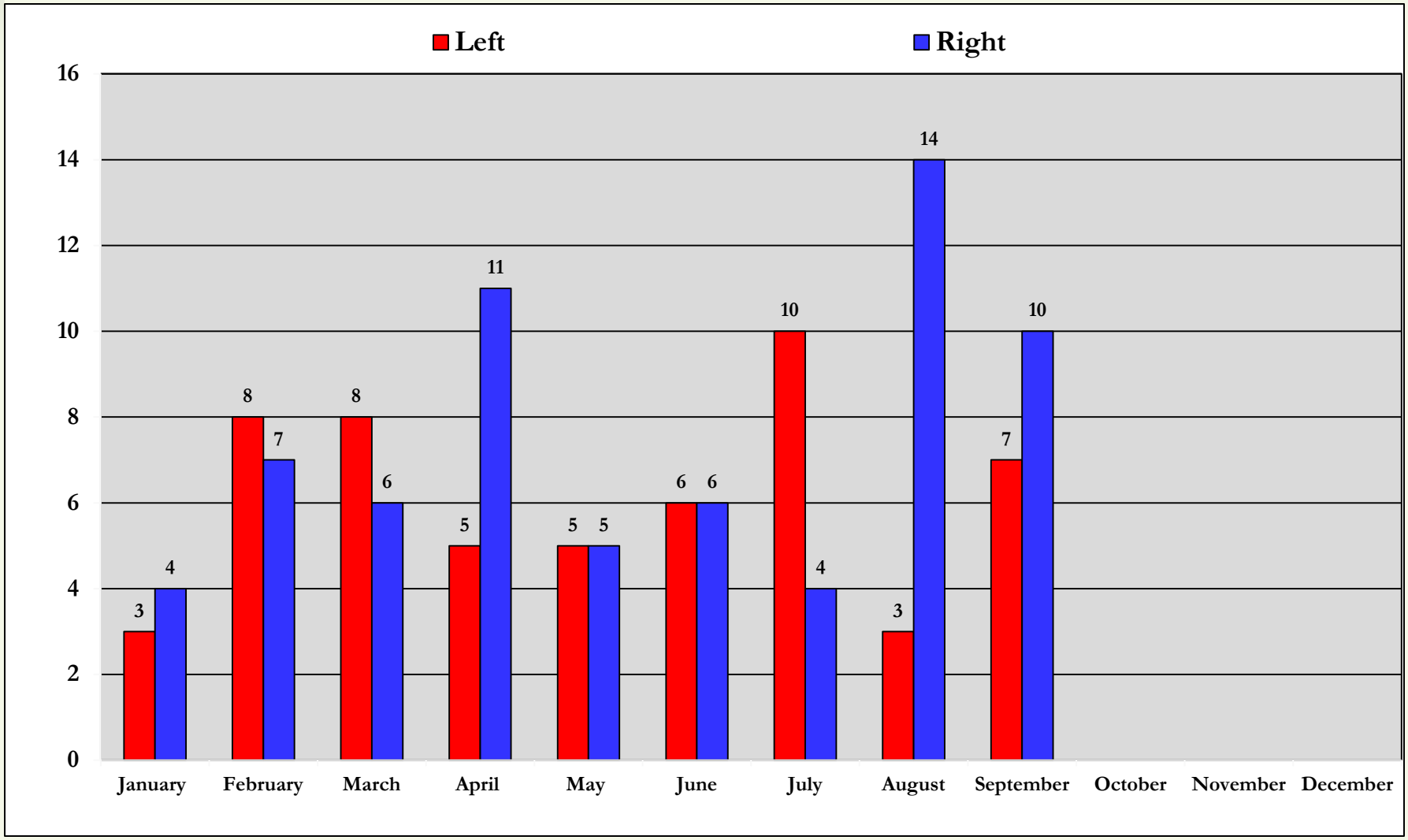

(c) 2004 GDT, Inc. and its licensors, Rel. 07/2004
Early Turn 0
Early Turn 1
Rwy 27 Dep Area
Early Turn 2
Early Turn 3
2 mi
N
< 1001
1001 - 2001
2001 - 3001
3001 - 6001
6001 - 12001
> 12001

Any Questions?



