

***PHX DVT GYR***

 CITY OF PHOENIX AVIATION DEPARTMENT

**Annual Noise Report  
2011**

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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 2011. 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 2011 Highlights:**

In 2011, aircraft operations increased at Phoenix Sky Harbor International Airport by 2.81% from 449,351 operations to 461,989 operations. However operations at Phoenix Deer Valley Airport and Phoenix Goodyear Airport decreased in 2011 by 13.9% and 5.09% respectively. Phoenix Deer Valley Airport experienced 317,443 operations while Phoenix Goodyear Airport experienced 138,606 operations.

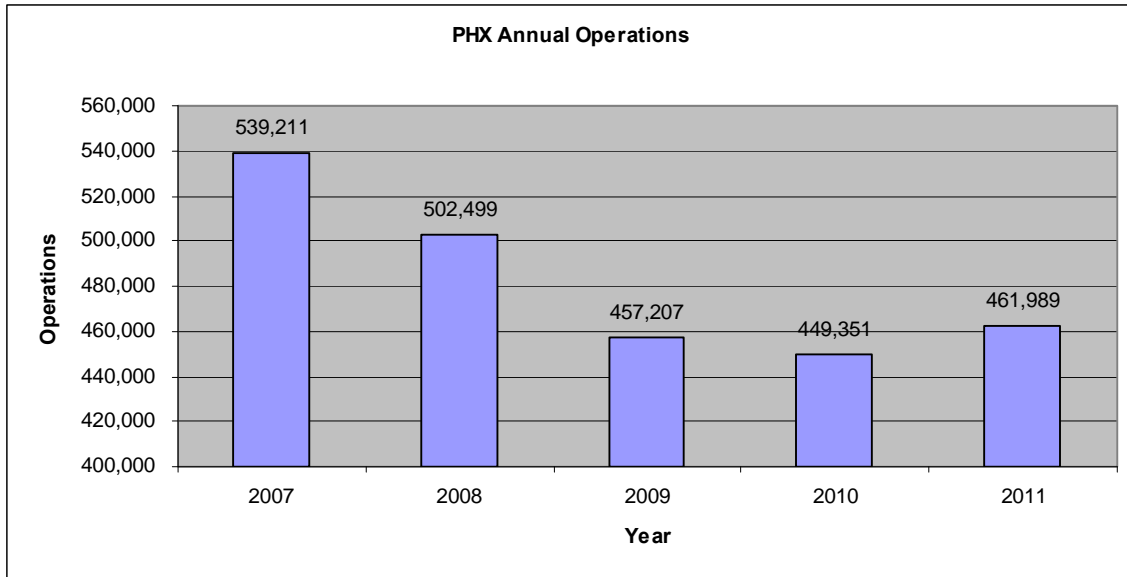
In 2011, Phoenix Sky Harbor International Airport operated in a westerly flow 56.72% of the year and 43.27% easterly for the year, and is largely attributed to the wind direction in the valley throughout the year.

In 2011, compliance with the 4 DME Departure Procedure was 98.25%. This marks the third consecutive year that compliance has been greater than 98%, the high compliance rate can be attributed to the long history of communications between the Aviation Department, the FAA, aircraft operators, and the community.

Noise complaint totals decreased in 2011 to 129, which is down from 192 in 2010. There was also a decrease in the number of households registering complaints with the Aviation Department, 62 in 2010 and 44 in 2011.

