

PHX DVT BYR

☉ CITY OF PHOENIX AVIATION DEPARTMENT



Annual Noise Report 2015

Table of Contents

Background Information

- Introduction Page 3
- Year in Review Page 3
- 2015 Data Summary Page 8

Phoenix Sky Harbor International Airport

- Historical Annual Operations and Fleet Mix Comparisons Page 9
- Annual Noise Complaints by Jurisdiction Page 10
- Annual Complaints Versus Households Page 10
- 2015 Noise Complaints by Zip Code Page 11
- 2015 Phoenix Sky Harbor International Airport Runway Utilization Page 12
- 2015 4 DME Departure Procedure Compliance Page 13
- 2015 Noise Monitoring Site Measurements Page 14
- 2015 Temporary Noise Monitoring Sites Page 15

City of Phoenix General Aviation Airports

- Deer Valley & Goodyear Airports Annual Operations Page 16
- Deer Valley & Goodyear Airports Annual Noise Complaints Page 17

Introduction

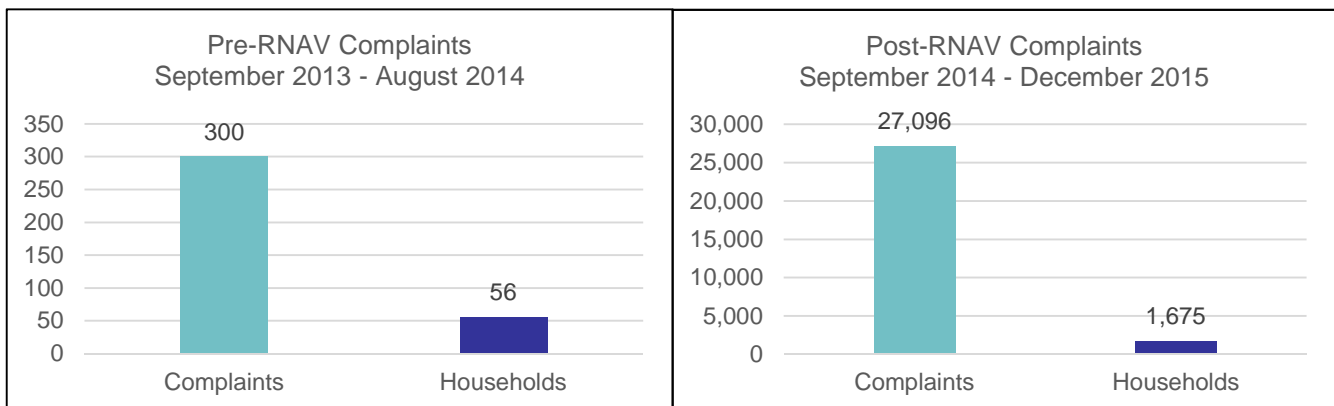
This report summarizes annual trends on issues regarding noise exposure from the City of Phoenix's three airports, Phoenix Sky Harbor International (PHX), Phoenix Deer Valley (DVT), and Phoenix Goodyear (GYR) for calendar year 2015. The report includes information on operational counts, aircraft fleet mix, noise complaints, runway usage, noise abatement procedures, noise monitoring, and general aviation activity.

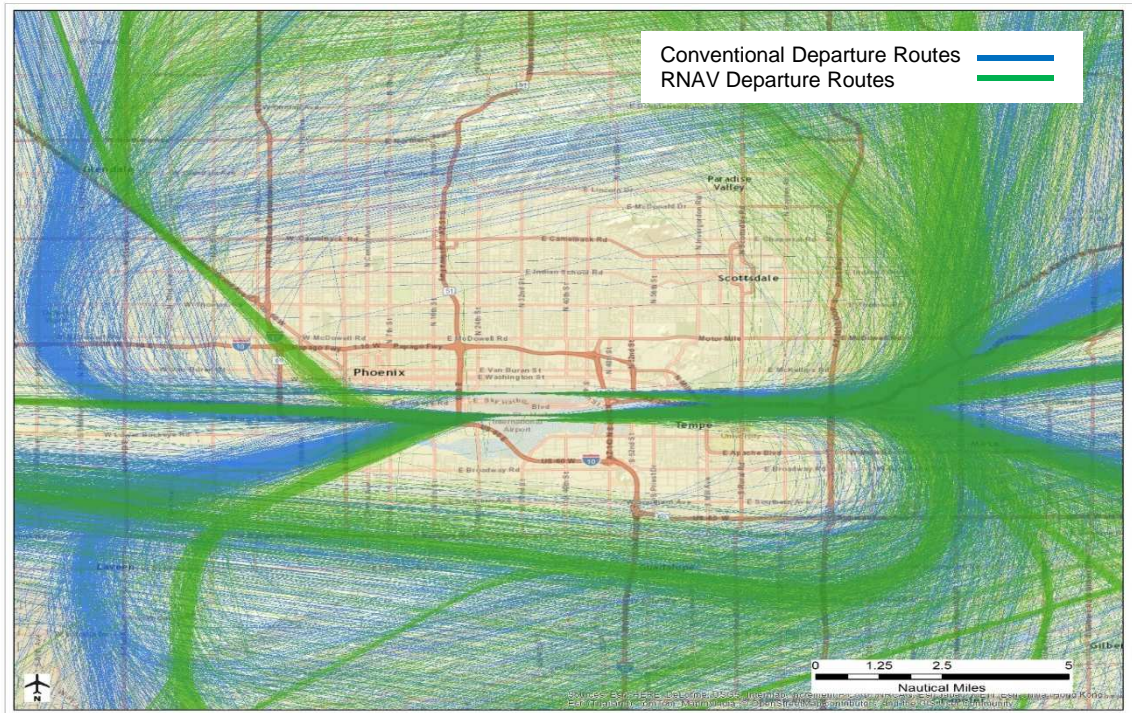
The City of Phoenix is dedicated to minimizing noise exposure to surrounding communities from aircraft operations through a variety of outreach efforts. Airport staff meets regularly with community groups, elected officials, appointed advisory boards, airline officials, aviation working groups, the Federal Aviation Administration (FAA), and other aviation users in a continued effort to increase awareness of the importance for all aircraft operators to fly in a neighborly fashion. One of the goals of this report and our outreach is to share information with the public and to encourage further communication between all parties involved regarding the issue of noise exposure.

Year in Review

On Sept. 18, 2014 the Federal Aviation Administration (FAA) implemented changes in flight paths to and from Phoenix Sky Harbor International Airport as part of its effort to streamline departures and arrivals using NextGen satellite-based navigation. NextGen is the FAA's extensive air traffic management modernization program that through satellite-based navigation (RNAV) and digital communication systems is intended to increase operational efficiencies, remove human risk factors from airspace management and reduce environmental impacts such as emissions and noise. However, with the implementation of NextGen, the FAA made significant changes (and resulting quality of life changes) without properly notifying the public or allowing the public to provide input in the airspace redesign process.

Many communities across the country, including Phoenix, have been greatly affected by the flight path changes associated with RNAV implementation. The new routes condensed and lowered flight corridors over thousands of homes, historic districts, natural preserves and parks. From September 2013 – August 2014, airport staff had received approximately 300 comments concerning noise from 56 households. Since RNAV implementation, **27,096** comments from **1,675** households have been filed through 2015.





The following information provides a summary of the Airport's activities related to managing and resolving noise impacts resulting from the FAA's September 2014 flight path changes.

Lawsuit

The City of Phoenix asked the FAA to consider several viable alternatives to the flight path changes; all of these proposed alternatives addressed the FAA's intended implementation benefits (airline fuel savings and increased airspace capacity) while also reducing the noise impacts to Phoenix area residents. The FAA rejected all of these options without any validation or justification. The FAA did provide the City with its own set of new alternatives, none of which reduced community noise impacts. After it was made clear that the FAA would not take seriously community quality of life issues, the City of Phoenix was forced to file a petition for review (lawsuit) against the FAA.

A petition for review is a formal request to a U.S. Court of Appeals to review the legality of an agency's administrative decision. In the City of Phoenix legal challenge, the City filed a petition for review with the Court of Appeals for the District of Columbia seeking a declaration from the Court that the FAA's implementation of RNAV routes and procedures in the Phoenix airspace violated federal law.