2012 Early Turns

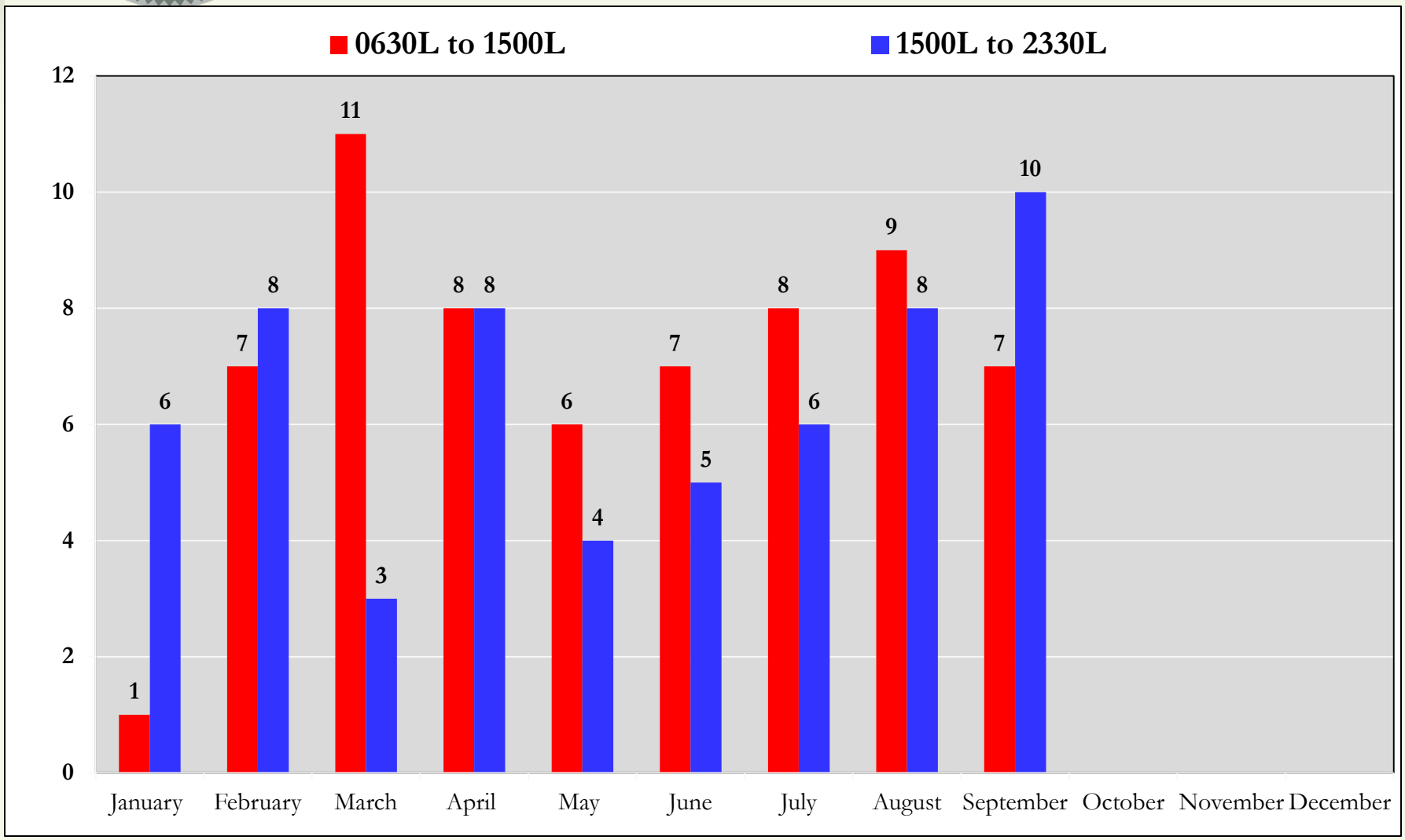
Total = 122; 55 Left & 67 Right



2012 Early Turns

Total = 122

0630 to 1500L = 64; 1500 to 2330L = 58



"Contra-Flow" Statistics Update

Airport Noise Advisory Committee

San Diego International Airport

October 17, 2012

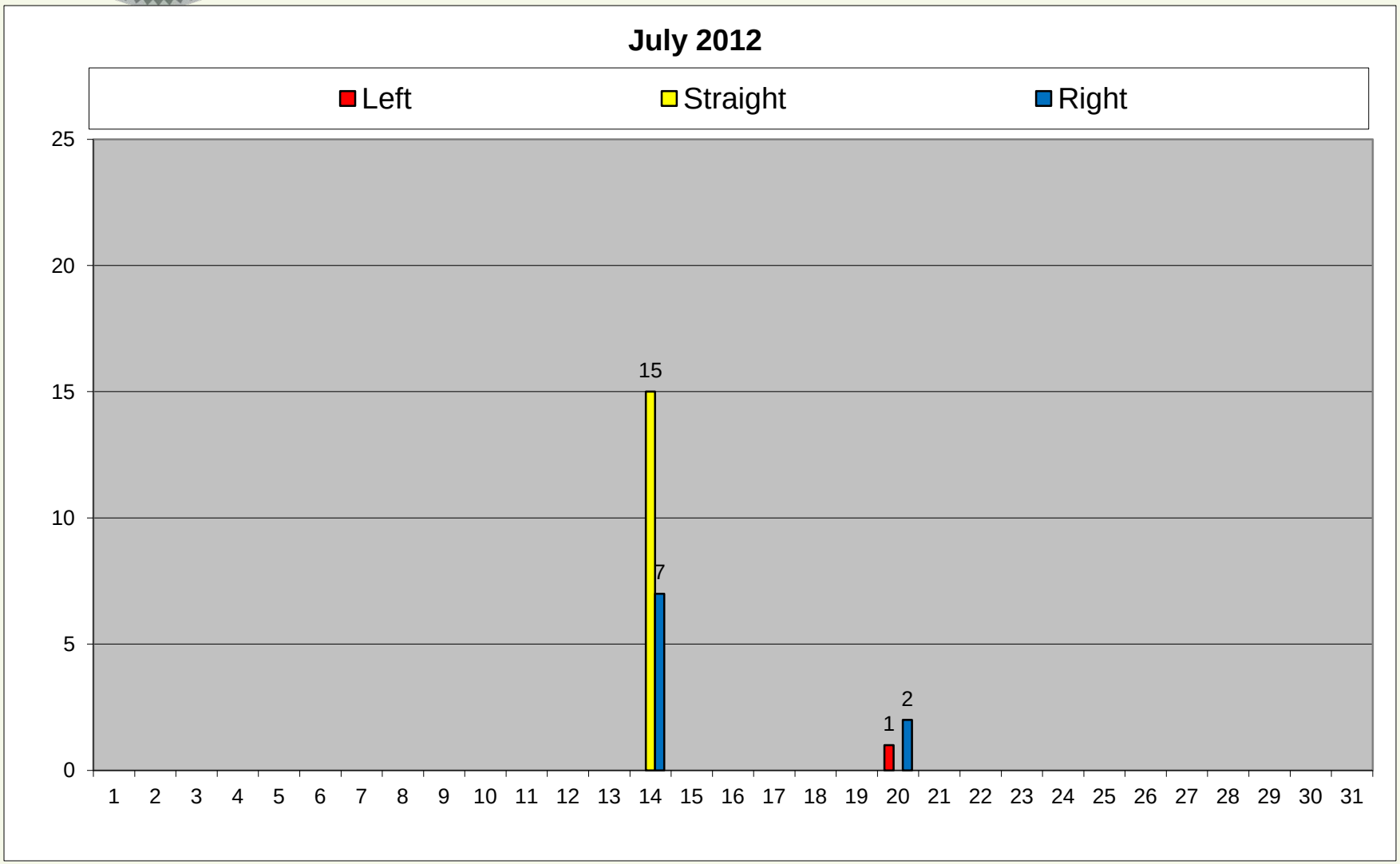
Contra-Flow Defined

What are "Contra-Flow" Air Traffic Operations?