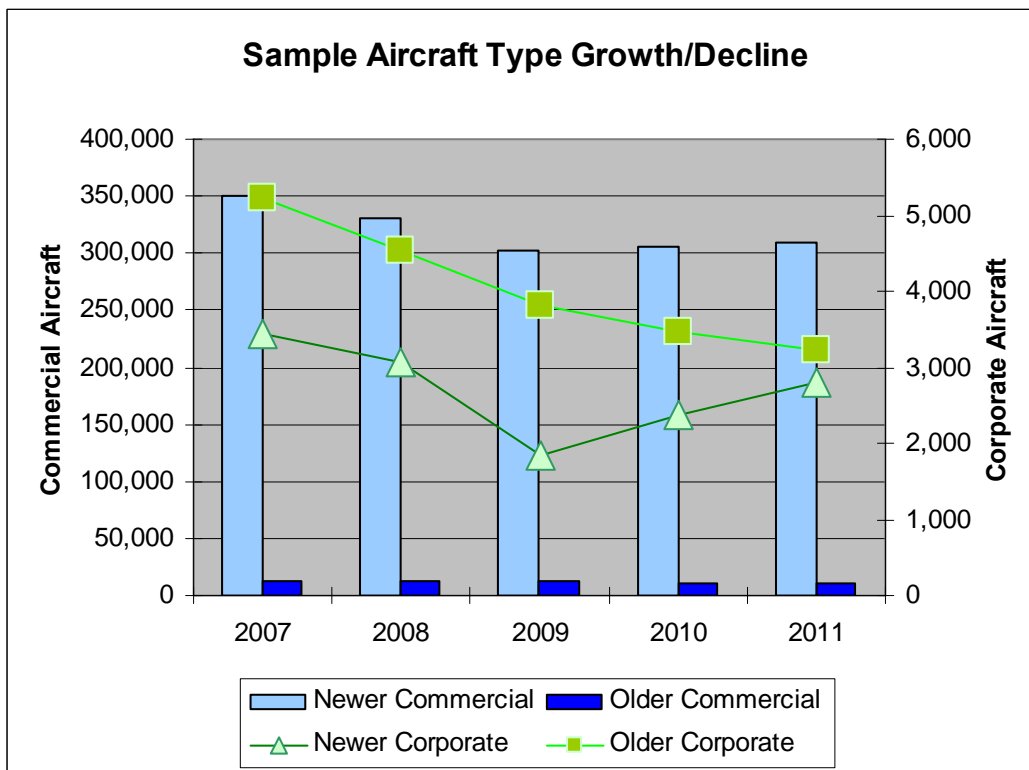


# Historical Annual Operations and Fleet Mix Comparisons



Source: FAA OPS ATADs

Operations at Phoenix Sky Harbor International Airport increased 2.81% in 2011. This is the first year since 2003 that operations have increased at PHX.



Examples of Aircraft sampled:  
 Commercial: True Stage III and IV aircraft (Newer Boeing and Airbus jets) compared to older hush kitted aircraft (Boeing 727, MD80's)  
 Corporate: Newer Citation and Embraer Aircraft compared to older Lear Jets

The aircraft fleet mix continues to change as older aircraft are replaced with newer, quieter and more efficient ones. During the past five years, many older aircraft have been retired due to continuing noise concerns, high maintenance and fuel costs. In 2011, all older aircraft groupings showed a decrease in operations, while all newer aircraft groupings showed an increase.



# Annual Noise Complaints by Jurisdiction

City	2007		2008		2009		2010		2011	
	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints
Anthem	-	-	-	-	-	-	-	-	-	-
Apache Junction	-	-	1	1	-	-	-	-	-	-
Carefree	-	-	-	-	-	-	-	-	-	-
Cave Creek	1	1	-	-	-	-	-	-	-	-
Chandler	-	-	-	-	1	1	1	1	-	-
Fort McDowell	-	-	-	-	-	-	-	-	1	2
Fountain Hills	1	12	1	1	-	-	-	-	-	-
Gilbert	-	-	2	3	4	4	1	1	-	-
Glendale	1	1	-	-	-	-	-	-	1	3
Goodyear	-	-	-	-	-	-	-	-	1	1
Gold Canyon	1	1	-	-	-	-	-	-	-	-
Laveen	1	1	-	-	-	-	-	-	-	-
Maricopa County	-	-	-	-	-	-	-	-	-	-
Mesa	7	7	10	165	43	217	19	122	9	86
New River	-	-	-	-	-	-	-	-	-	-
Paradise Valley	1	1	-	-	-	-	-	-	-	-
Peoria	1	1	-	-	1	1	-	-	-	-
Phoenix	24	649	20	96	14	17	20	35	20	22
Queen Creek	-	-	1	1	-	-	-	-	-	-
Rio Verde	-	-	-	-	-	-	-	-	-	-
Scottsdale	4	20	5	1,041	5	1,287	6	9	4	5
Sun City West	-	-	-	-	-	-	-	-	-	-
Surprise	-	-	-	-	-	-	-	-	-	-
Tempe	16	71	19	31	14	21	14	23	9	10
Unknown	1	1	-	-	-	-	-	-	-	-
<b>Totals:</b>	<b>59</b>	<b>766</b>	<b>59</b>	<b>1,339</b>	<b>82</b>	<b>1,548</b>	<b>61</b>	<b>191</b>	<b>44</b>	<b>129</b>