On July 31, concerned leaders of several historic Phoenix neighborhoods announced the filing of their own Petition for Review. The Petition, filed on behalf of the residents of FQ Story, Willo, Encanto-Palmcroft, Roosevelt, and Woodland historic districts in Phoenix protested the continued use of RNAV arrival and departure routes at PHX. The City and neighborhood Petitions were consolidated in November 2015. The Court has directed that the City, neighborhoods and FAA brief all of the issues in the case, so that the Court can make a decision regarding the entirety of the case.

Metroplex

Phoenix is one of 21 areas in the United States where the FAA is implementing or planning to implement its Metroplex program. Metroplex looks at the entire airspace and all airports that use the airspace, and examines how technology can be implemented to improve safety, efficiency, capacity, and environmental impacts. The PHX Metroplex project will analyze aircraft arrival and departure procedures at a number of airports in a 200 mile radius of Phoenix and specifically includes: Phoenix Sky Harbor International Airport (PHX), Phoenix-Mesa Gateway Airport (IWA), Scottsdale Airport (SDL), Phoenix Deer Valley Airport (DVT), and Tucson International Airport (TUS). The project may involve changes in aircraft flight paths and/or altitudes in certain areas.

The Phoenix Aviation Department has sent letters to the FAA formally requesting that the FAA conduct community outreach in preparation for its Metroplex study. A coalition of Arizona Airport Managers, along with the League of Arizona Cities and Towns has also written to the FAA encouraging engagement and inclusion of local communities in the Metroplex process. In December 2015, the FAA acknowledged the need for better community coordination and put the Phoenix Metroplex project on hold so that additional outreach measures can be developed.

Staff is monitoring other regions that have also been negatively affected by RNAV implementation. Unlike in Phoenix, the FAA has initiated public meetings in communities such as Boston, Charlotte, Washington, DC and South Central Florida, to consider interim airspace changes based on community concerns. Of particular note, staff is closely tracking the FAA's Metroplex actions in Northern California where wide community opposition to proposed RNAV routes appears to have caused the FAA's re-evaluation of routes and community impacts.

Community Outreach and Engagement

The objective of community outreach and engagement is to educate the public and provide factual information in order to foster a better understanding of the technical aspects of the flight path issue, and to generate ideas for solving the associated noise problems.

Community Outreach Meetings

Throughout January and early February, staff hosted four meetings to collect information and feedback from the community. The feedback and information collected was sent to the FAA. Then in March and early April, the department hosted additional outreach meetings to provide summaries of the temporary noise measurement results (see page 15) and to answer questions. Over **500** residents attended the **8** community meetings.

Coffee Chats

During the months of July and August, staff held numerous Coffee Chats, meeting with community members in their homes and at local coffee shops. These small group gatherings allowed for a healthy exchange of information about how the city staff and residents can work together to get the FAA to address the flight path issues in Phoenix. A total of **45** residents participated in **9** coffee chats.

Workshops

In response to the popularity of the coffee chats and the technical questions that resulted, staff held **7** Open House workshops between August 25 and October 27. The Open House workshops allowed an opportunity for residents to ask technical questions pertaining to the FAA's flight paths, as well as provided access to technical airspace planning experts to answer questions. Over **75** residents attended the workshop held at the Tempe Public Library in October 2015.

Public Meeting Presentations

Since November 2014, the Aviation Department has provided monthly flight path updates to the Phoenix City Council Downtown, Aviation and Redevelopment Subcommittee. Staff has also made presentations to several of the city's Village Planning Committees, including the Central City, Encanto, Estrella, and Laveen villages. Staff also provided updates and technical presentations to neighboring cities at the Tempe Aviation Commission (TAVCO) as well as the Glendale and Tempe City Council meetings.

Neighborhood Groups and Community Organizations

In addition to the open houses, workshops and public meetings held, staff also provided presentations to several home owners' associations, neighborhood groups, block watch organizations and community associations in Phoenix, Tempe, Glendale and Scottsdale.

Online Tools and Resources

In an effort to improve noise reporting methods that simplify and respond to the specific needs of community members, the Aviation Department made improvements to its online flight tracking and complaint system. The department also dedicated a section of Sky Harbor's website to the flight path issue.

Flight Path Website

Skyharbor.com/flightpaths offers updates, flight tracking and numerous options for reporting noise concerns. In May 2015, the Aviation department launched a listserv so that community members could receive updates on the flight path issue. The direct email list provides updates to subscribers on new developments in the effort to bring relief to the community. There are currently **168** subscribers receiving flight path updates.

Flight Tracking and Complaint System

In June 2015 the Aviation department transitioned its web-based noise complaint submittal form, database and phone system to a more robust solution hosted by a third party vendor to enhance the availability and reliability of the system. Through a flight tracking system called PublicVue, users can view flight information as well as submit noise concerns directly within the application.

Legislation and Lobbying

Phoenix leaders, members of Arizona's Congressional delegation and neighborhood leaders have advocated for relief to those impacted by flight path changes by:

- > Requesting letters from the Arizona congressional delegation be sent to the FAA
- > Coordinating support from other communities impacted by NextGen/RNAV implementation locally and nationwide
- > Attending industry (American Association of Airport Executives, Airports Council International) meetings to tell the Phoenix story and advocate for legislative changes
- > Coordinating with Congress to pursue legislative relief as part of the FAA Reauthorization Bill

On December 16, 2015, Congress approved FAA funding for FY 2016. This omnibus bill required the FAA's proactive role in engaging communities that are impacted by new departure and arrival procedures, especially when the agency chooses to utilize a categorical exclusion as part of the environmental review process. The agreement does not include retrospective provisions but rather broad language requiring FAA to update its community involvement manual and implementation plan. The 2016 reauthorization will expire in July 2016.

Airline Outreach and Coordination

Staff has held meetings with airlines and cargo operators to request the use of legacy departure routes during west-flow between 10 p.m. and 7 a.m. Despite ongoing communication, there has been no resolution or action by the airlines to utilize the legacy routes at night.

Coalition of Other Cities and the Industry

Staff continues to reach out to industry groups and other airports to gain nationwide support on the flight path issue. Staff is working with other cities and industry groups such as the Airports Council International (ACI) and American Association of Airport Executives (AAAE) to support related lobbying efforts on behalf of all airports across the country. Coordination and collaboration also continues between staff and other regions negatively affected by RNAV implementation and recent Metroplex actions (Boston, Washington, D.C., New York, Northern California, Southern California, South Florida).

Enhanced Aviation Noise Program

The Phoenix City Council authorized the Aviation Department to hire additional staff members to enhance the Aviation Department's noise program. The Department has created a dedicated Airspace and Noise Section, and added a program manager, and three planner positions. The additional staff members assist the airport in handling the additional workload in responding to noise concerns, add airspace expertise to the team and provide increased responsiveness to the community.