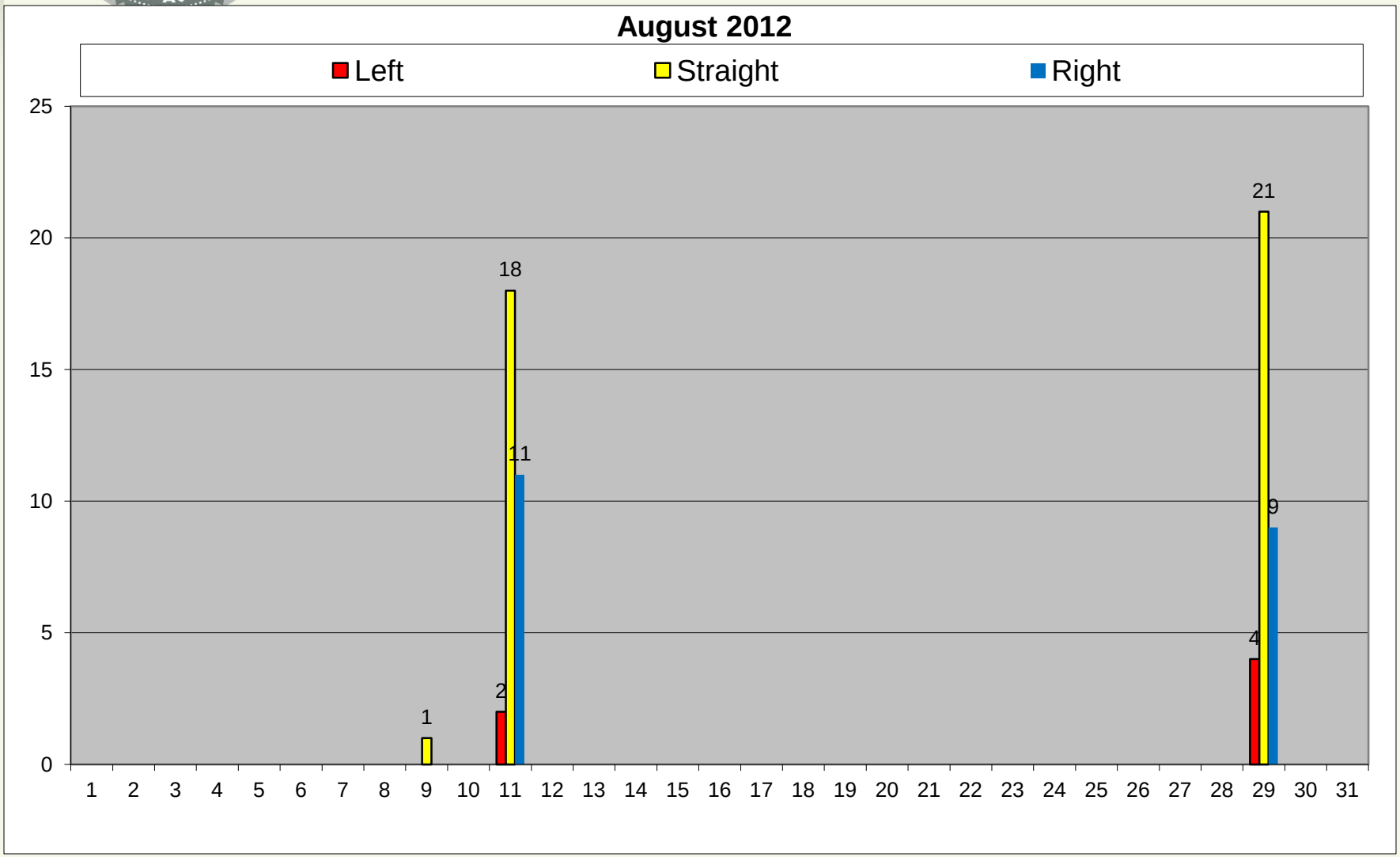
Contra-Flow operation is a air traffic control procedure used at SDIA when weather and/or aircraft weight play a factor in the arrival and departing phase of flight. Normal operations at SDIA consist of arrivals from the east and departures to the west. During Contra-Flow operations, aircraft arrive from the west and depart to the west on a reciprocal heading. Once airborne, departing aircraft are vectored south (over Point Loma) or north (over Mission Beach) to clear the airspace for arrivals into SDIA. These operations occur rarely and, for safety reasons, significantly reduce the operational capacity of the airport when they occur.

