

***PHX DVT BYR***

 CITY OF PHOENIX AVIATION DEPARTMENT

**Annual Noise Report  
2014**

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## Executive Summary

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 2014. 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, Community Noise Reduction Program consultants, 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.

### Calendar Year 2014 Highlights:

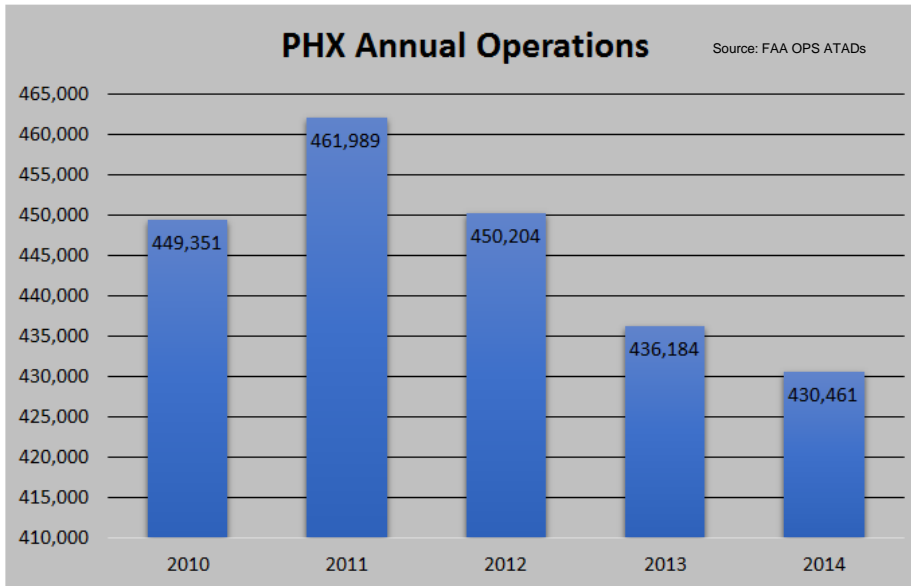
In 2014, aircraft operations decreased at Phoenix Sky Harbor International Airport by 1.31% from 436,184 operations to 430,461 operations. Phoenix Deer Valley Airport handled 339,493 operations in 2014 compared to 354,995 operations in 2013, representing a 4.37% reduction. Phoenix Goodyear Airport handled 83,516 operations in 2014 compared to 120,655 operations in 2013, equating to a 30.78% reduction.

In 2014, Phoenix Sky Harbor International Airport operated in a westerly flow 49.56% of the year and 50.44% easterly for the year. Aircraft arrival and departure flow is largely attributed to the wind direction in the valley throughout the year.

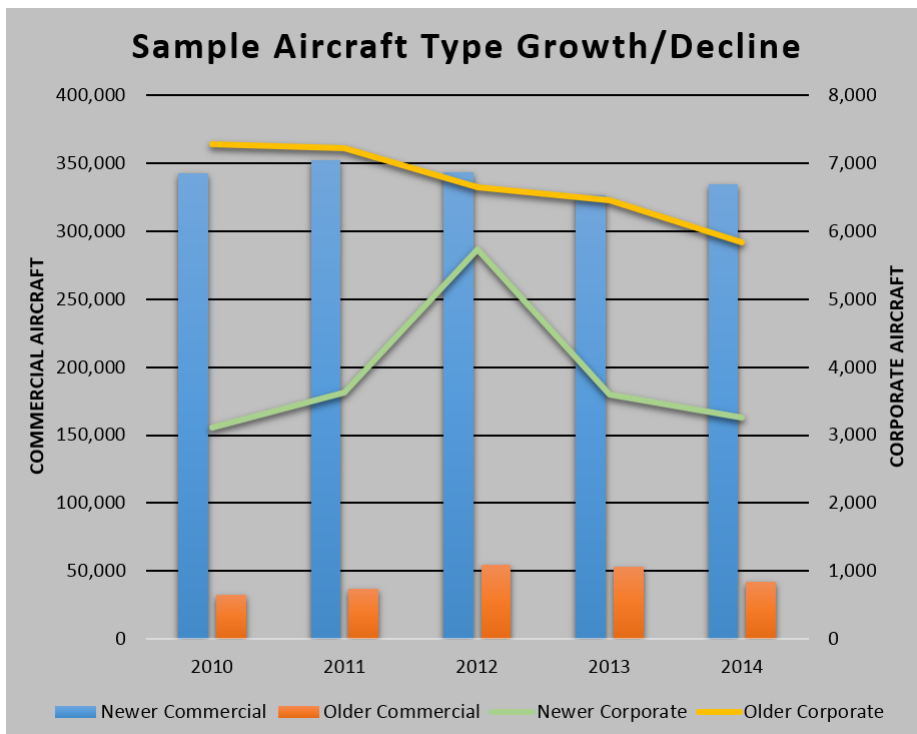
In 2014, compliance with the 4 DME Departure Procedure was 98.47%. This high compliance rate can be attributed to the long history of communications between the Aviation Department, the FAA, aircraft operators, and the community.