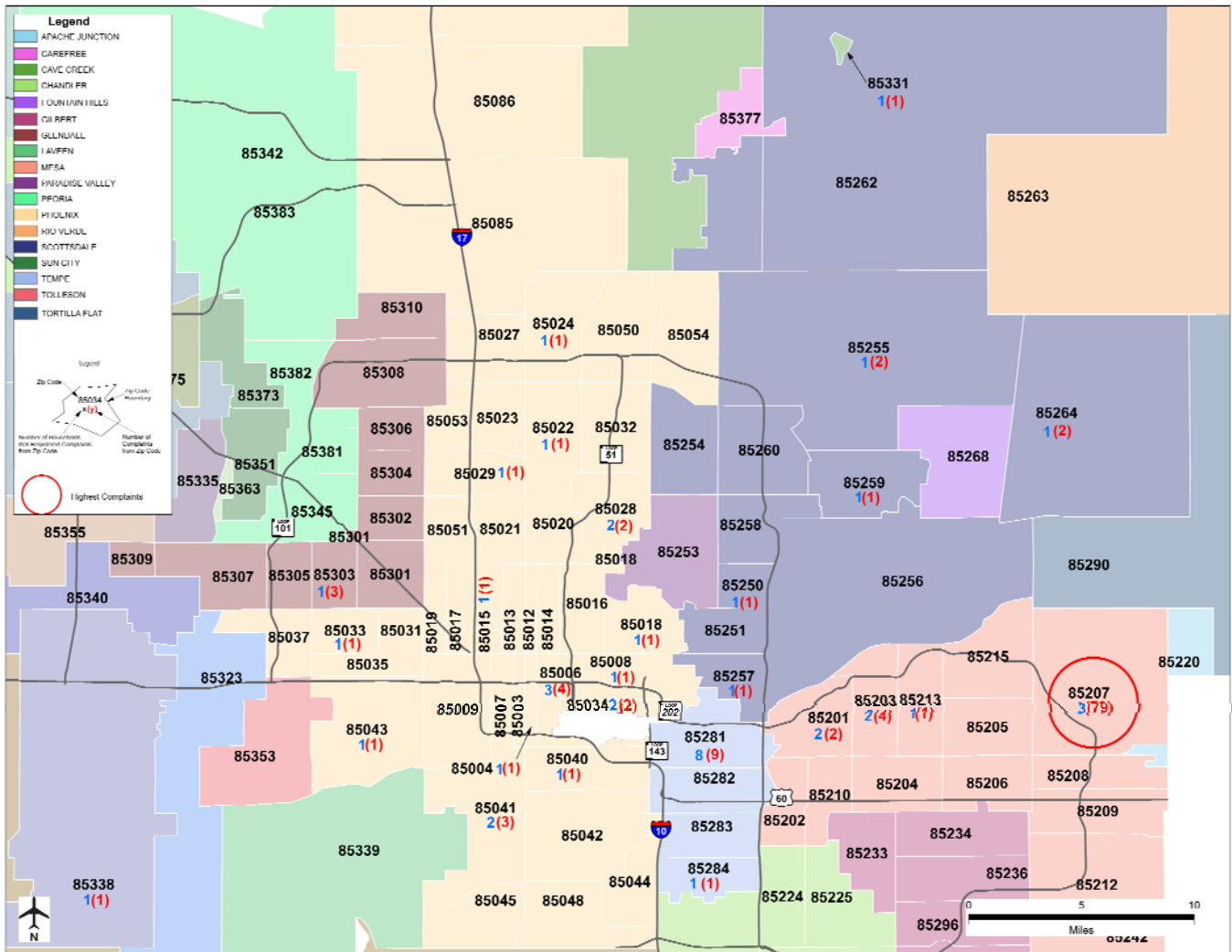
In 2011 noise complaints and households registering complaints decreased by 28% from 2010 totals. The number of complaints decreased by 32% during the same period.

While the Aviation Department received 129 noise complaints in 2011, one household from East Mesa registered 57 complaints. This caller represented 44% of the total complaints regarding Phoenix Sky Harbor International Airport operations.

Complaints from jurisdictions closest to Phoenix Sky Harbor International Airport continue to decline. This can be attributed to the Aviation Department's Community Noise Reduction Program and increased performance in fly-friendly procedures at Phoenix Sky Harbor International Airport.