Link: http://www.san.org/documents/airport_noise/Airport_Noise_FAQs_2006.pdf

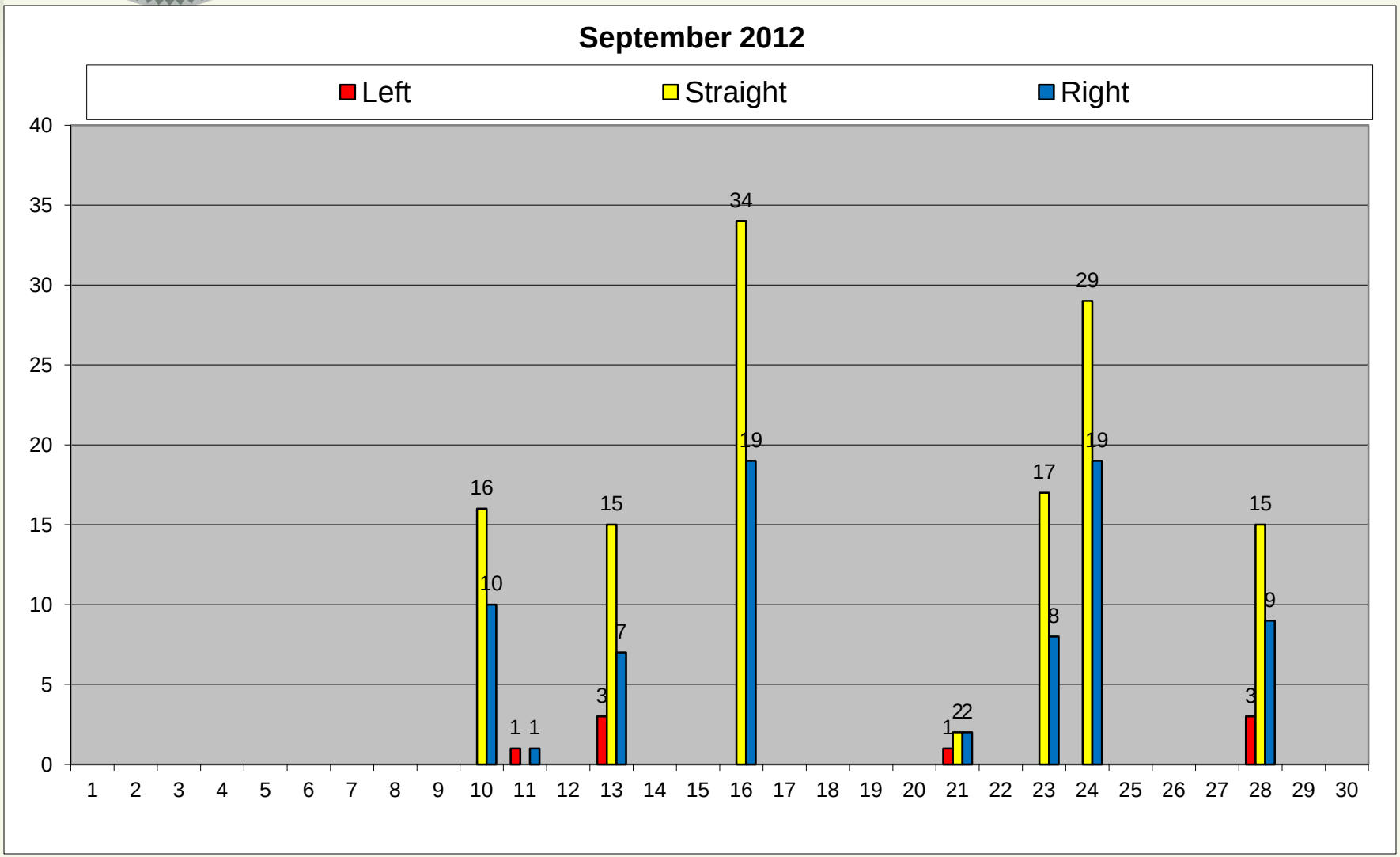
July 2012 Contra-Flow



August 2012 Contra-Flow

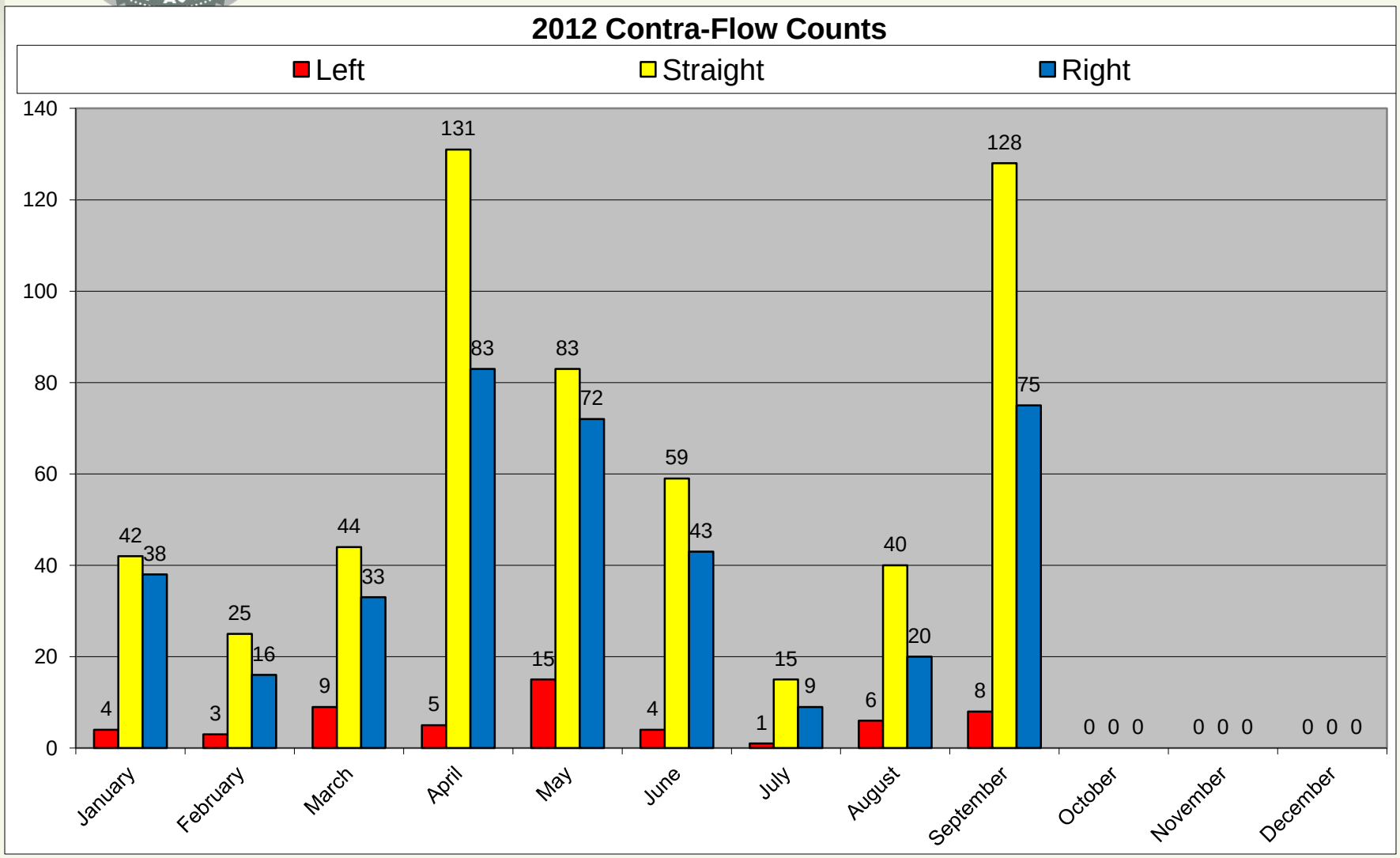


September 2012 Contra-Flow



2012 Contra-Flow Totals

Left 55/ Straight 567/ Right 389



Questions?