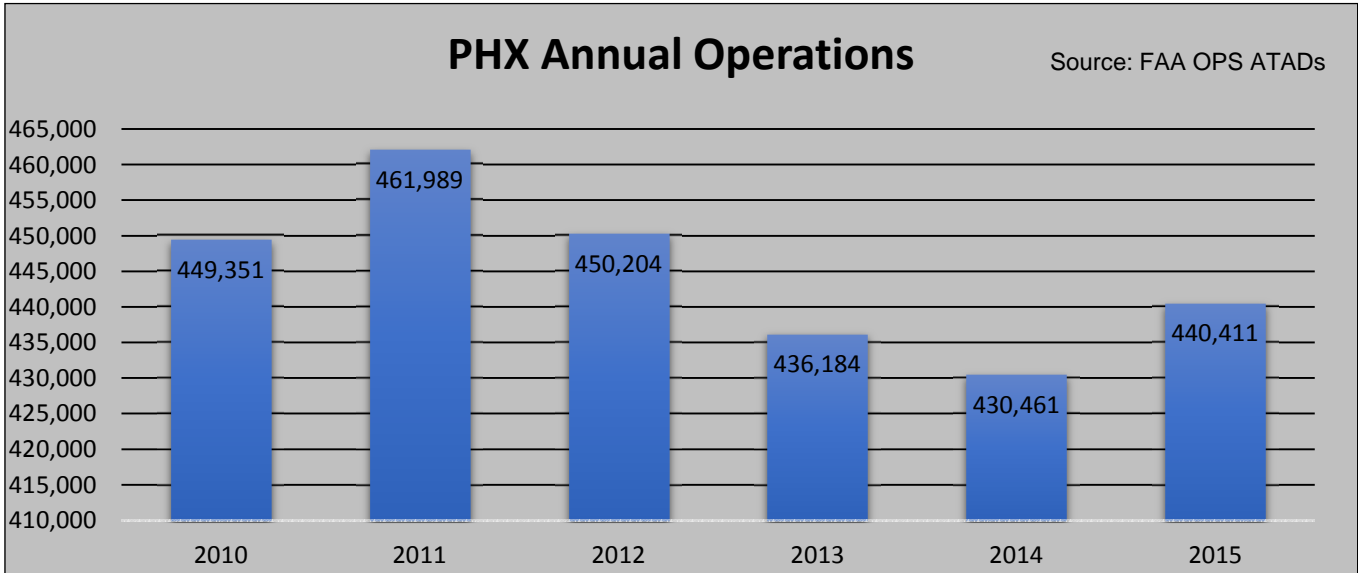
2015 Data Summary

- In 2015, aircraft operations increased at Phoenix Sky Harbor International Airport by 2.31% from 430,461 operations in 2014 to 440,411 operations in 2015. Phoenix Deer Valley Airport handled 369,759 operations in 2015 compared to 339,493 operations in 2014, representing a 8.92% increase. Phoenix Goodyear Airport handled 111,330 operations in 2015 compared to 83,516 operations in 2014, equating to a 33.30% increase.
- The City of Phoenix Aviation Department received 24,247 complaints from 1,338 households in 2015 regarding Phoenix Sky Harbor International Airport, 717 complaints from 94 households regarding Phoenix Deer Valley Airport operations and 40 complaints from 22 households regarding Phoenix Goodyear Airport operations. The drastic increase in complaints received is directly attributed to the flight path changes implemented by the FAA in September 2014.

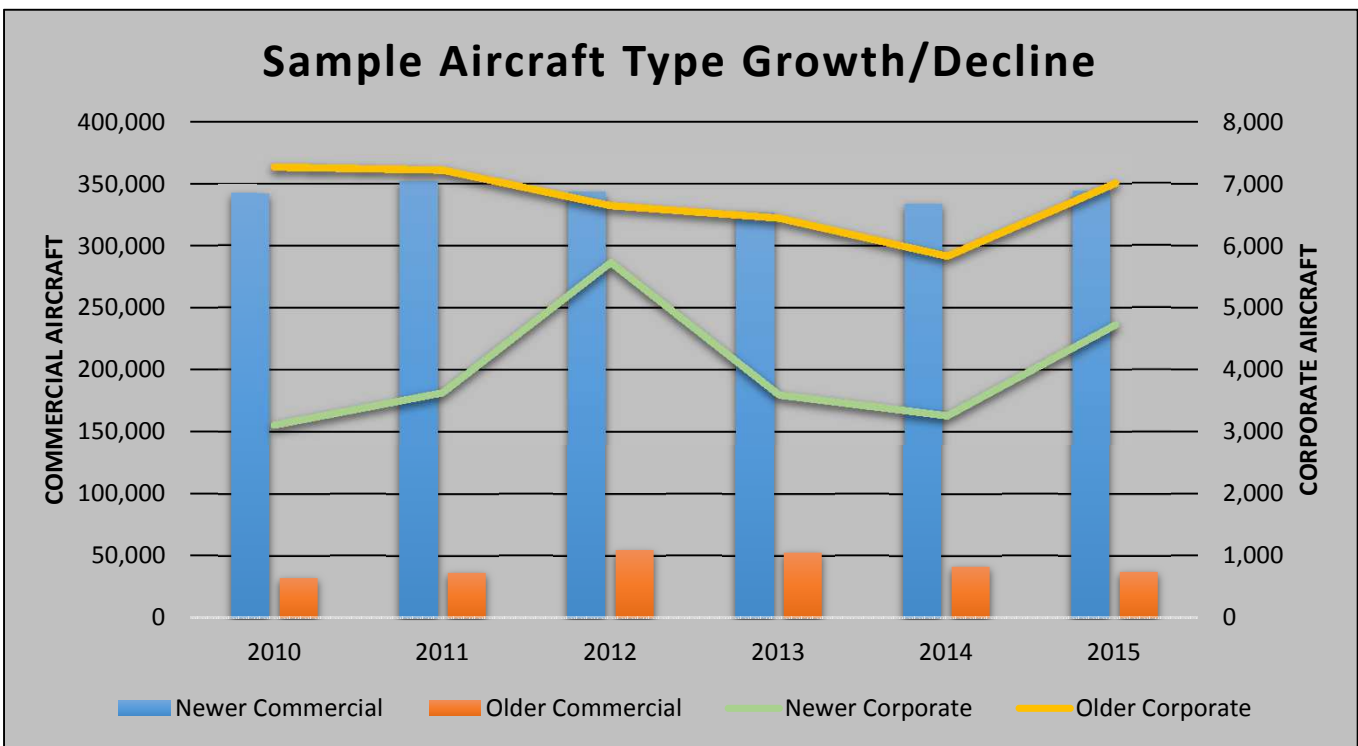
Noise Abatement Procedures

- Phoenix Sky Harbor International Airport has a goal to equalize the amount of aircraft departures between the east and west over an annualized period. Runway equalization helps to even the distribution of noise exposure in the surrounding communities. **In 2015, PHX operated in west flow 48.55% of the year and 51.45% in east flow.**
- All jet aircraft departing from PHX to the east are directed to fly generally along the Salt River for 5 miles before turning. The 4 DME procedure is designed to keep aircraft over the Salt River area and minimize noise exposure to residential areas. **In 2015, compliance with the 4 DME Departure Procedure was 99.34%, representing the highest compliance rate to date.**

Historical Annual Operations and Fleet Mix Comparisons



Operations at Phoenix Sky Harbor International Airport increased 2.31% in 2015.



Newer Commercial: jets with inaugural flights in 1995 or later such as the Airbus 321 and Canadair RJ900
 Older Commercial: jets with inaugural flights before 1995 including hush-kitted models like the Boeing 727 and DC9
 Newer Corporate: jets with inaugural flights in 1995 or later such as the Cessna 680
 Older Corporate: jets with inaugural flights before 1995 such as the Lear Jet 24

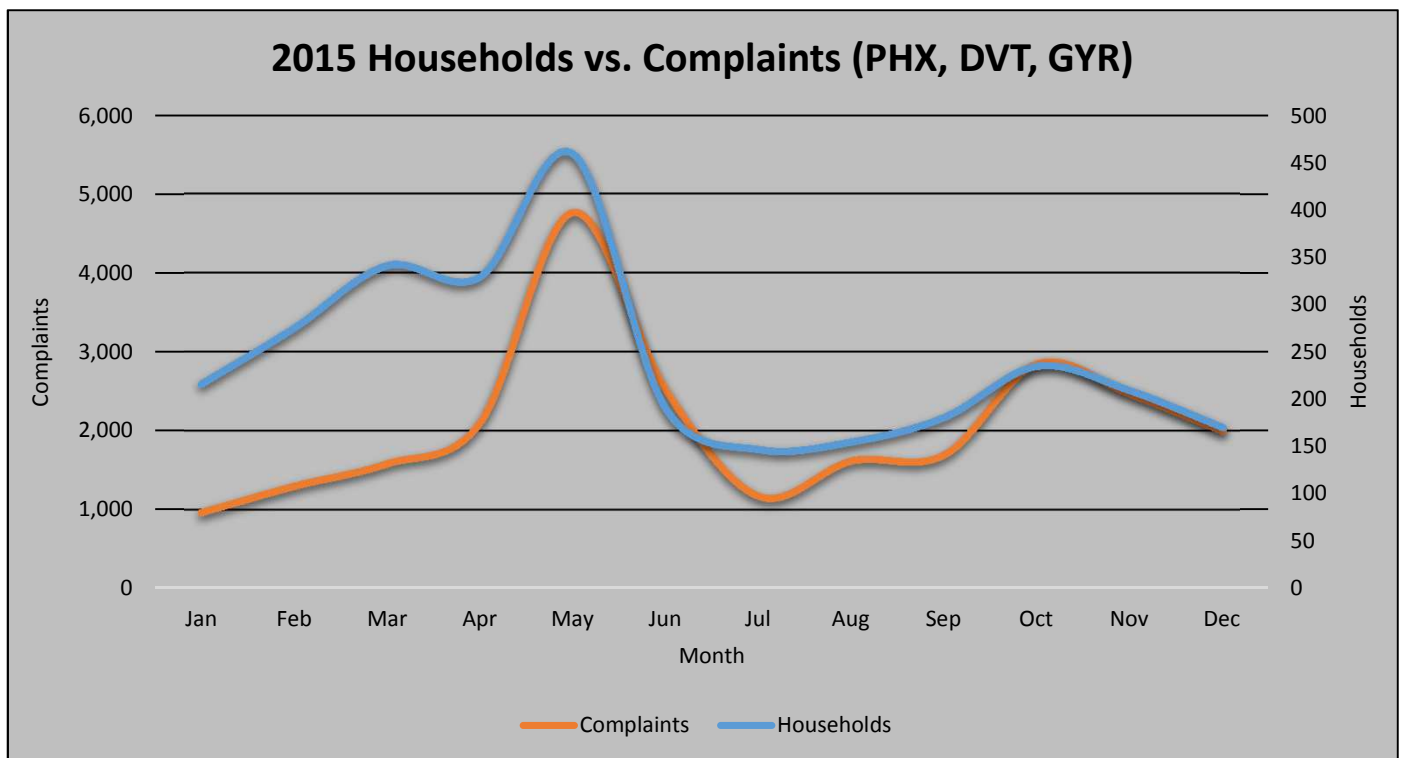
In 2015 the commercial service fleet mix saw an increase in the use of Airbus 321 and Boeing 737 operations and a decrease in McDonnell Douglas MD 80 and Canadian Regional Jet 700/900 operations. Compared to the previous year, the number of newer commercial jet operations rose while the number of older commercial jet operations declined. The corporate fleet mix saw a steady stream of newer corporate jet aircraft and an incline in the use of many older series Lear Jets. Overall, newer and older corporate jets operationally experienced an upward trend from 2014.