The City of Phoenix Aviation Department received 3,006 complaints from 658 households in 2014 regarding Phoenix Sky Harbor International Airport, 77 complaints from 33 households regarding Phoenix Deer Valley Airport operations and 8 complaints from 6 households regarding Phoenix Goodyear Airport operations.

# Historical Annual Operations and Fleet Mix Comparisons



Operations at Phoenix Sky Harbor International Airport decreased 1.31% in 2014.



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

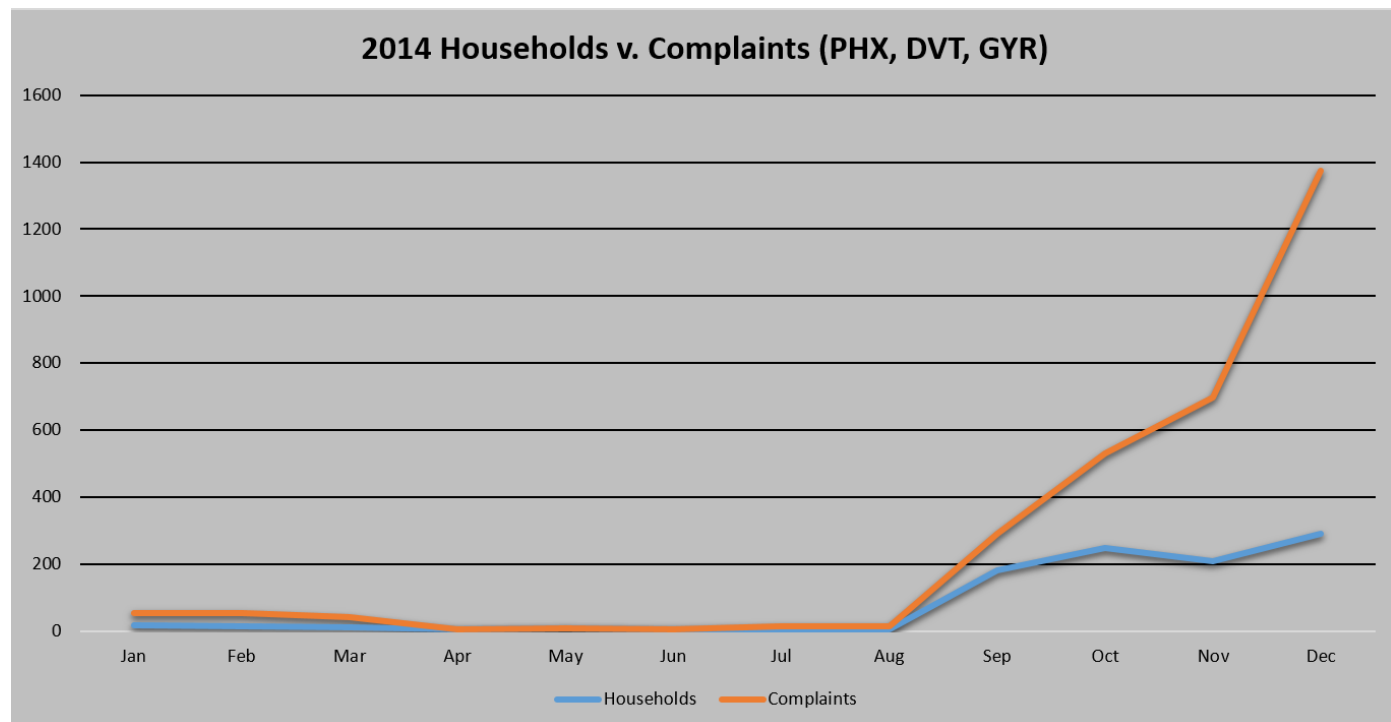
In 2014 the commercial service fleet mix saw an increase in the use of Airbus 321 and Canadair Regional Jet 700/900 operations and a decrease in McDonnell Douglas MD 80/90 operations. Compared to the previous year, the number of newer commercial jet operations rose while the number of older commercial jet operations declined. The corporate fleet mix saw a steady stream of newer corporate jet aircraft and a decline in the use of many older series Lear Jets. Overall, newer and older corporate jets operationally experienced a downward trend from 2013.