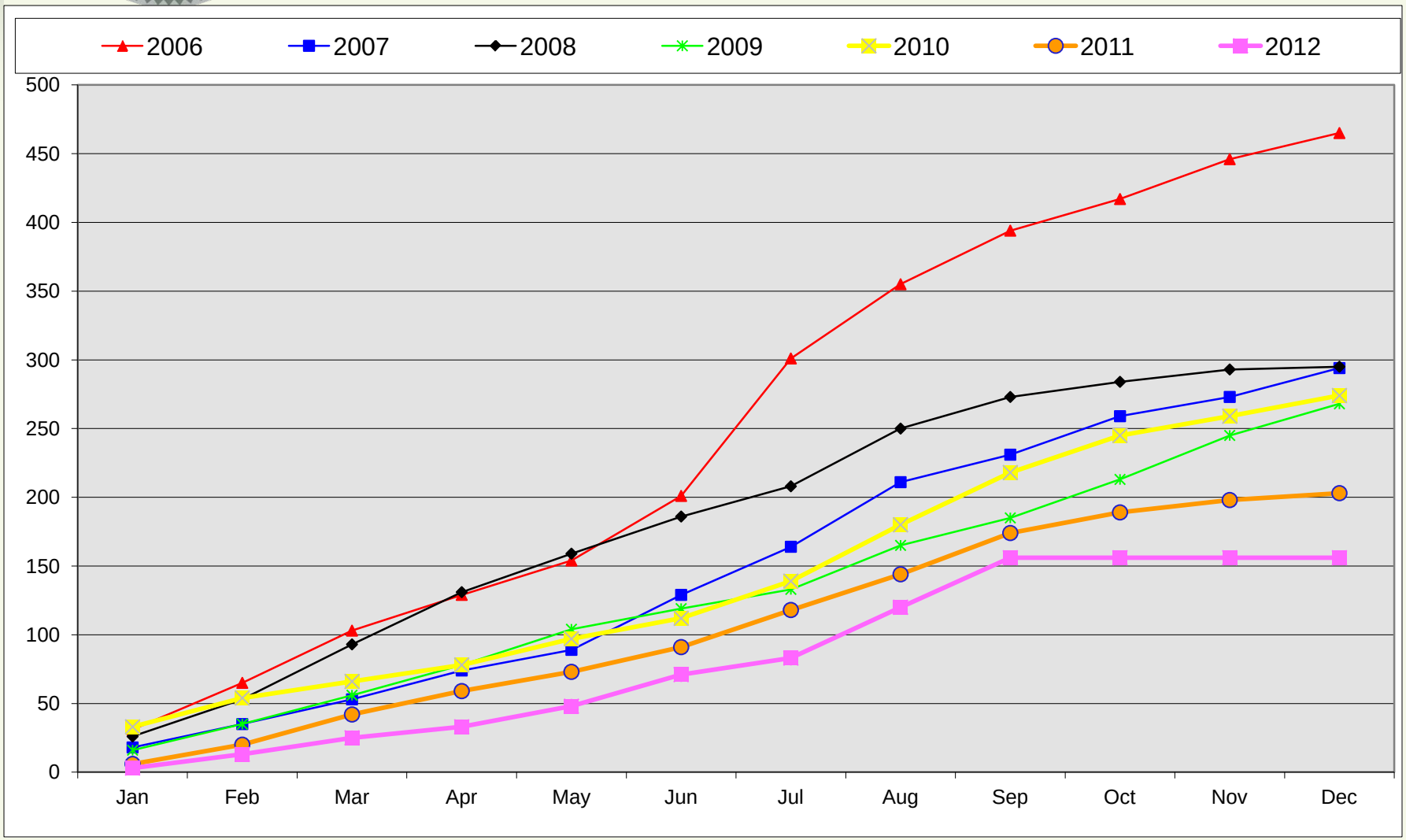
Complaints Statistical Update

Airport Noise Advisory Committee

San Diego International Airport

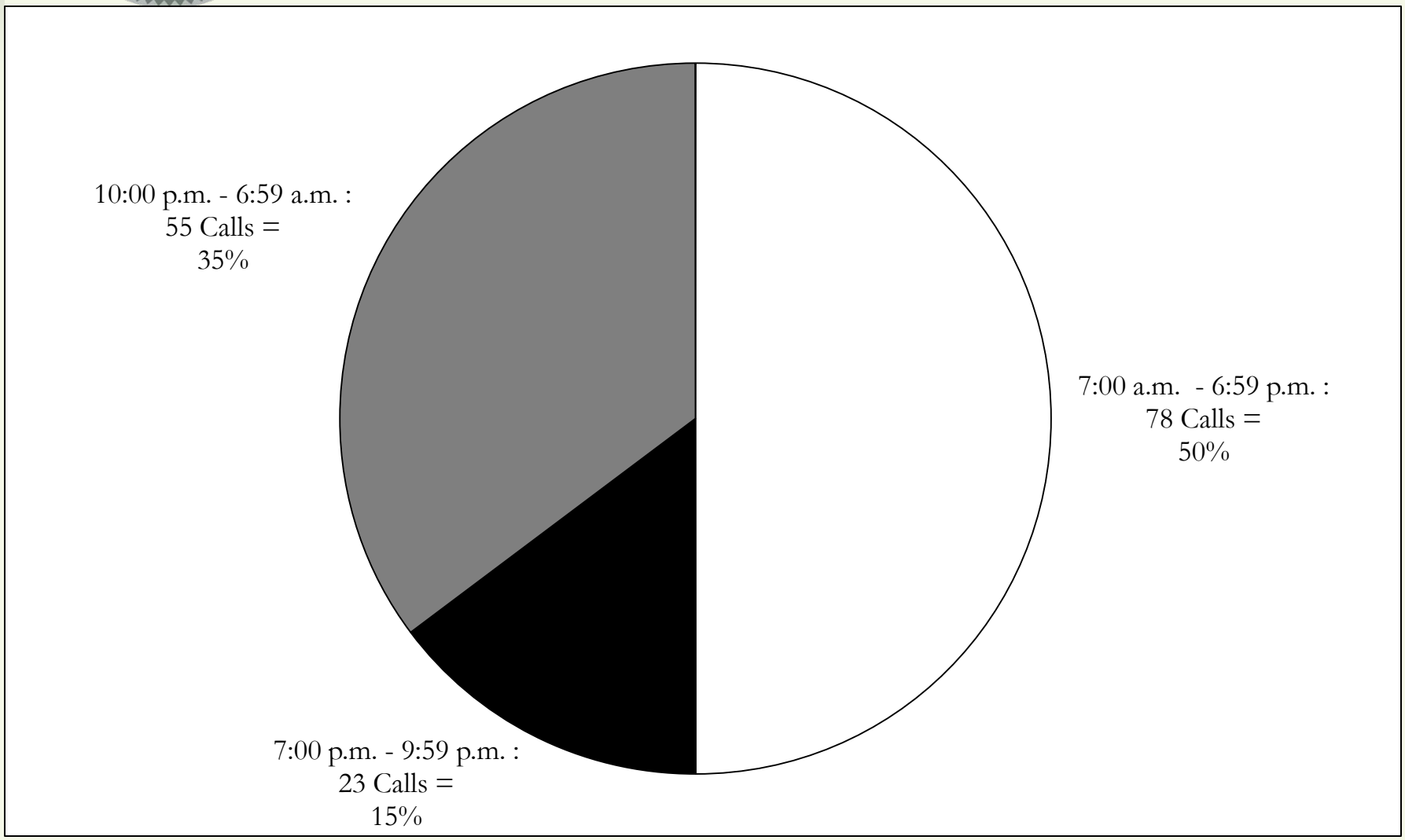
October 17, 2012

Complaint History – 2006-2012



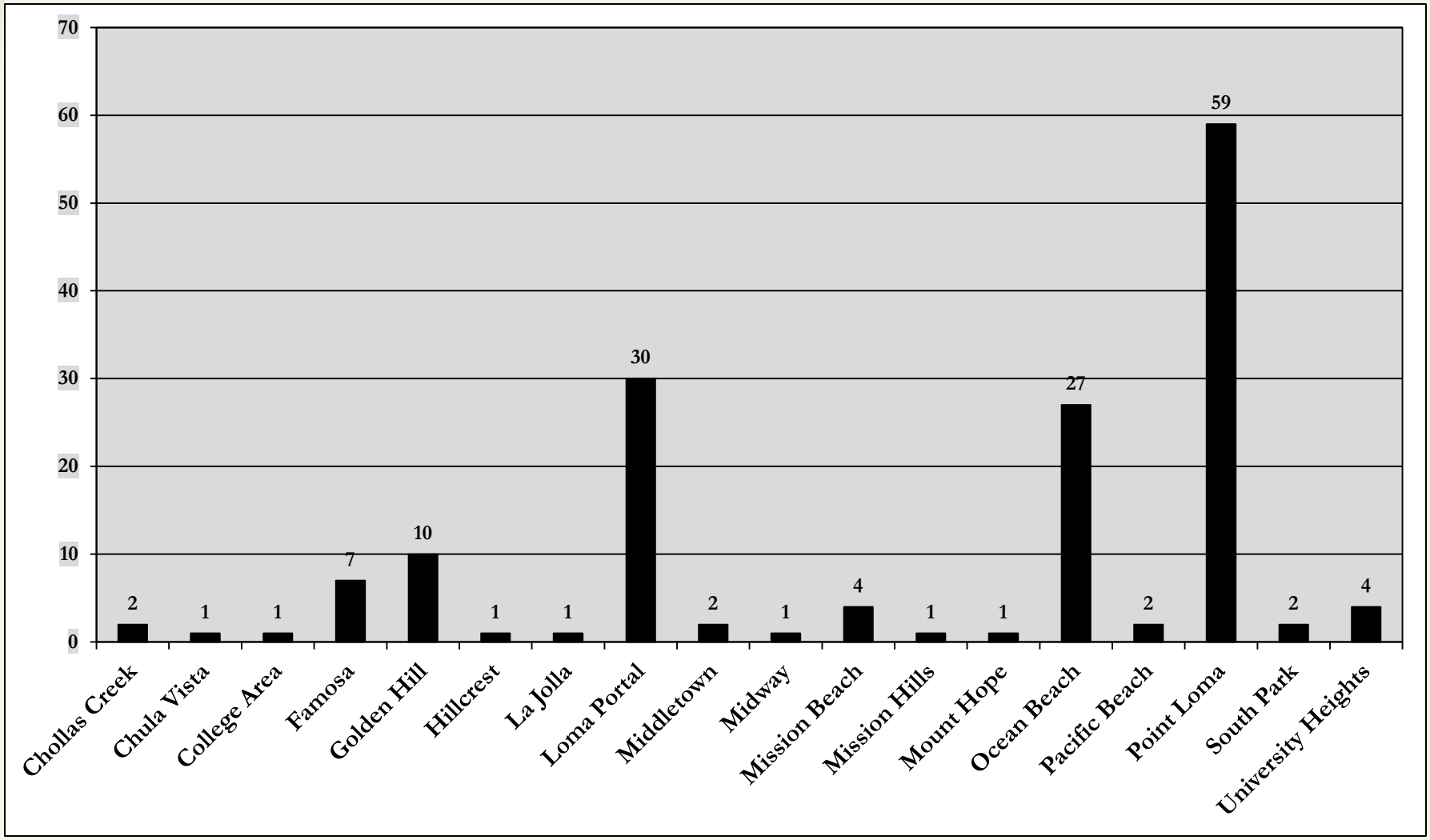
2012 Complaints Statistics

January to September, Complaints by Time of Day, 156 Total



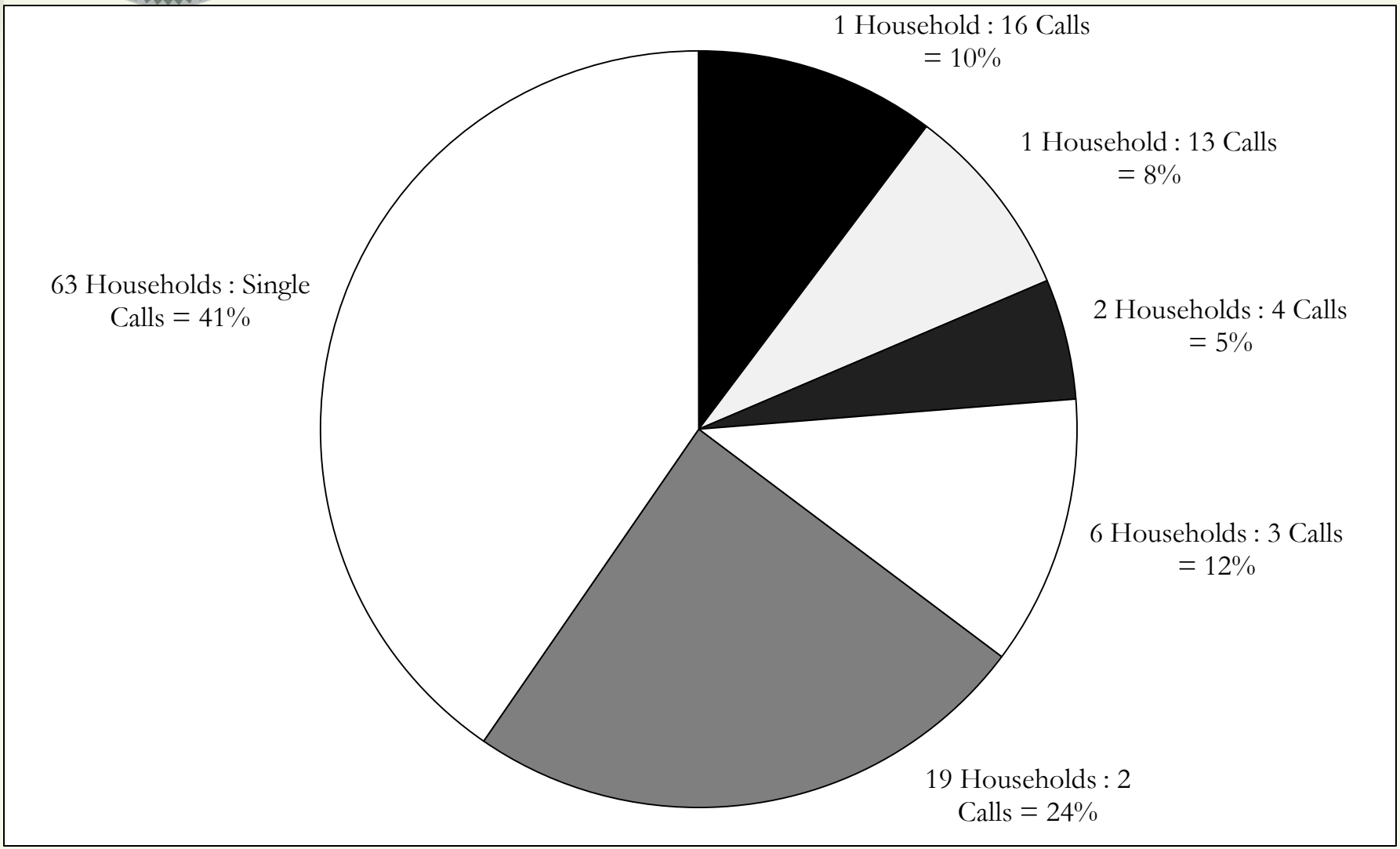
2012 Complaints Statistics

January to September, Complaints by Neighborhood, 156 Total