Annual Noise Complaints by Jurisdiction (PHX Only)

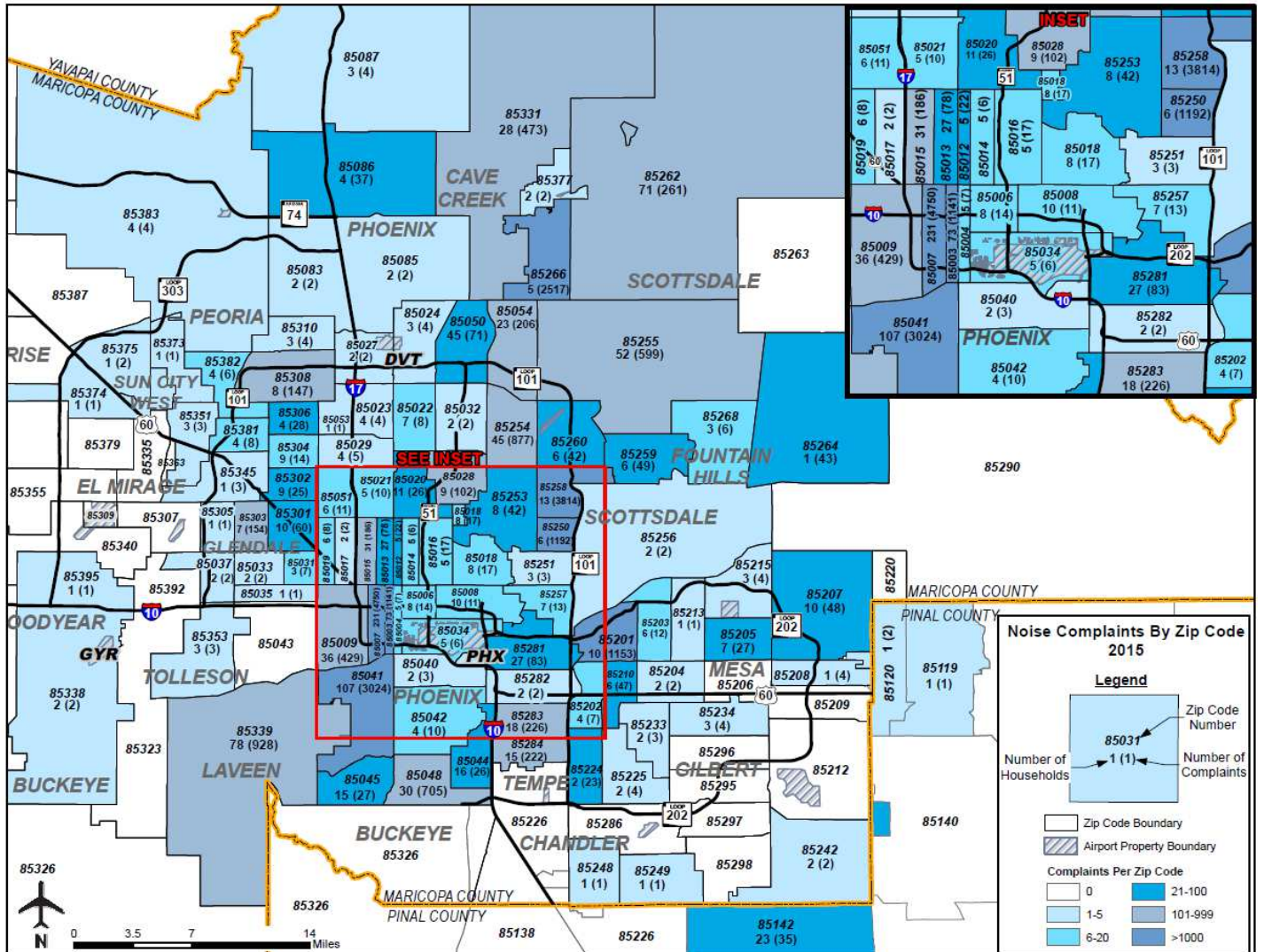
City	2011		2012		2013		2014		2015	
	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints
Apache Junction	-	-	-	-	-	-	-	-	2	3
Carefree	-	-	-	-	-	-	-	-	2	2
Cave Creek	-	-	-	-	-	-	3	3	34	473
Chandler	-	-	-	-	-	-	6	8	6	29
Fort McDowell	1	2	-	-	-	-	-	-	2	43
Fountain Hills	-	-	1	1	-	-	-	-	3	6
Gilbert	-	-	-	-	1	3	-	-	5	7
Glendale	1	3	-	-	-	-	11	27	56	432
Goodyear	1	1	-	-	-	-	1	1	3	3
Mesa	9	86	10	67	13	158	25	146	60	1,304
New River	-	-	-	-	-	-	1	1	4	38
Out of State	-	-	-	-	-	-	2	2	1	1
Paradise Valley	-	-	-	-	-	-	1	1	10	42
Peoria	-	-	1	1	1	4	-	-	15	21
Phoenix	20	22	13	16	16	22	545	2,522	1,025	11,889
Queen Creek	-	-	-	-	-	-	-	-	25	37
Scottsdale	4	5	4	7	3	7	37	261	262	9,370
Sun City	-	-	-	-	-	-	-	-	4	4
Sun City West	-	-	-	-	-	-	2	3	1	2
Surprise	-	-	-	-	-	-	1	1	1	1
Tempe	9	10	9	10	10	26	22	29	70	533
Tolleson	-	-	-	-	-	-	-	-	3	3
Totals:	45	129	38	102	44	220	657	3,005	1,594	24,243

In 2015 noise complaints for Phoenix Sky Harbor International Airport increased dramatically. This was due to the introduction of NextGen RNAV arrival and departure procedures implemented by the FAA on September 18, 2014.