# Annual Noise Complaints by Jurisdiction

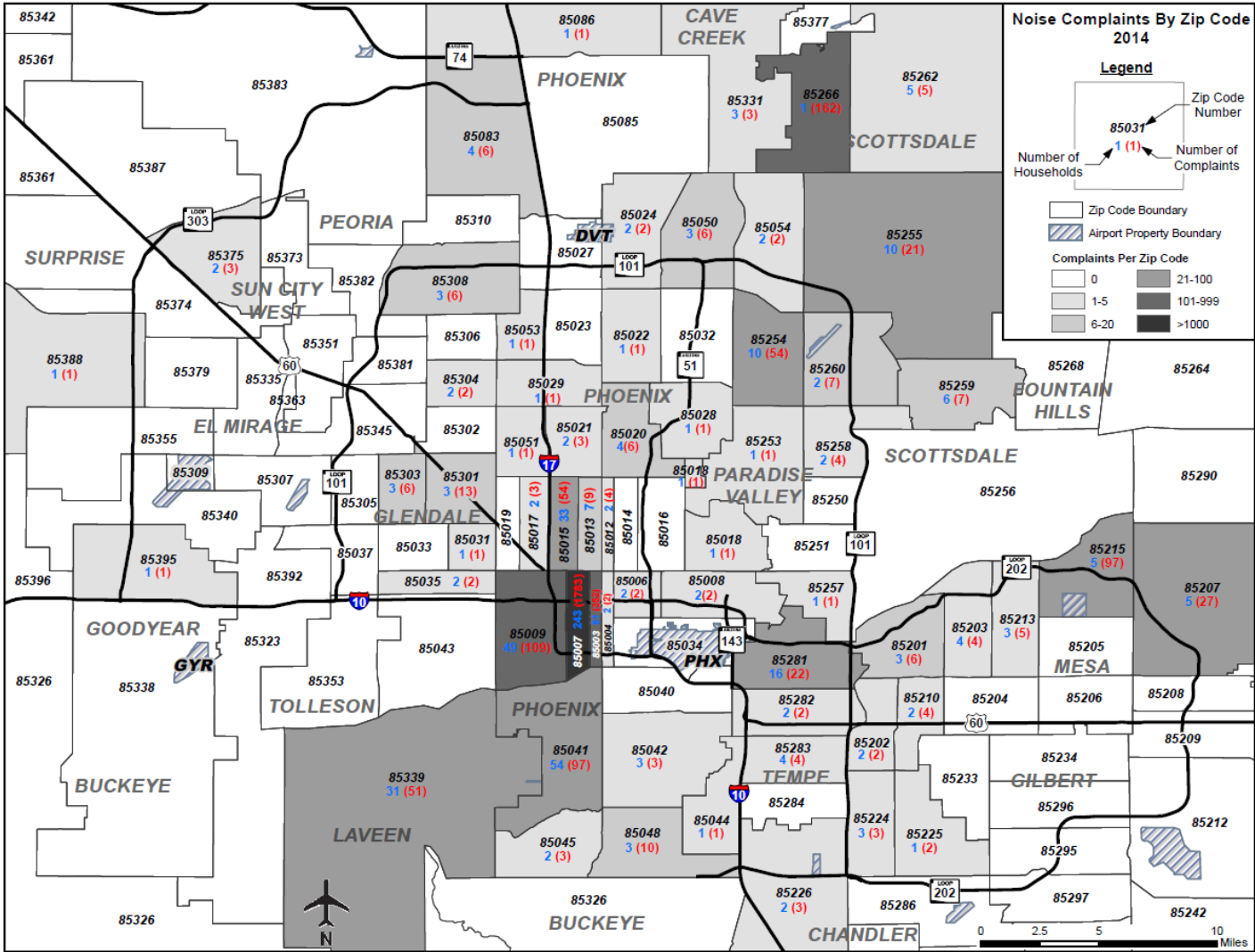
City	2010		2011		2012		2013		2014	
	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints
Cave Creek	-	-	-	-	-	-	-	-	3	3
Chandler	1	1	-	-	-	-	-	-	6	8
Fort McDowell	-	-	1	2	-	-	-	-	-	-
Fountain Hills	-	-	-	-	1	1	-	-	-	-
Gilbert	1	1	-	-	-	-	1	3	-	-
Glendale	-	-	1	3	-	-	-	-	11	27
Goodyear	-	-	1	1	-	-	-	-	1	1
Madison (IN)	-	-	-	-	-	-	-	-	1	1
Mesa	19	122	9	86	10	67	13	158	25	146
New River	-	-	-	-	-	-	-	-	1	1
Paradise Valley	-	-	-	-	-	-	-	-	1	1
Peoria	-	-	-	-	1	1	1	4	-	-
Phoenix	20	35	20	22	13	16	16	22	545	2,522
Scottsdale	6	9	4	5	4	7	3	7	37	261
Sun City West	-	-	-	-	-	-	-	-	2	3
Surprise	-	-	-	-	-	-	-	-	1	1
Tempe	14	23	9	10	9	10	10	26	22	29
Torrance (CA)	-	-	-	-	-	-	-	-	1	1
Unknown	-	-	-	-	-	-	1	1	1	1
<b>Totals:</b>	<b>61</b>	<b>191</b>	<b>45</b>	<b>129</b>	<b>38</b>	<b>102</b>	<b>45</b>	<b>221</b>	<b>658</b>	<b>3,006</b>