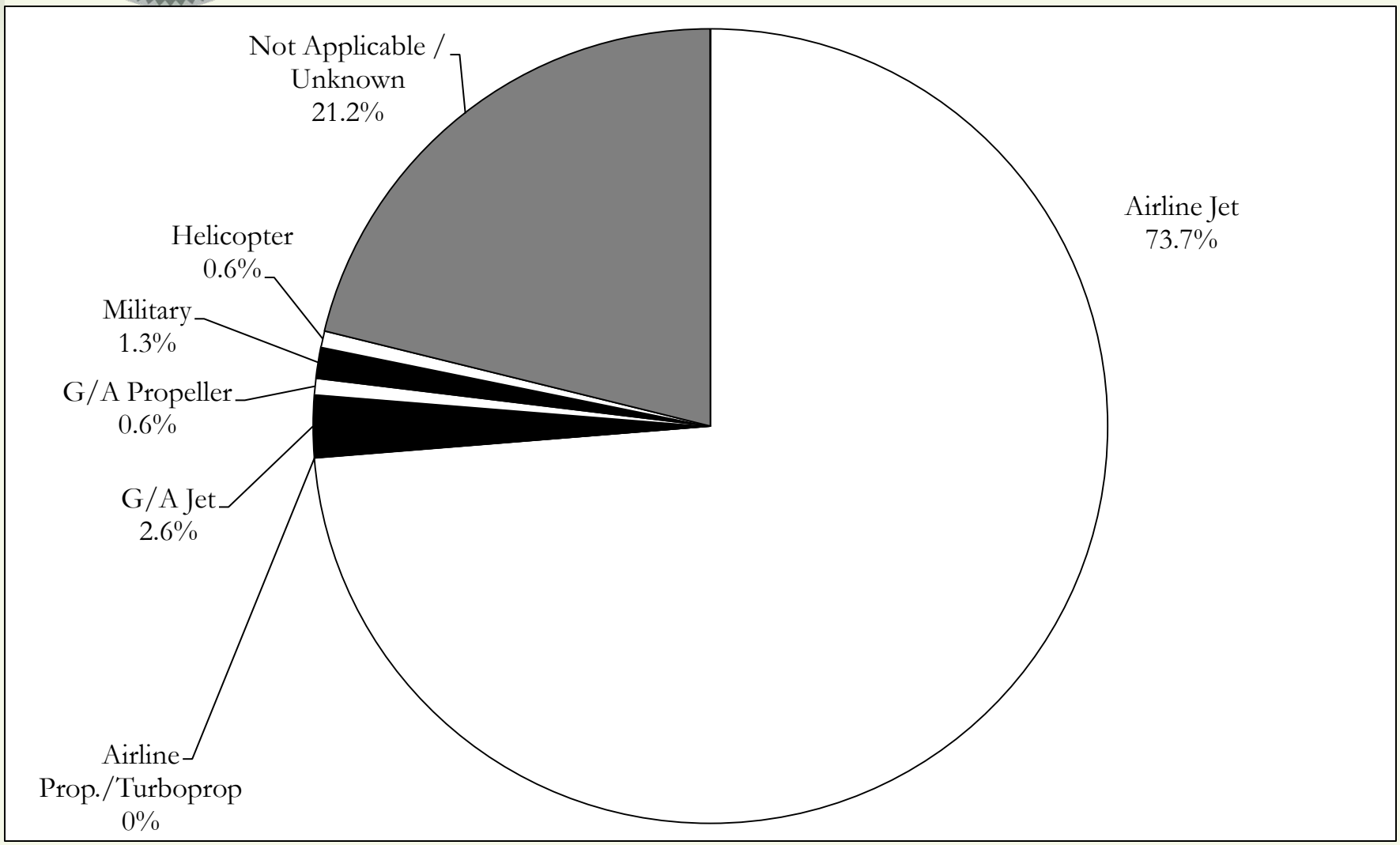
2012 Complaints Statistics

January to September, Complaints by Household, 156 Total



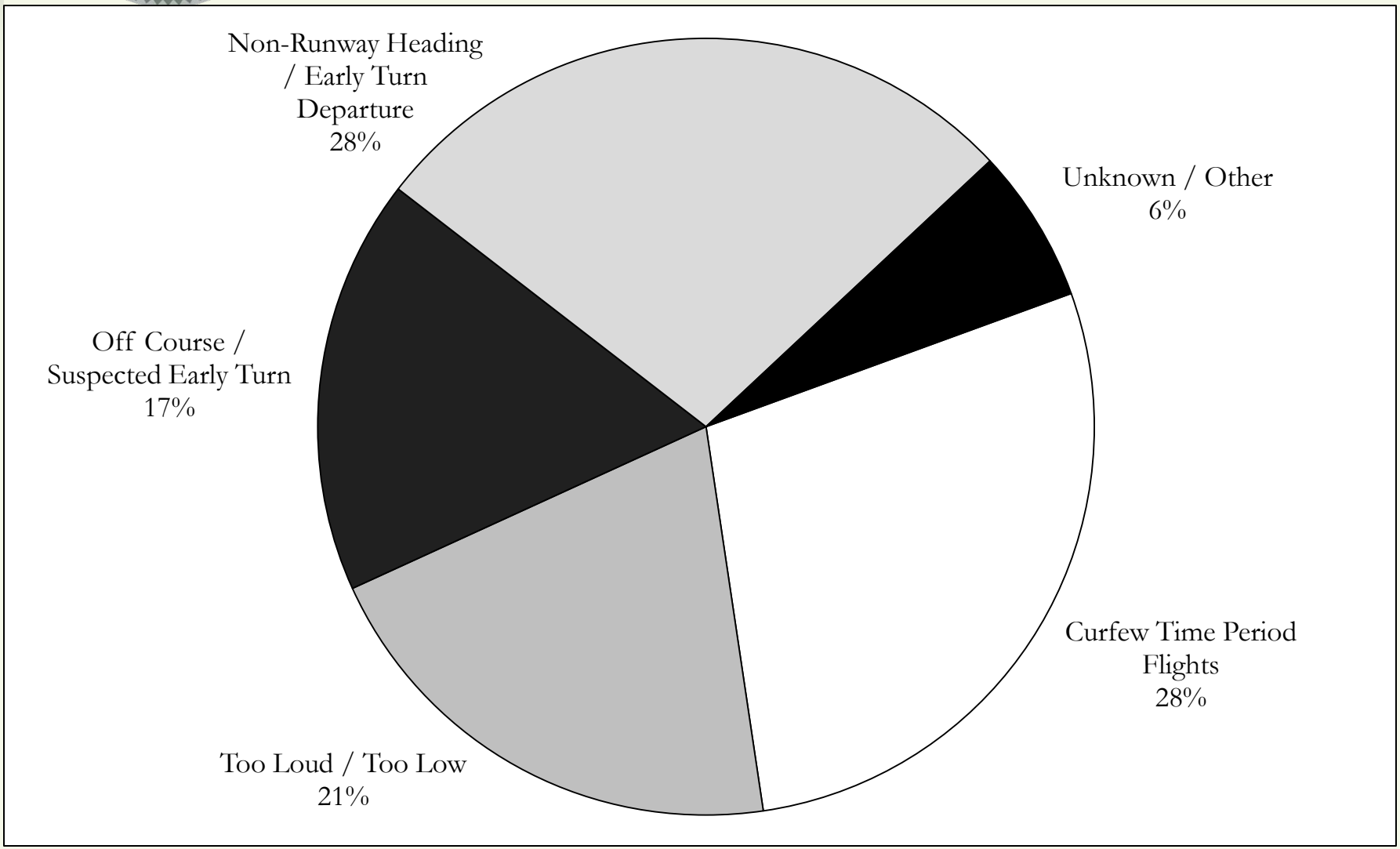
2012 Complaints Statistics

January to September, Complaints by A/C Type, 156 Total



2012 Complaints Statistics

January to September, Complaints by Cause, 156 Total



Any Questions?

Noise MATTERS

October 2012 • San Diego International Airport (SDIA) • Volume 28

FEDERAL AVIATION ADMINISTRATION CLARIFIES ELIGIBILITY FOR QUIETER HOME PROGRAM

For more than 30 years, the Federal Aviation Administration (FAA) has partnered with airports nationwide to fund sound insulation programs for homes and other structures adversely impacted by noise from airport operations. San Diego International Airport's (SDIA) Quieter Home Program was established in 1997, and the airport has successfully completed projects on six schools and more than 2,300 homes within its prescribed noise contour. The FAA has provided the bulk of the funding for these projects.