Annual Households Versus Complaints



2015 Noise Complaints by Zip Code

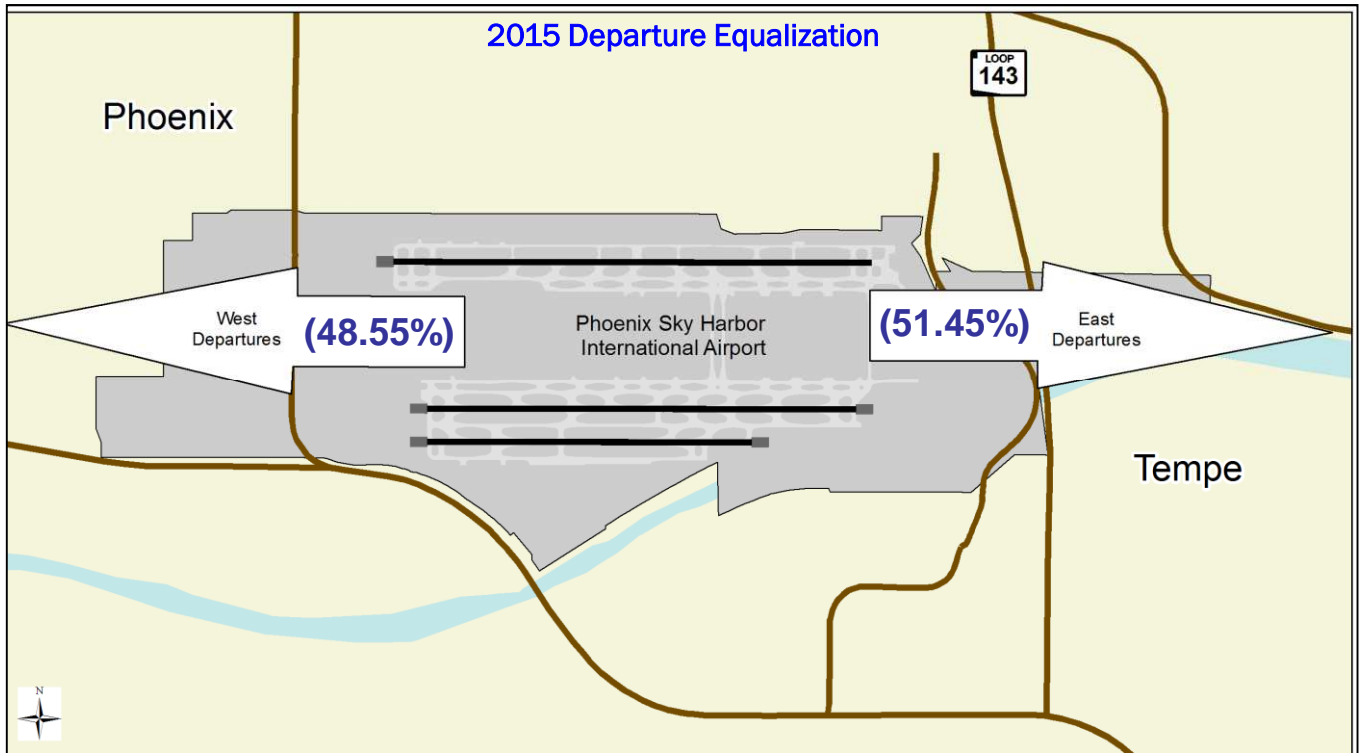


ZIP CODES AND NOTABLE COMPLAINT STATISTICS

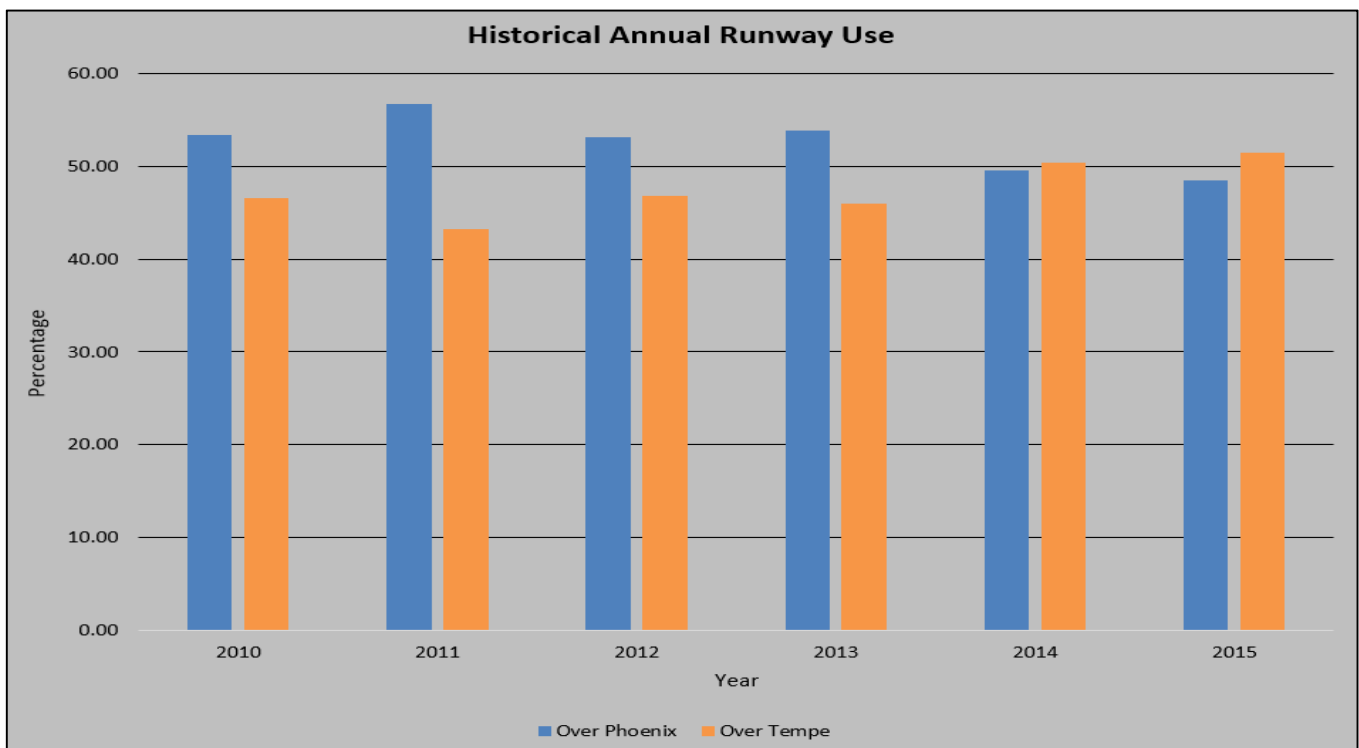
- The top three complaint reporting zip codes in ascending order were 85007, 85258 and 85041
- 231 households registered 4,750 noise complaints from zip code 85007
- 14 zip codes reported one household reporting one complaint

Note: The number of complaints reported by zip code may differ from the number of complaints reported by jurisdiction as shown on the previous page for reasons such as some zip codes are common to more than one jurisdiction and/or a jurisdiction may have been reported without a zip code.

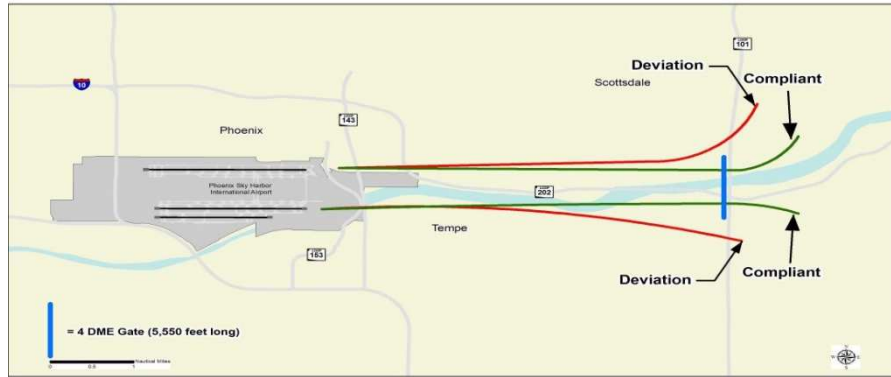
2015 PHX Runway Utilization



Due to aircraft having to depart into the wind, runway use at Phoenix Sky Harbor International Airport is generally predictable with consistent winds. At Phoenix Sky Harbor International Airport, winds generally flow east to west at night and, by mid-morning, flow west to east. Runway equalization helps even the distribution of noise exposure in the surrounding communities.