# 2011 Noise Complaints by Zip Code

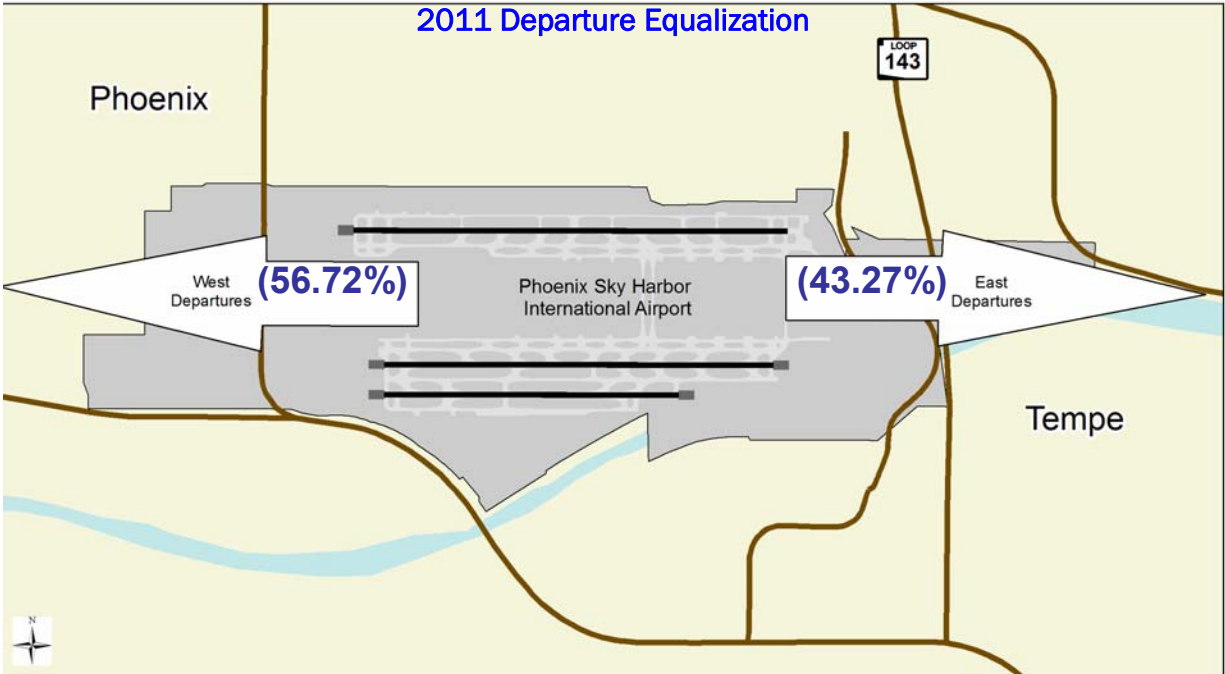


## ZIP CODES WITH HIGHEST COMPLAINT TOTALS

- 85207 registered 79 complaints

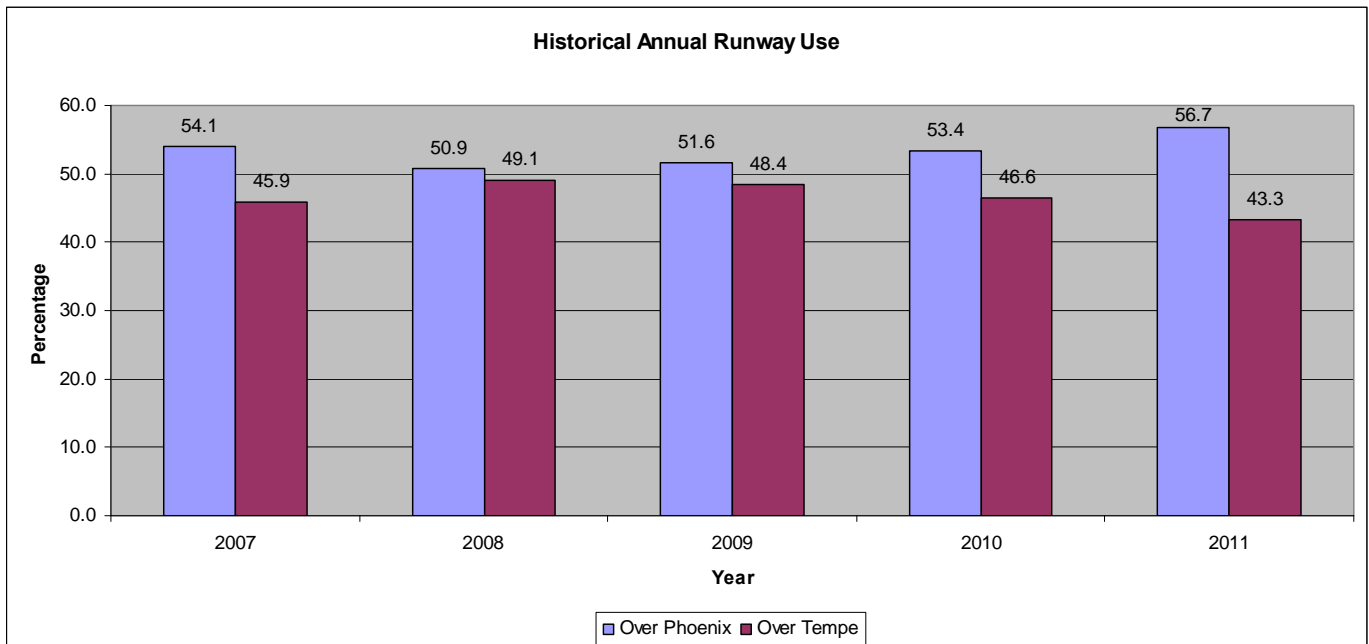


# 2011 PHX Runway Utilization

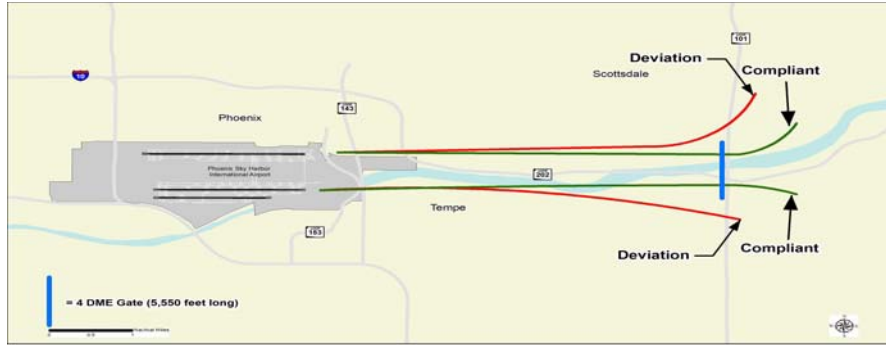


Due to aircraft having to depart into the wind, runway use at Phoenix Sky Harbor International Airport is generally predictable with consistent winds. At Phoenix Sky harbor International Airport, winds generally flow east to west at night and, by mid-morning, flow west to east, caused predominantly by solar radiation.

In addition to the favorable wind conditions for equalization of runway use, Aviation Department staff communicates its importance with local FAA officials. Runway equalization helps even the distribution of noise exposure in the surrounding communities. In 2011 winds at Sky Harbor International Airport were predominantly from the west which led to an increase in westerly operations.