However, it came to the FAA's attention that there may have been some confusion and ambiguity in its guidance about the specific requirements for sound insulation project eligibility. The requirements are that federal grant funding is allowable only for homes that:

1. Are within the airport's FAA-approved 65 decibel (dB) Community Noise Equivalent Level (CNEL) contour, and
2. Have habitable areas inside the home with noise levels of 45 dB or greater with all windows closed.

The FAA issued a Program Guidance Letter on August 17, 2012 requiring stricter interpretation of eligibility based on these criteria, with enforcement to be phased in between now and September 30, 2015.

The exact number of homes affected by this clarification cannot be determined until new interior noise testing criteria are completed. We are in ongoing conversations with the FAA about this issue and are working with the FAA to establish interior noise testing criteria that take into consideration San Diego's unique characteristics and lifestyle.

SDIA is committed to completing sound insulation projects for as many homes as possible before September 30, 2015. We will continue to sound insulate homes after this date based on eligibility listed above and available funding.

We will keep you apprised as this evolves. In the meantime, if you have any questions, please contact us at (619) 400-2304 or noisematters@san.org.

GA Community Forces FAA to Rescind Policy Change on Blocking Flight Information

With help from a bi-partisan coalition of 26 senators on Capitol Hill, the general aviation community has forced the Federal Aviation Administration to rescind a policy change that made it much more difficult for operators of GA aircraft to block their flight information from public-access flight tracking displays.

The FAA was forced to withdraw its policy after the Senate coalition added to an appropriations bill funding the Department of Transportation through fiscal year 2012 language that bars FAA from expending any funds to stop GA operators from requesting that their flight information be blocked. The bill was signed into law last November by President Obama.

Dan Frazee, Director of Airport Noise Mitigation at San Diego International Airport, said he was disappointed by the policy rescission. Not allowing GA aircraft operators to block their flight information would have allowed for more accurate accountability for airports with noise restrictions, provided a more complete picture of airport operational traffic, and addressed residents' desire for transparency, he told ANR.

Pushing back strongly against the FAA's policy change, the general aviation community flexed its political muscle and enlisted the aid of Sen. Jon Tester (D-MT), a member of the Senate's General Aviation Caucus.

In July 2011, Tester wrote to Secretary of Transportation Ray LaHood to raise concerns over the FAA's policy change. Giving it political heft, Tester's letter was signed by 26 fellow senators on both sides of the aisle. Tester called FAA's action "a troubling reversal of a decade-old policy put in place to uphold the privacy rights of thousands of Americans."
"Claims have been made that revocation of this program is needed to promote greater transparency. While all Americans support an open and transparent government process, maintaining the BARR program is about the preservation of personal citizens' right to privacy and has nothing to do with shedding light on our federal government…"

"If the proposed changes are put in place, anyone with a computer and easily accessible tracking technology can cyber-stalk owners or operators of general aviation aircraft. We also are concerned that this decision sets a dangerous precedent for the ability of government to disseminate the travel information of any citizen regardless of the mode of transportation," Tester told LaHood.

FAA cited several reasons for making its policy change last June, including disclosure and openness requirements set forth in federal law, executive branch directives, and recent court decisions.

In particular, FAA noted President Obama's 2009 Open Government Memorandum announcing his commitment to "creating an unprecedented level of openness in Government"
and the Office of Management and Budget directive implementing the Memorandum, which states that, with respect to information, "the presumption shall be in favor of openness."

"Under these Executive Branch policies and directives, the FAA cannot retain the default position of concealing information about general aviation aircraft flights on public ASDI data-feeds simply because of generalized privacy or security concerns," FAA said last June before being forced by the Senate coalition to drop its policy change. But the FAA cited two recent court decisions dealing with exemptions to the Freedom of Information Act (FOIA) that informed its policy change and which still might provide an avenue to challenge the blocking of GA aircraft flight tracks.

NBAA argued in the case that the Flight Track data release could result in public knowledge of "sensitive negotiations, likely business transactions, or future movement of senior company leadership possibly jeopardizing their security as well as proprietary business information."

Airport Noise Advisory Committee Future Meeting Dates

October 17, 2012 4:00-5:30 p.m.
January 16, 2013 4:00-5:30 p.m.

Commuter Terminal, Third Floor
3225 N. Harbor Drive, San Diego, CA 92101

Enforcement of the Curfew
(Airport Use Regulations, Time of Day Restrictions)
January 1 - June 30, 2012

Date	Operator	Penalty
1/20/2012	Alaska Airlines	$2,000
2/17/2012	Canadian Military	$2,000
2/21/2012	N155AN	$2,000
3/5/2012	British Airways	No Penalty
3/15/2012	United Airlines	No Penalty
3/23/2012	United Airlines	No Penalty
3/26/2012	Delta Air Lines	No Penalty
4/12/2012	U.S. Airways	$2,000
4/22/2012	Delta Air Lines	$2,000
4/26/2012	jetBlue Airways	No Penalty
5/5/2012	Spirit Airlines	$2,000
5/21/2012	jetBlue Airways	No Penalty
6/11/2012	Spirit Airlines	$6,000
6/22/2012	United Airlines	No Penalty
6/23/2012	jetBlue Airways	$2,000
6/30/2012	Spirit Airlines	$10,000

Operators in violation of the Airport Use Regulations, Time of Day Restrictions, may be subject to the following administrative penalties:

1st Offense per compliance period --- $2,000

2nd Offense per compliance period --- $6,000

3rd (or more) Offense per compliance period --- $10,000

Additional penalties may result in loss of operating privileges. Each compliance period is 6 months. Penalty amounts are multiplied by the number of violations in the previous compliance period.

The San Diego County Regional Airport Authority extends its appreciation to *U.S. Airways* for canceling flights during 2012 rather than departing during the Curfew.

World Green Aviation Council Certifies First "Green Airline"

Air Transat, Canada's third largest airline, became the world's first certified green airline. Awarded by the World Green Aviation Council, the certification rates airlines on their environmental management practices, daily operational activities, and corporate policies and strategic planning. The Montreal-based air carrier is committed to the following actions through its environmental policy:

- respect environmental protection regulations and, where possible, exceed the requirements;
- understand, analyze, measure, and minimize the environmental impacts of its activities;
- establish an environmental management system with clear targets for enhancing performance; reduce or optimize resource use and fight waste;
- prevent and reduce sources of pollution and garbage;
- promote its environmental policy and encourage responsible individual behavior among its employees and customers;
- urge suppliers of tourism services to commit themselves to continuous improvement of environmental performance;
- promote eco-responsible products and services without sacrificing quality or performance;
- co-operate with efforts by governments, businesses, non-governmental organizations, and industrial associations in favor of environmental stewardship;

Noise Matters

San Diego County Regional Airport Authority
Airport Noise Mitigation
P.O. Box 82776
San Diego, CA 92138-2776

SAN DIEGO INTERNATIONAL AIRPORT

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Noise Matters is published periodically for the residents neighboring San Diego International Airport (SDIA).
We welcome your comments and suggestions. For additional Airport Noise related information, please call 619-400-2781.
For noise complaints 24-hours, call 619-400-2799.