2015 4 DME Departure Procedure Compliance



2015 4 DME Compliance: 99.34%

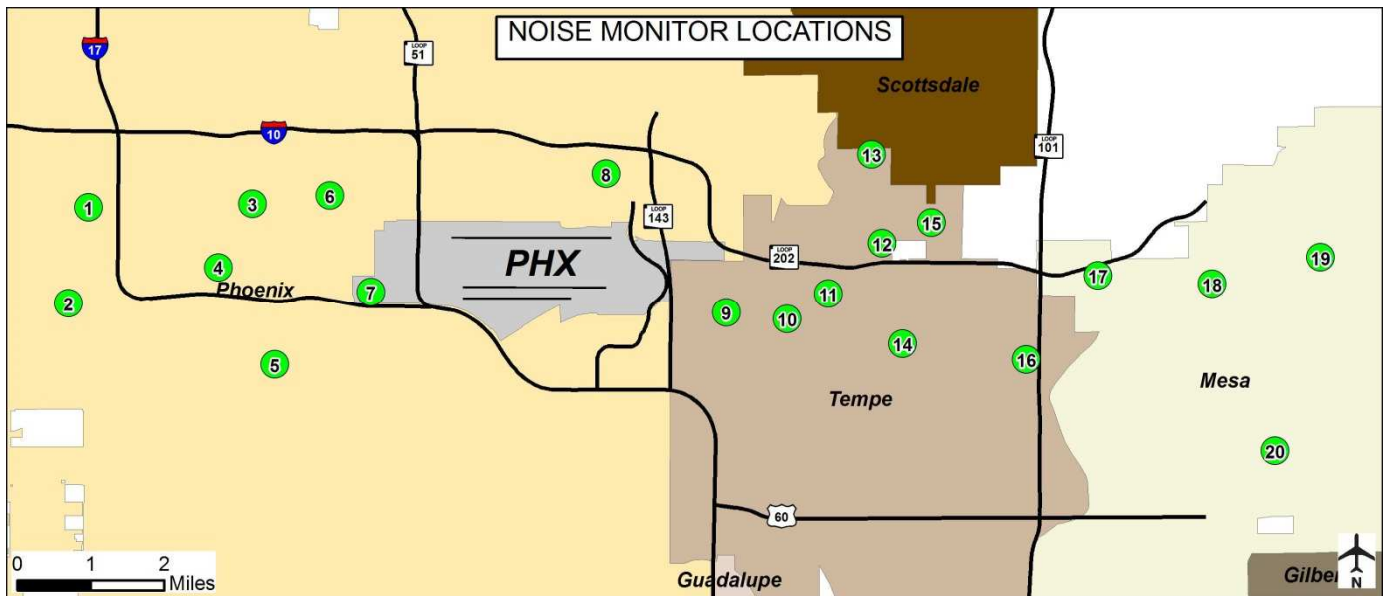
2010	2011	2012	2013	2014	2015
98.33%	98.25%	97.08%	97.69%	98.47%	99.34%

All jet aircraft departing from Phoenix Sky Harbor International Airport to the east are directed to fly generally along the Salt River for 5 miles before conducting their turns. This procedure is designed to keep aircraft over the Salt River area and minimize noise exposure to residential areas. Staff monitors compliance with this procedure and communicates with aircraft operators when procedures are not followed.

Since 2010 the rate of compliance with the 4 DME procedure has fluctuated but has never fallen below 97.08%. In 2015, compliance with the 4 DME procedure was at its highest at 99.34%.

ACID	Airline Name	Deviations	Total East Departures	% COMPLIANCE
ABX	Airborne Express	0	59	100.00%
ACA	Air Canada	0	11	100.00%
ASP	Airsprint	0	6	100.00%
ATN	Air Transport Intl.	0	20	100.00%
BAW	British Airways	0	93	100.00%
ROU	Air Canada Rogue	1	474	99.78%
WJA	WestJet Airlines	2	884	99.77%
FDX	FedEx Airlines	3	1,228	99.76%
AAL	American Airlines	75	23,825	99.69%
FFT	Frontier Airlines	3	891	99.66%
NKS	Spirit Airlines	2	568	99.65%
ASA	Alaska Airlines	5	1,372	99.64%
UAL	United Airlines	16	3,724	99.57%
DAL	Delta Airlines	20	4,466	99.55%
ASH	Mesa Airlines	48	9,258	99.48%
AWE	US Airways	56	10,414	99.46%
SWA	Southwest Airlines	190	29,291	99.35%
UPS	UPS Airlines	6	846	99.29%
SKW	SkyWest Airlines	67	9,083	99.26%
JBU	JetBlue Airways	3	282	98.93%
DCM	FLTPLAN	1	67	98.51%
GTI	Atlas Air	4	235	98.30%
UNKN	Unknown	3	98	96.94%
EJA	Executive Jet Aviation	17	447	96.20%
TOTAL		662	99,269	99.34

2015 Noise Monitoring Site Measurements



The Aviation Department has 20 Noise Monitoring Terminals (NMT) in the vicinity of Phoenix Sky Harbor International Airport. The NMTs are able to determine exactly how loud aircraft operations were at a particular location.

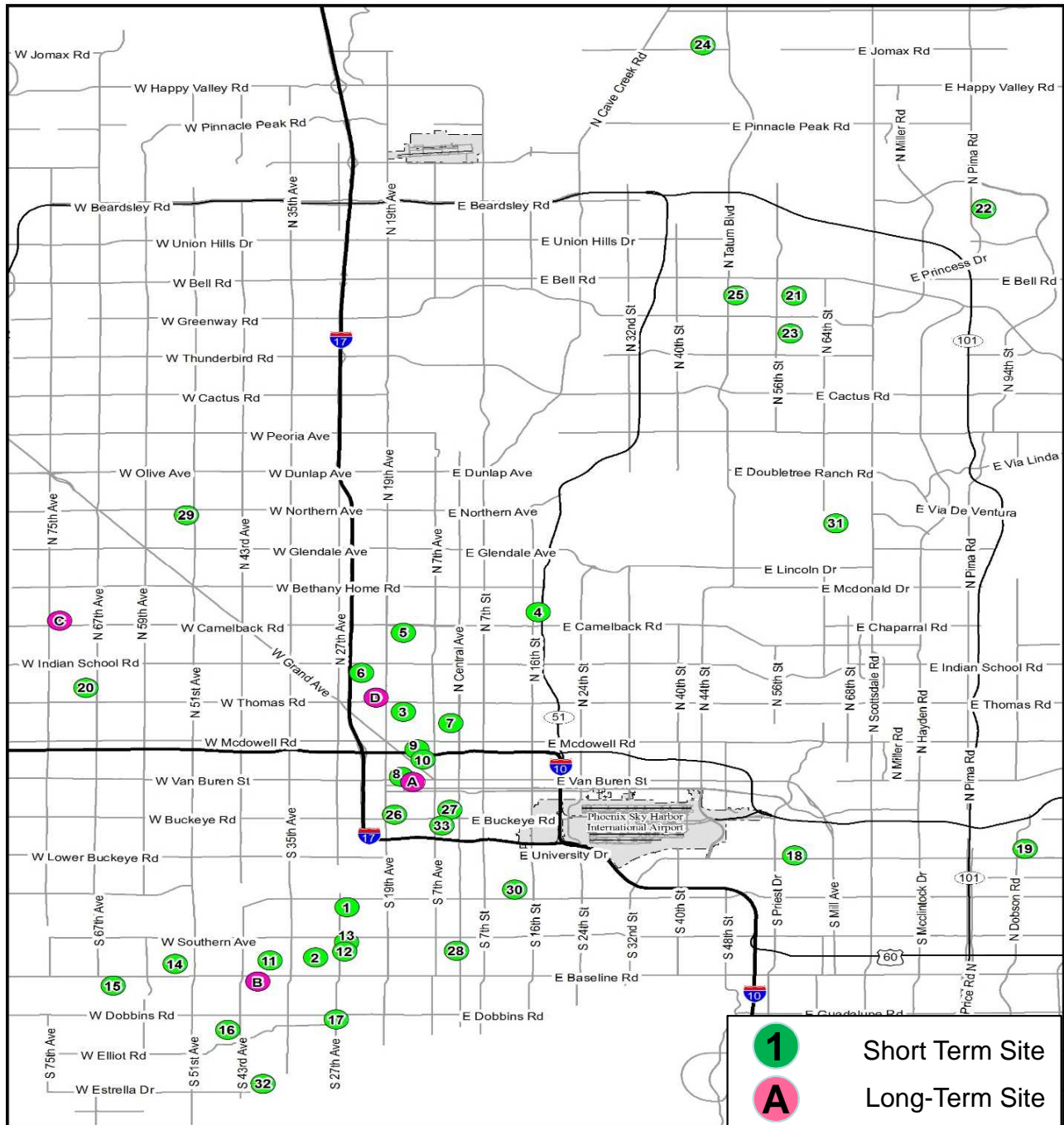
Aircraft noise is typically reported in A-weighted decibels (LdnA). Figures in the adjacent table are presented in LdnA, as an average reading from each station over the corresponding year. It is important to note that a change in 3 decibels is commonly recognized as the smallest increase in noise exposure that is audible to the human ear.