# 2011 4 DME Departure Procedure Compliance



## 2011 4 DME Compliance: 98.25%

2007	2008	2009	2010	2011
96.78%	96.44%	98.03%	98.38%	98.25%

All jet aircraft departing from Phoenix Sky Harbor International Airport to the east are directed to fly straight out until reaching approximately 5 Nautical Miles (4 DME) 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 FAA and aircraft operators to ensure that the procedure is adhered to when airspace demands and safety allow. Since 2009, the annual 4DME compliance percentage has remained consistent above 98%.

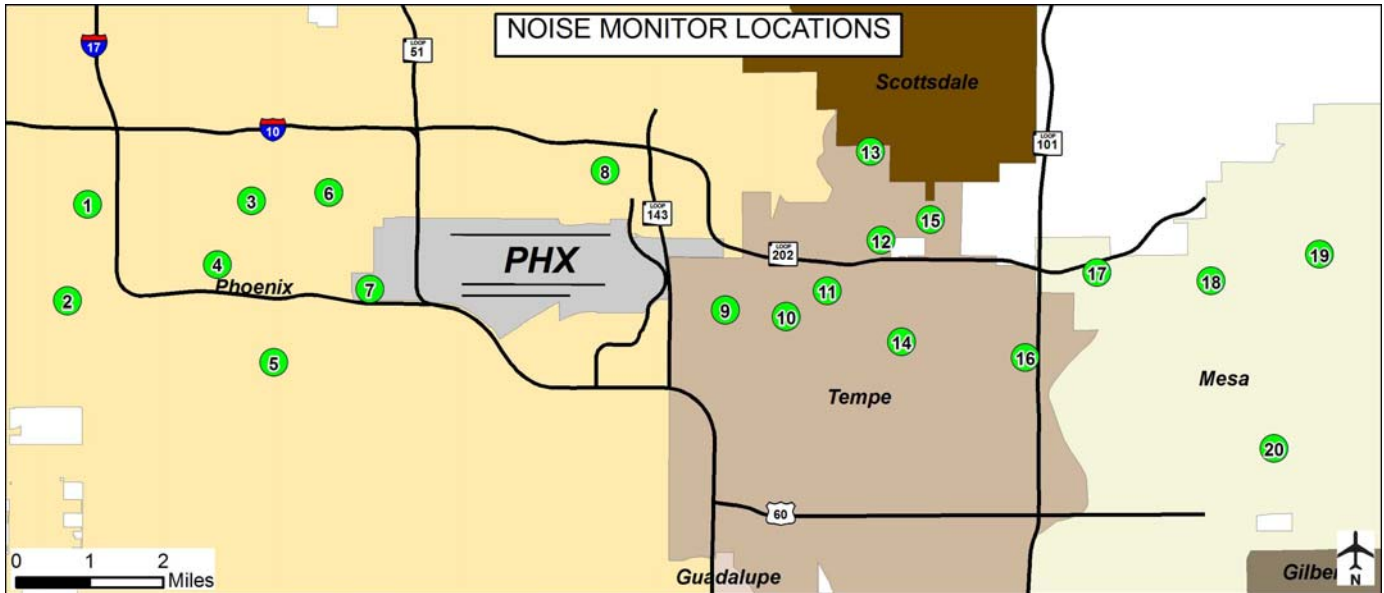
The 4 DME Procedure continues to be one of the most vital components to the Aviation Department's commitment to reducing noise exposure.