In 2014 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. Ninety six percent of the total complaints for the year came after the implementation date. Two households accounted for approximately 23% of the total complaints for the year.

## Annual Households Versus Complaints



# 2014 Noise Complaints by Zip Code

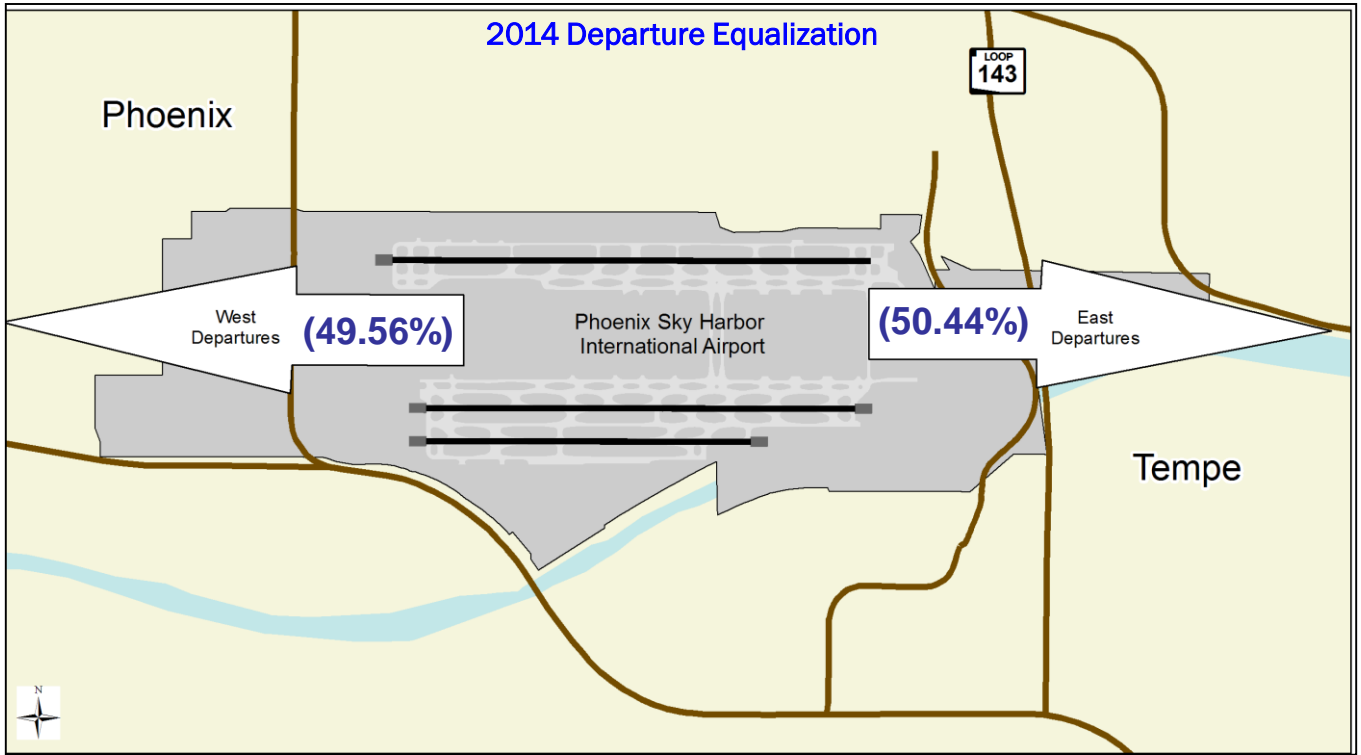


## ZIP CODES AND NOTABLE COMPLAINT STATISTICS

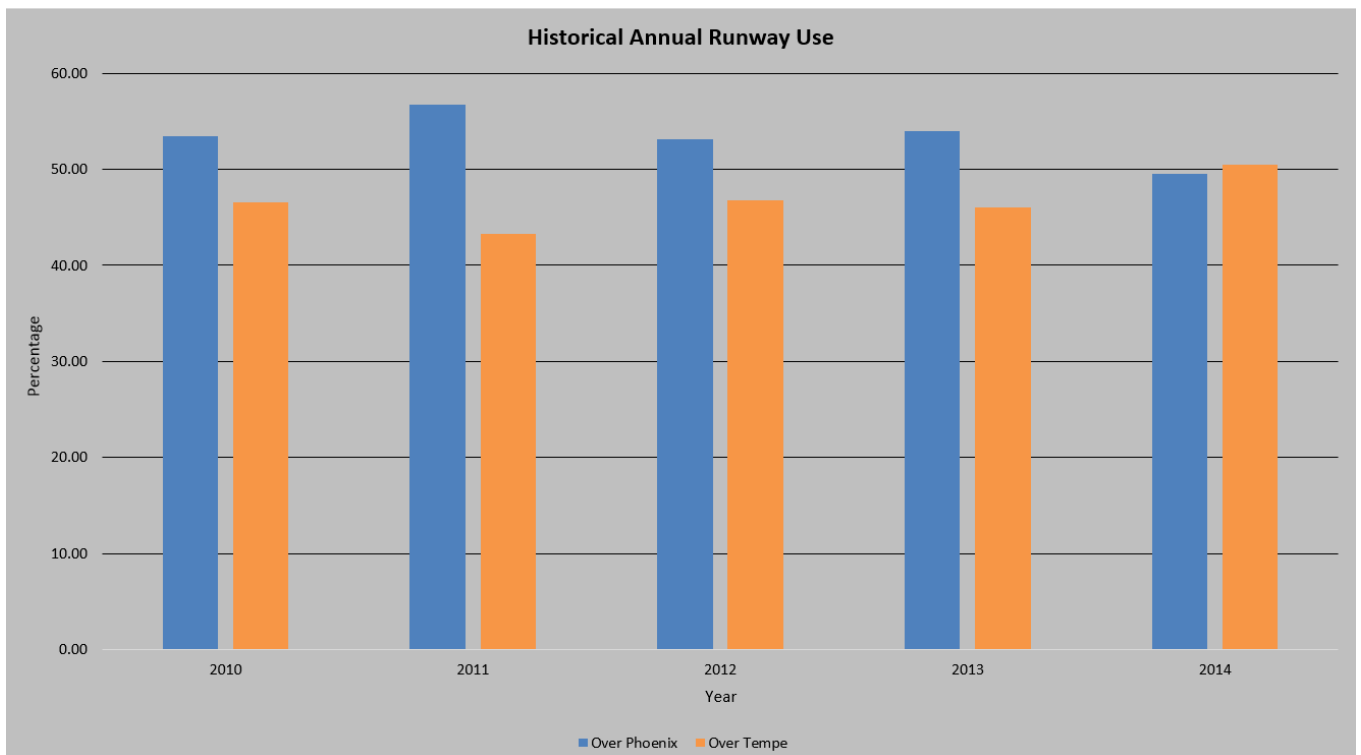
- The top three complaint reporting zip codes in ascending order were 85007, 85003 and 85266
- 243 households registered 1,783 noise complaints from zip code 85007
- 81 households registered 352 noise complaints from zip code 85003
- 85266 was the zip code with the largest ratio of households to complaints registered at 1:162
- Two separate out-of-state zip codes reported one complaint each
- 15 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.