*In 2013 Noise Monitoring Site (NMS) 17 was decommissioned to allow for the reconstruction of the Chicago Cubs Spring Training Facility in Mesa.

Noise Monitoring Site	2010	2011	2012	2013	2014	2015
NMS01	50.6	50.3	49.6	50.3	50.3	48.3
NMS02	54.7	55.0	55.6	54.7	60.1	45.9
NMS03	54.4	53.3	52.1	53.2	53.6	54.3
NMS04	58.6	59.3	59.1	59.0	58.6	58.6
NMS05	55.3	55.3	55.1	53.8	54.7	55.9
NMS06	48.5	46.4	46.6	37.3	47.0	47.8
NMS07	67.4	67.6	67.4	66.7	67.4	66.9
NMS08	44.2	47.2	45.3	44.6	47.0	44.3
NMS09	63.2	63.7	61.7	63.0	62.0	62.3
NMS10	57.4	57.7	56.8	53.4	54.1	55.5
NMS11	63.8	64.5	64.1	61.3	63.1	63.5
NMS12	61.4	61.1	60.9	60.4	61.5	60.2
NMS13	43.5	42.1	41.0	40.2	38.5	38.1
NMS14	44.5	44.7	44.4	44.2	40.4	42.9
NMS15	55.8	55.3	54.7	55.4	54.9	55.0
NMS16	42.1	42.2	41.9	41.7	40.5	42.0
NMS17	54.1	54.3	54.1	*	*	*
NMS18	51.5	49.9	49.2	48.3	48.1	48.3
NMS19	48.7	46.5	45.9	46.0	45.8	46.1
NMS20	44.6	43.2	44.3	43.4	45.3	45.4

2015 Temporary Noise Monitoring

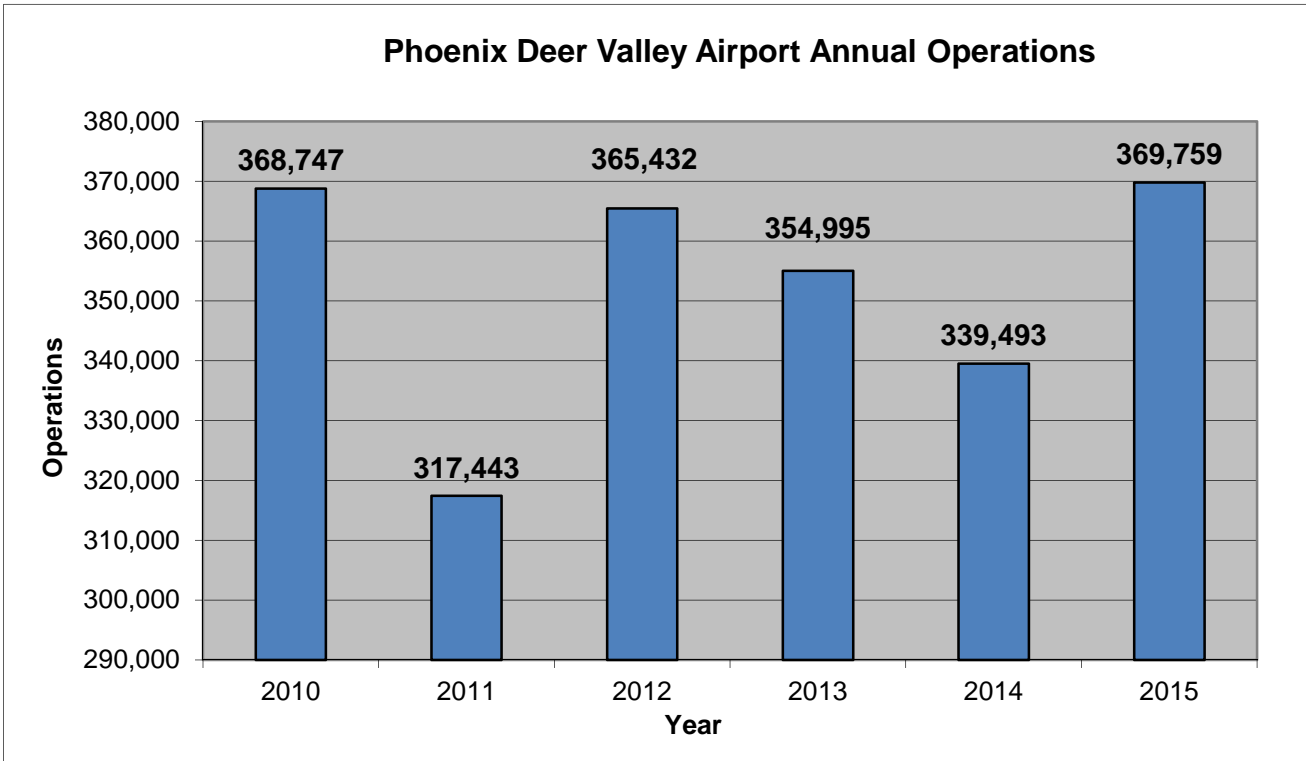
At the request of the community, the Aviation Department contracted with Landrum & Brown (L&B) to conduct temporary noise monitoring to establish a baseline of noise impacts in the community as a result of the new RNAV routes implemented on September 18, 2014. Monitoring locations were selected based on community input received during public outreach meetings held in January and February. Measurements were conducted between February 2 and February 11, 2015 at 37 locations: 33 short-term (1-2 hours) and 4 long-term (4 days) sites. Complete results of the temporary noise monitoring are available [online](#).



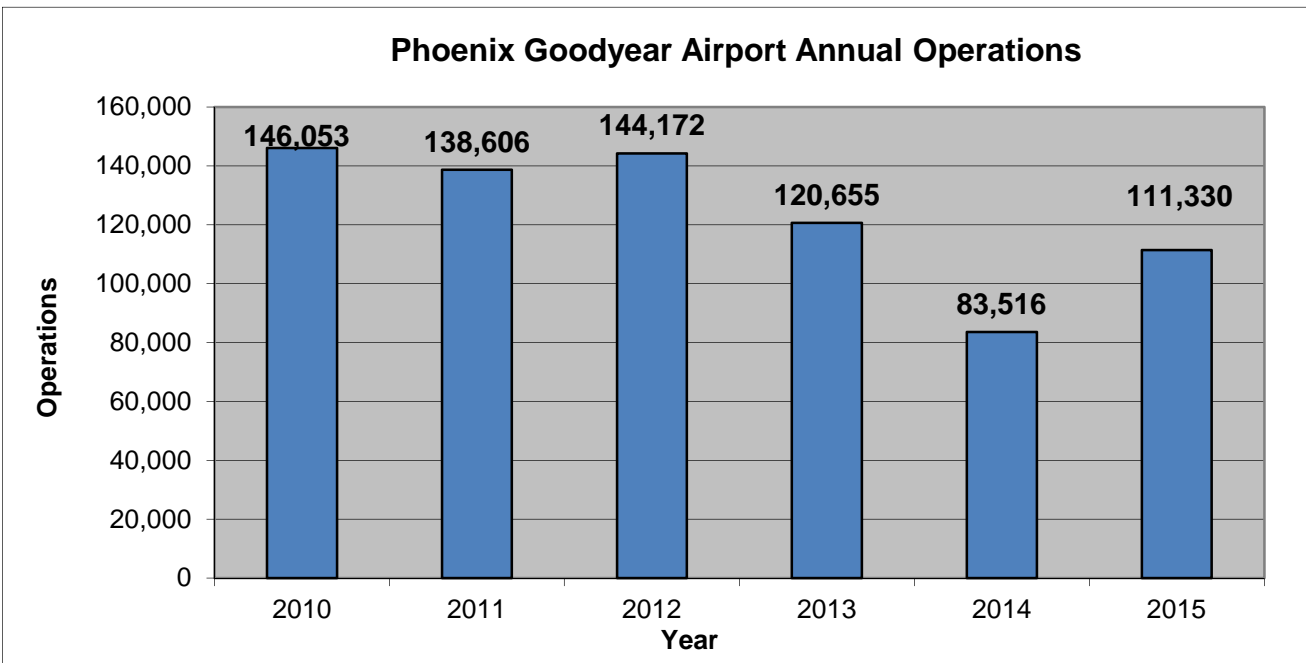
Deer Valley & Goodyear Airports Annual Operations

Annual operations at Deer Valley and Goodyear Airports increased in 2015, largely due to an increase in flight school operations.