Airline Code	Airline Name	Deviations	Total Departures to the East	% Compliance
BSK	Miami Air International	0	13	100.00
SCX	Sun Country Airlines	0	49	100.00
SWQ	Swift Air	0	111	100.00
TRS	Airtran Airways	0	256	100.00
ACA	Air Canada	1	312	99.68
DAL	Delta Airlines	13	3,595	99.64
FDX	Federal Express	4	663	99.40
ASA	Alaska Airlines	7	1,036	99.32
COA	Continental Airlines	13	1,695	99.23
UAL	United Airlines	16	2,022	99.21
WJA	West Jet	3	370	99.19
FFT	Frontier Airlines	9	846	98.94
USA	US Airways	423	35,614	98.81
JBU	Jet Blue Airways	4	307	98.70
HAL	Hawaiian Airlines	4	281	98.58
SWA	Southwest Airlines	435	25,261	98.28
BAW	British Airways	1	54	98.15
ABX	Airborne Express	6	244	97.54
AAL	American Airlines	68	2,649	97.43
UPS	United Parcel Service	19	598	96.82
SKW	Skywest Airlines	78	2,385	96.73
Total			78,361	
Operators under 96% Compliance				
CCI	Capital Cargo International	10	110	90.91
EJA	Express Jet Airlines	33	311	89.39
GA	General Aviation	209	1,878	88.87
FIV	Citationshares	7	61	88.52
OPT	Flight Options	8	62	87.10
USC	US Check	56	223	74.89
Total			2,645	





# 2011 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. In 2009, all monitors were replaced. The new state-of-the-art monitors utilize DSL and wireless communications which are less susceptible to communication failures than the analog phone lines used in the older monitors.

The new monitors are able to differentiate with greater accuracy between aircraft noise events and community events. This has led to more noise events at the site locations being correlated to aircraft operations. However, noise levels have continued to decrease since 2006.

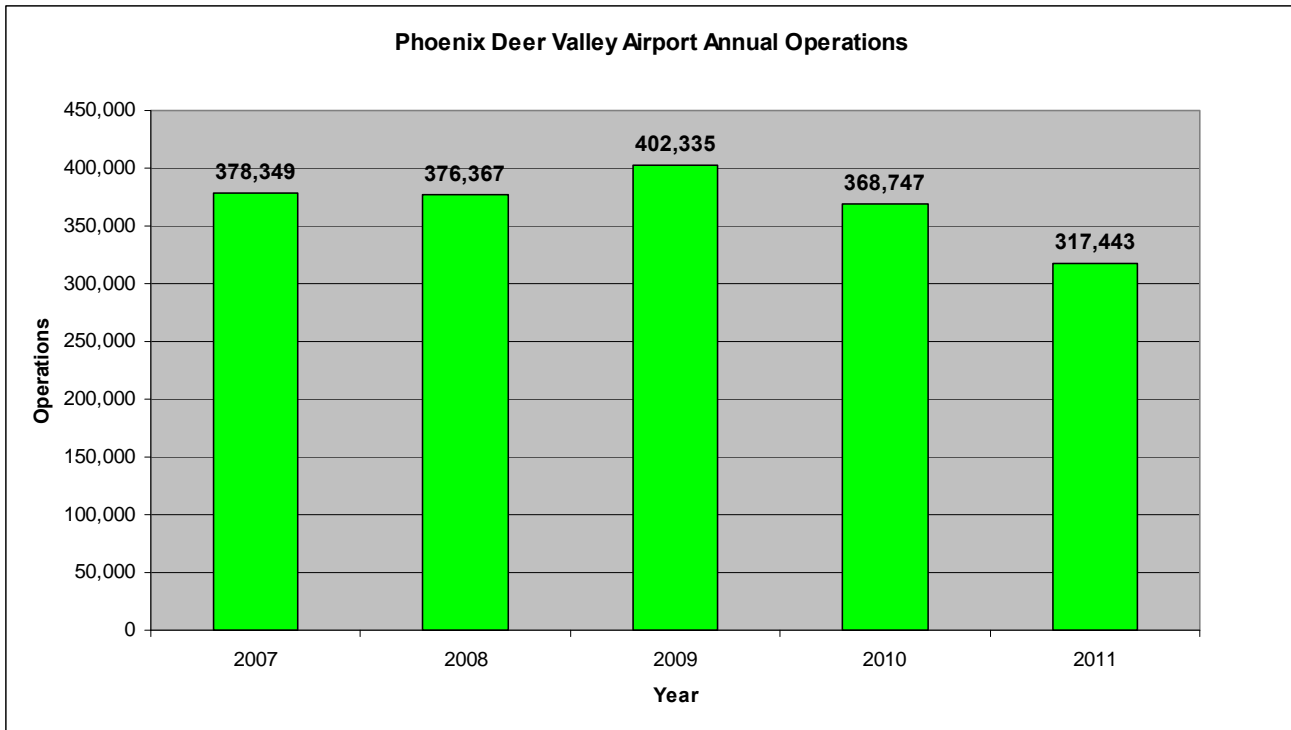
It is important to note that a change in 3 decibels is commonly recognized as the smallest increase in noise exposure that is audible to the human ear.