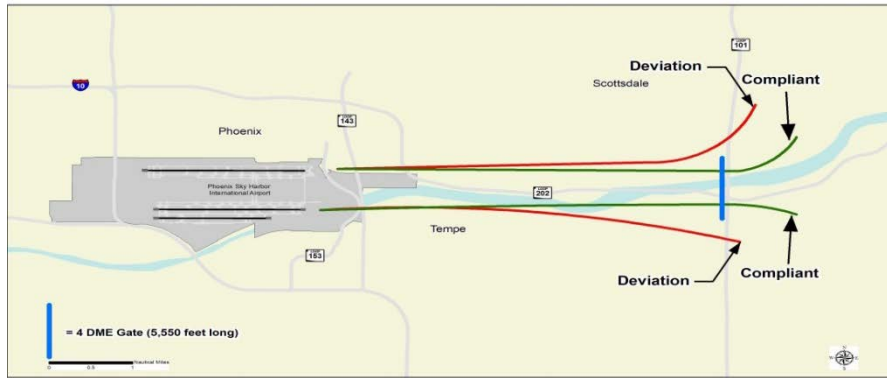
# 2014 PHX Runway Utilization



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. Equalization in 2014, compared to historical trends, was the closest to “50/50” that has been achieved to date.



# 2014 4 DME Departure Procedure Compliance



## 2014 4 DME Compliance: 98.47%

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

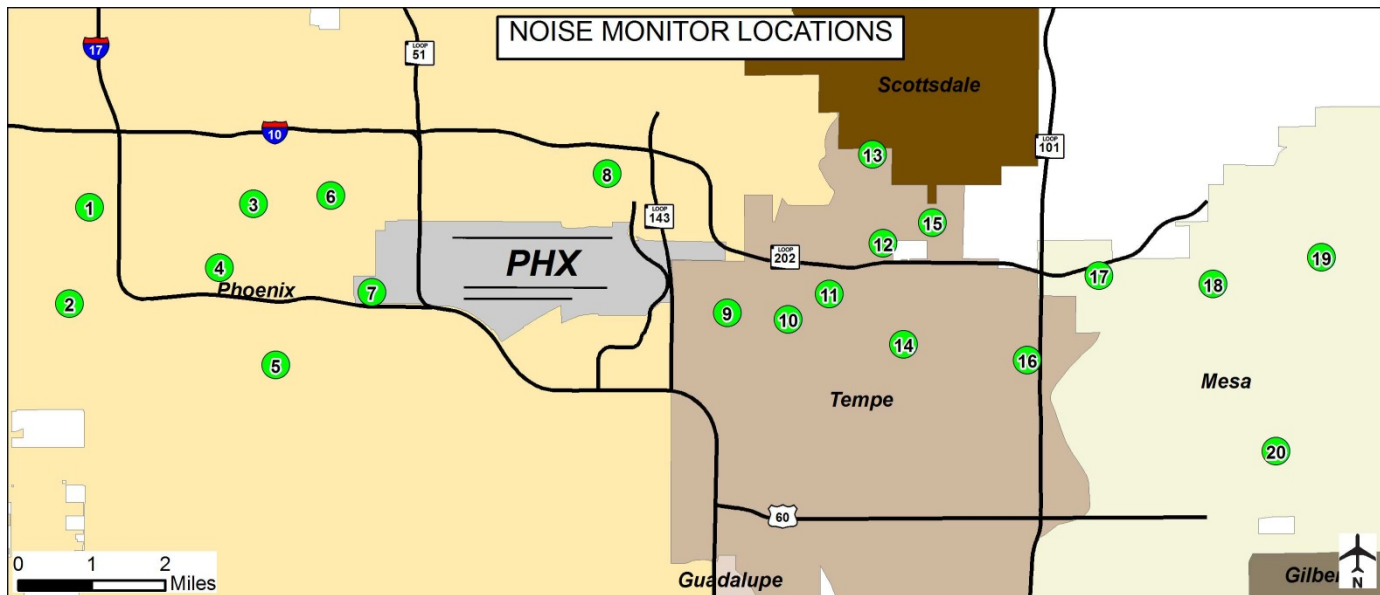
All jet aircraft departing from Phoenix Sky Harbor International Airport to the east are directed to fly generally along the Salt River for 5 miles before conducting their turns. This procedure is designed to keep aircraft over the Salt River area and minimize noise exposure to residential areas. The Aviation Department monitors compliance with this procedure and communicates regularly with aircraft operators to ensure that the procedure is adhered to when airspace demands and safety allow.