Phoenix Deer Valley Airport 2015 Monthly Operations													Source: FAA OPS ATADs
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
DVT	28,971	28,659	34,722	36,062	32,610	28,572	30,004	28,363	28,329	32,520	31,467	29,480	369,759

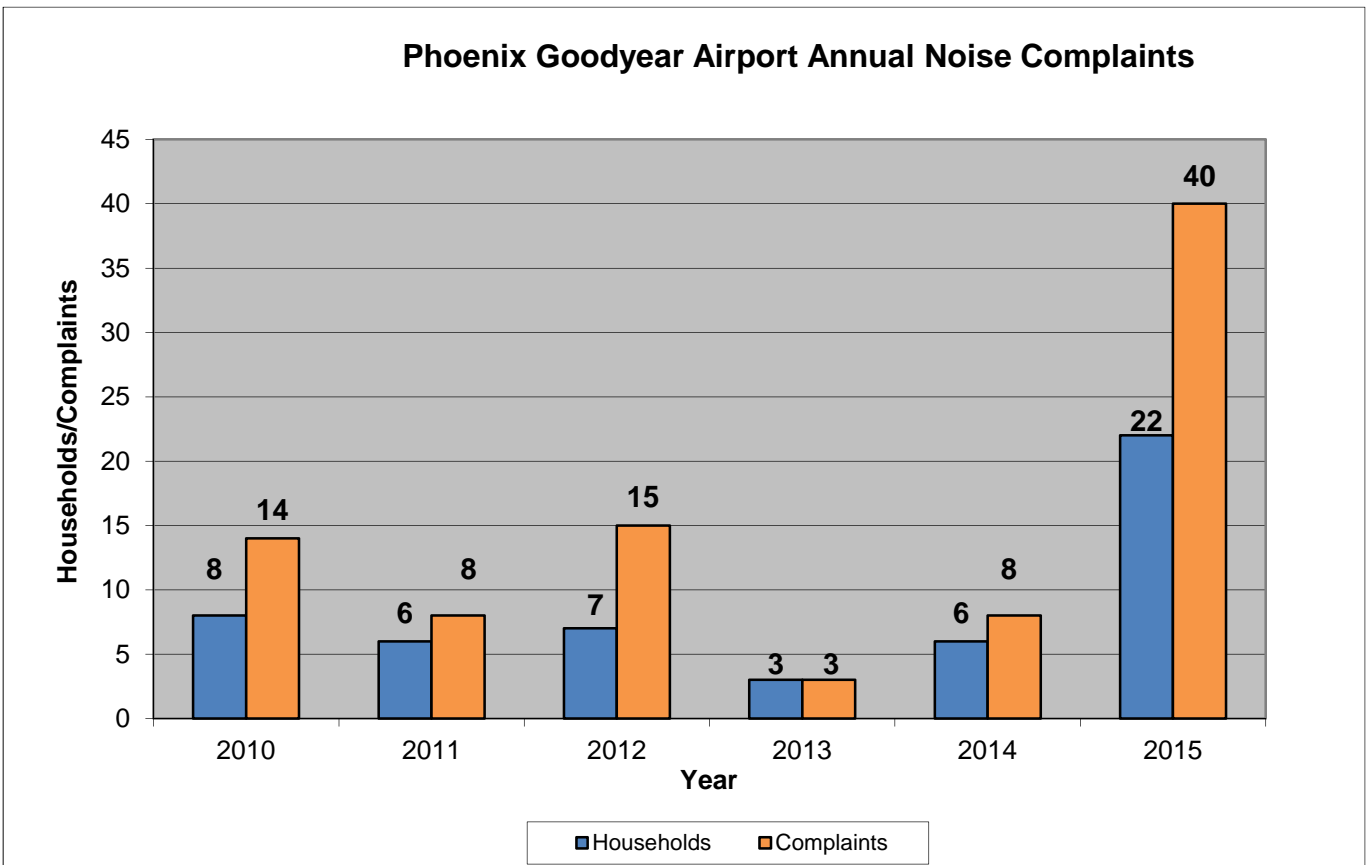
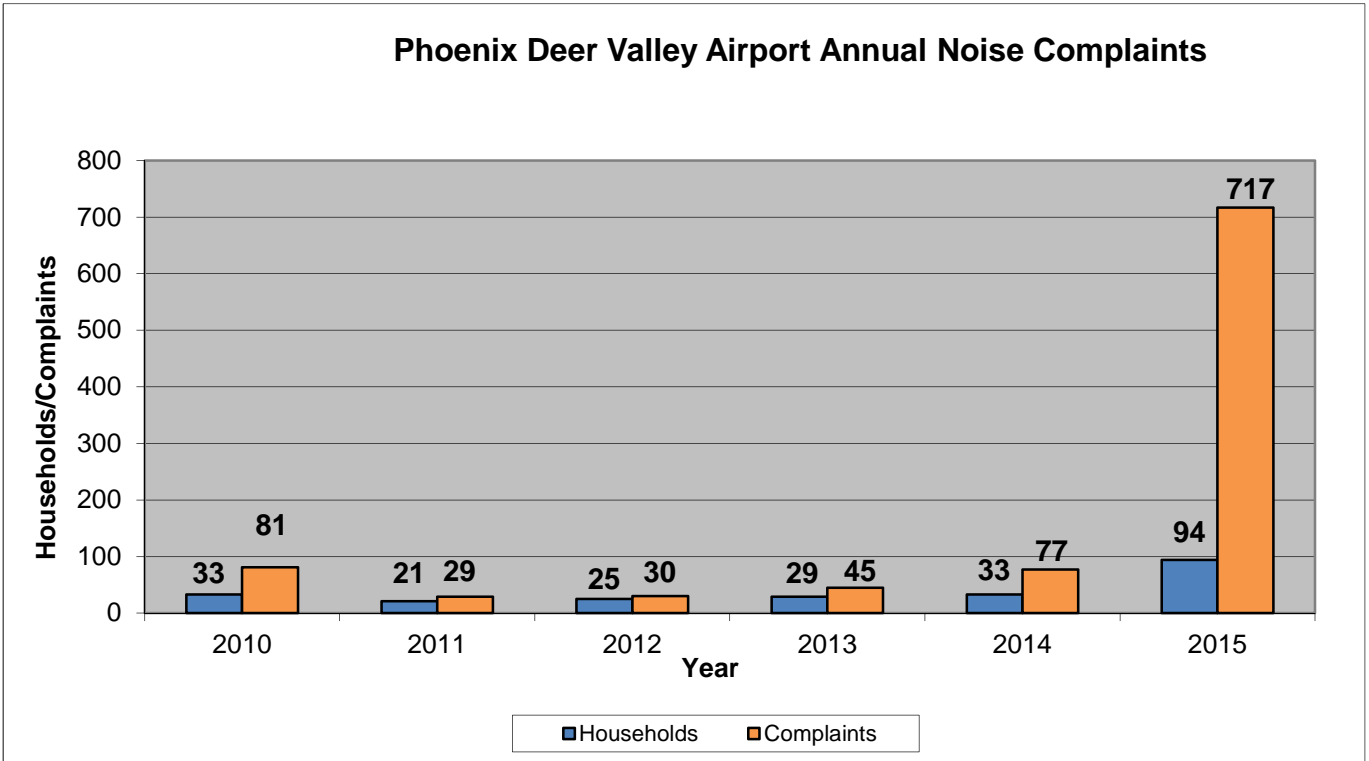


Phoenix Goodyear Airport 2015 Monthly Operations													Source: FAA OPS ATADs
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
GYR	7,637	8,782	10,421	10,378	10,508	9,936	10,967	8,076	8,151	8,464	8,659	9,351	111,330



Deer Valley & Goodyear Airports Annual Noise Complaints

Noise complaints and households registering complaints showed an increase from 2014 levels.



Contact Us

Anne Kurtenbach

Airspace & Noise Program Manager

Anne.Kurtenbach@phoenix.gov

(602) 273-3347

Brett Nadler

Airspace & Noise Planner II

Brett.Nadler@phoenix.gov

(602) 273-8894

Complaint Hotline:

(844) 244-7430

Webform:

<http://www.planenoise.com/copad/q3qH4u/>

Download the app:

<http://www.planenoise.com/mobile/phoenix/jr3wcQ2/>

Subscribe to updates:

<https://www.skyharbor.com/FlightPaths>