Noise Monitoring Site	2007	2008	2009	2010	2011	5 Year Trend
NMS01	52.5	46.6	48.2	50.6	50.3	↓
NMS02	57.5	51.8	52.7	54.7	55.0	↓
NMS03	55.5	52.2	52.9	54.4	53.3	↓
NMS04	64.2	57.6	55.9	58.6	59.3	↓
NMS05	57.8	52.2	53.3	55.3	55.3	↓
NMS06	49.4	44.2	45.4	48.5	46.4	↓
NMS07	69.4	64.4	66.2	67.4	67.6	↓
NMS08	50.3	46.1	44.6	44.2	47.2	↓
NMS09	64.8	60.1	61.3	63.2	63.7	↓
NMS10	58.4	53.5	55.5	57.4	57.7	↓
NMS11	65.8	60.3	62.5	63.8	64.5	↓
NMS12	61.1	55.2	59.1	61.4	61.1	-
NMS13	46.1	40.8	41.7	43.5	42.1	↓
NMS14	49.5	44.9	44.2	44.5	44.7	↓
NMS15	57.4	51.9	53.2	55.8	55.3	↓
NMS16	46.6	41.9	41.3	42.1	42.2	↓
NMS17	55.4	49.4	51.4	54.1	54.3	↓
NMS18	52.1	45.5	47.4	51.5	49.9	↓
NMS19	48.6	43.7	45.6	48.7	46.5	↓
NMS20	47.9	46.3	42.8	44.6	43.2	↓



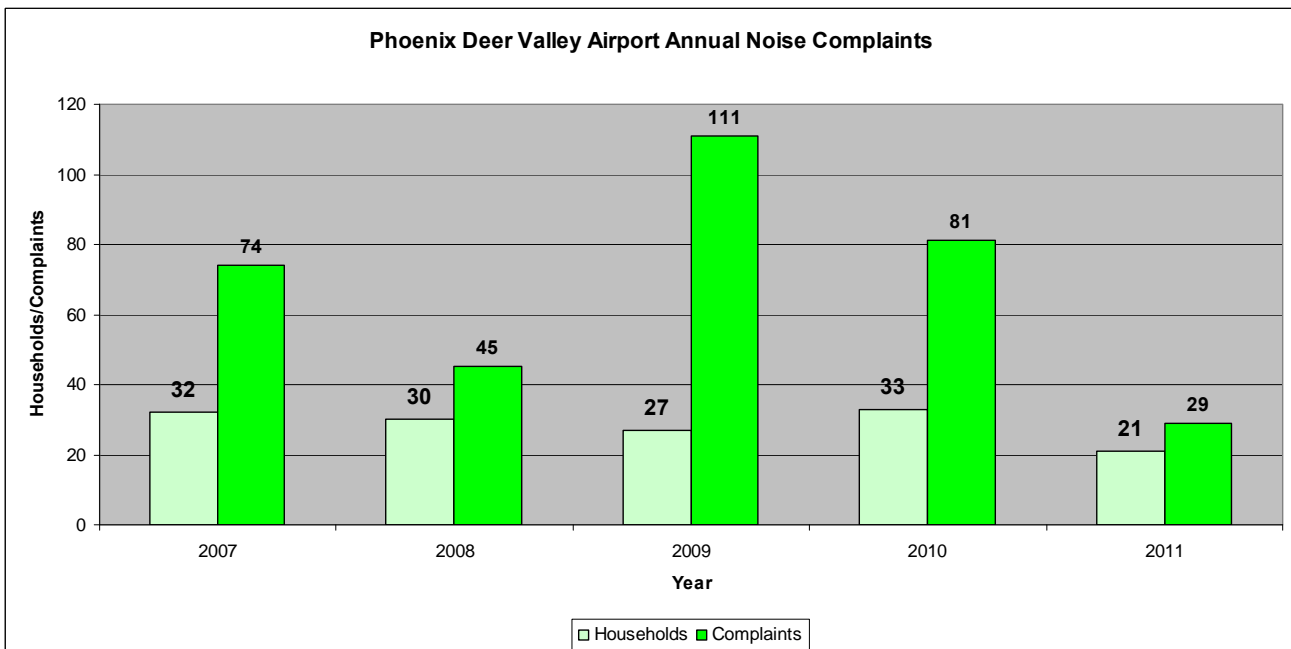
# Phoenix Deer Valley Airport Operations and Noise Complaints

Operations at the General Aviation airports owned and operated by the City of Phoenix (Phoenix Goodyear and Phoenix Deer Valley Airports) continue to decline. Noise complaints and households registering complaints showed a decline from 2010 levels.