Since 2010 the compliance rate has fluctuated but has never dipped below 97.08%. For 2014, the compliance rate is at its highest at 98.47%.

Airline Code	Airline Name	Deviations	Total Departures to the East	% Compliance
AJL	Airstar Charters	0	7	100.00
BAW	British Airways	0	72	100.00
EJM	Executive Jet Management	0	14	100.00
DAL	Delta Airlines	8	4,126	99.81
ACA	Air Canada	1	409	99.76
WJA	West Jet	3	624	99.52
FDX	Federal Express	8	1,194	99.33
USA	US Airways	307	38,245	99.20
JBU	Jet Blue Airways	2	245	99.18
UAL	United Airlines	32	3,684	99.13
ASA	Alaska Airlines	16	1,498	98.93
FFT	Frontier Airlines	11	977	98.87
AAL	American Airlines	41	3,106	98.68
SWA	Southwest Airlines	417	27,339	98.47
SCX	Sun Country Airlines	2	94	97.87
HAL	Hawaiian Airlines	7	320	97.81
SKW	Skywest Airlines	237	9,681	97.55
UPS	United Parcel Service	22	853	97.42
ABX	Airborne Express	12	301	96.01
<b>Total</b>			<b>92,789</b>	
<b>Operators under 96% Compliance</b>				
OPT	Flight Options	2	41	95.12
DCM	Fitplan, LLC	5	84	94.05
TMC	Travel Management Company	2	25	92.00
EJA	Express Jet Airlines	41	465	91.18
GA	General Aviation (jets)	210	2,115	90.07
VOI	Volaris	8	79	89.87
JTL	Jet Linx Aviation	1	9	88.89
CTF	Cutter Aviation	21	160	86.88
BSK	Miami Air International	2	13	84.62
USC	US Check	4	21	80.95
KFS	Kalitta Charters	2	10	80.00
BJS	Business Jet Solutions	3	11	72.73
FIV	Citation Shares	2	7	71.43
NKS	Spirit Airlines	8	18	55.56
AAY	Allegiant Air	1	2	50.00
NJE	NetJets Transportes Aereos	1	2	50.00
BMJ	Bemidji Airlines	1	1	0.00
CYD	ATI Jet Inc.	2	2	0.00
<b>Total</b>			<b>3,065</b>	



# 2014 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.

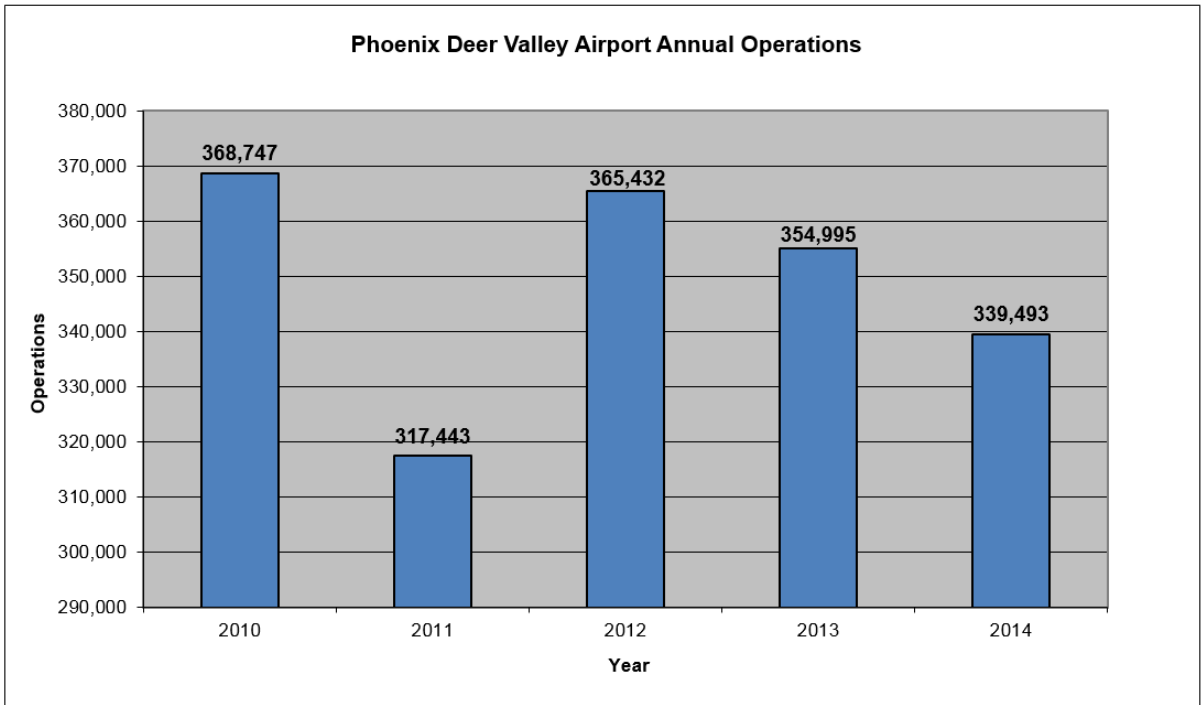
\*In 2013 Noise Monitoring Site (NMS) 17 was decommissioned to allow for the reconstruction of the Chicago Cubs Spring Training Facility in Mesa.

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

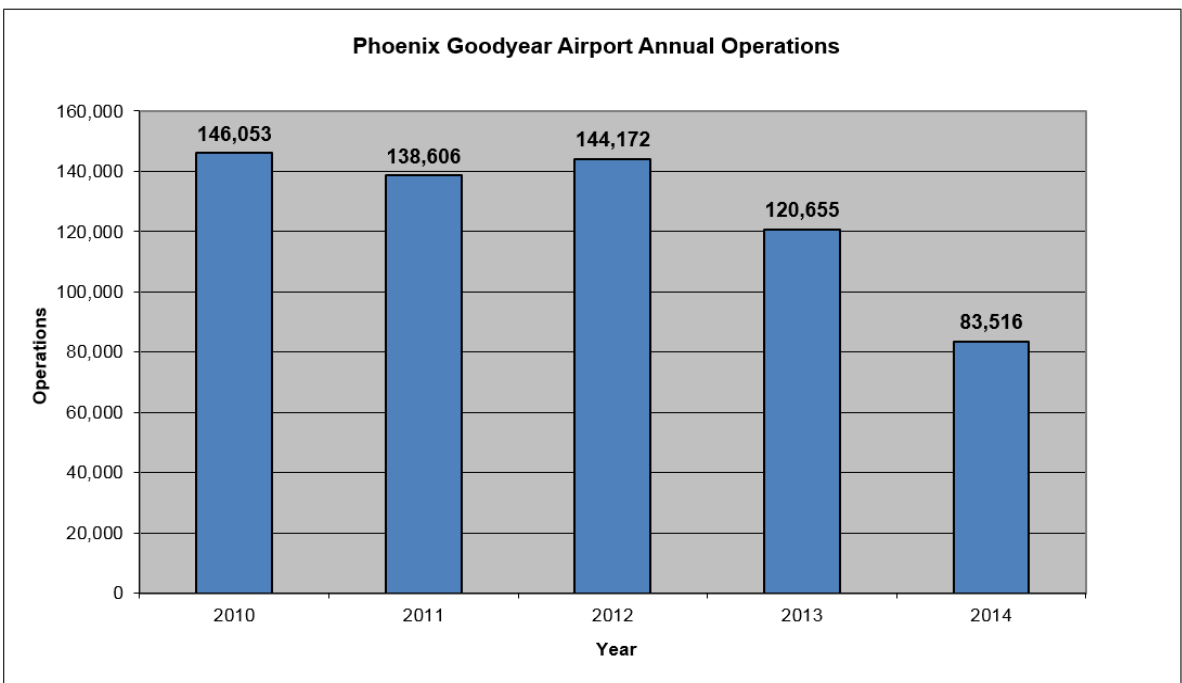
# Deer Valley & Goodyear Airports Annual Operations

Annual operations at Deer Valley and Goodyear Airports decreased in 2014.

Phoenix Deer Valley Airport 2014 Monthly Operations													Source: FAA OPS ATADs
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
DVT	29,139	24,265	29,395	25,105	31,634	30,707	26,142	28,647	26,615	33,479	28,729	25,636	<b>339,493</b>



Phoenix Goodyear Airport 2014 Monthly Operations													Source: FAA OPS ATADs
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
GYR	7,319	6,660	6,419	7,532	7,361	6,569	5,888	6,936	5,840	8,036	6,948	8,008	<b>83,516</b>



# Deer Valley & Goodyear Airports Annual Noise Complaints

Noise complaints and households registering complaints showed an increase from 2013 levels.