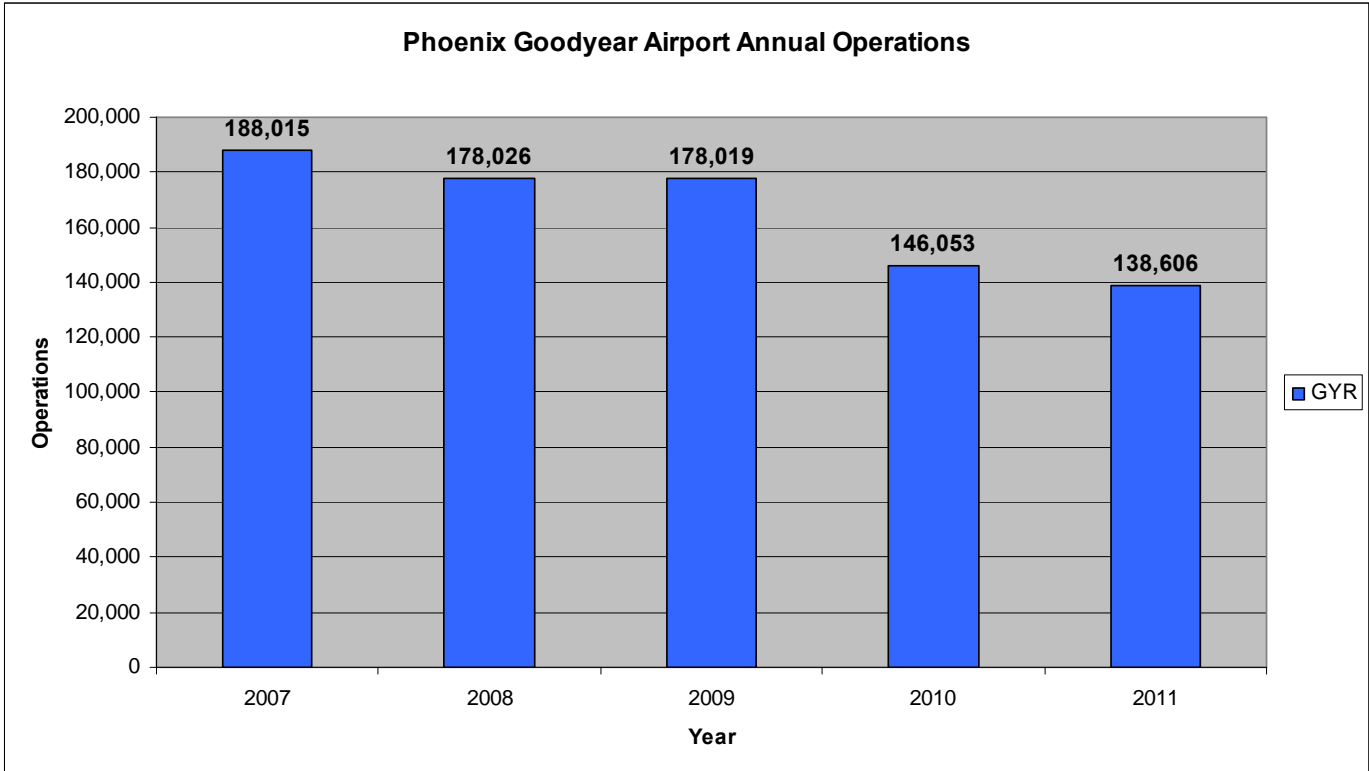


Source: FAA OPS ATADs

Phoenix Deer Valley Airport 2011 Monthly Operations													
Month	Jan.	Feb.	Mar.	Apr.	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
DVT	23,948	24,038	24,704	27,488	27,077	24,304	26,889	27,446	31,513	30,680	28,323	21,033	<b>317,443</b>



# Phoenix Goodyear Airport Operations and Noise Complaints



Source: FAA OPS ATADs

Phoenix Goodyear Airport 2011 Monthly Operations													
Month	Jan.	Feb.	Mar.	Apr.	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
GYR	13,952	11,647	12,421	10,982	10,284	10,798	11,337	12,890	11,248	11,944	10,727	10,376	<b>138,606</b>

