

# ***PHX DVT BYR***

 CITY OF PHOENIX AVIATION DEPARTMENT



## **Annual Noise Report 2017**

Rev. 3/27/18

## Table of Contents

<b>Introduction</b> .....	2
<b>Summary of Airport Activities for Managing and Resolving Noise Impacts</b> .....	3
<b>LAWSUIT</b> .....	5
<b>Online Tools and Resources</b> .....	5
<b>Flight Path Website</b> .....	5
<b>Smartphone Noise Complaint App</b> .....	5
<b>2017 DATA SUMMARY</b> .....	6
<b>Noise Abatement Procedures</b> .....	7
<b>Annual Noise Complaints by PHX Jurisdiction</b> .....	9
<b>Zip Code Complaint Statistics</b> .....	9
<b>2017 NOISE COMPLAINTS BY ZIP CODE</b> .....	10
<b>Historical Annual Operations and Fleet Mix Comparisons</b> .....	11
<b>2017 PHX DEPARTURE DIRECTION</b> .....	12
<b>2017 4 DME DEPARTURE PROCEDURE COMPLIANCE</b> .....	14
<b>2017 NOISE MONITORING SITE MEASUREMENTS</b> .....	15
<b>DEER VALLEY &amp; GOODYEAR AIRPORTS ANNUAL OPERATIONS</b> .....	16
<b>DEER VALLEY &amp; GOODYEAR AIRPORTS ANNUAL NOISE COMPLAINTS</b> .....	17
<b>CONTACT US</b> .....	18

## 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 2017. The report includes information on operational counts, aircraft fleet mix, noise complaints, runway usage, noise abatement procedures, noise monitoring, and general aviation activity. Updates on the pending lawsuit against the FAA as well as legislative efforts in support of an environmental assessment are outlined.

The roles of the Airspace & Noise Program in the Aviation Department include listening to common questions and concerns about noise mitigation issues and to provide additional information for community members. Staff are able to provide information on current and future noise mitigation efforts and answer quest

The City of Phoenix is dedicated to minimizing noise exposure to 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

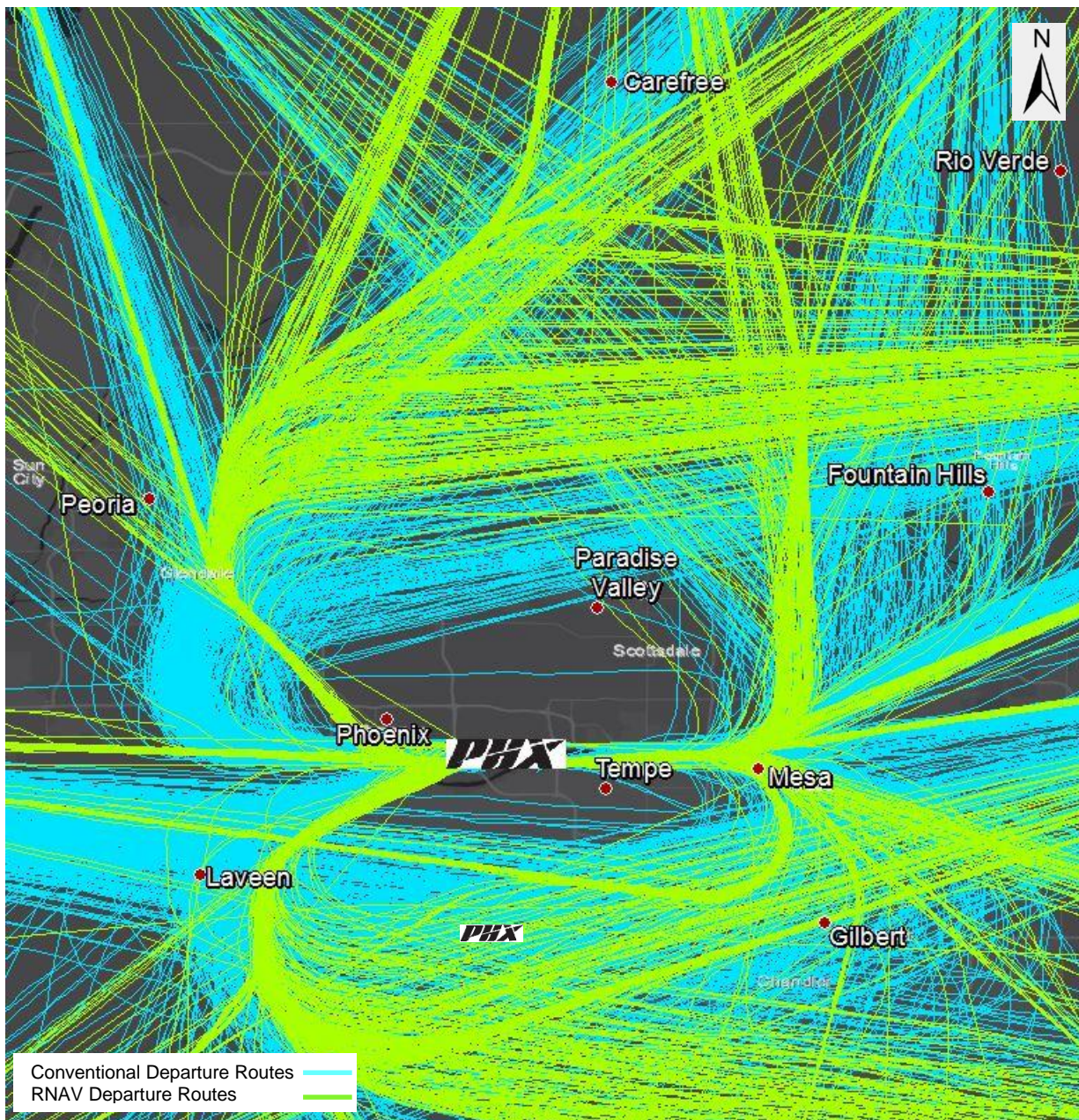
working groups, the Federal Aviation Administration (FAA), and other aviation users in a continued effort to increase awareness of the importance for all aircraft operators to fly in a neighborly fashion. One of the goals of this report and our outreach is to share information with the public and to encourage further communication between all parties involved regarding the issue of noise exposure.

### Summary of Airport Activities for Managing and Resolving Noise Impacts

On Sept. 18, 2014 the Federal Aviation Administration (FAA) implemented changes in flight paths using NextGen satellite-based navigation as part of its effort to streamline departures (as shown in Figure A) and arrivals to and from Phoenix Sky Harbor International Airport. NextGen is the FAA's extensive air traffic management modernization program that through satellite-based area 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 a proper environmental assessment or notification to the public.

Many communities across the country, including Phoenix, continue to be greatly affected by the flight path changes associated with NextGen 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, **215,882** comments from **2,049** households have been filed through 2017.

**Figure A- Departures**



## **LAWSUIT**

On August 29, 2017, the U.S. Court of Appeals ruled in favor of the City of Phoenix and historic neighborhoods' lawsuit against the FAA over flight path changes. A Memorandum regarding Implementation of the order to vacate the September 18, 2014 flight paths was proposed on November 30, 2017. The Memorandum provides for a two-step process for reverting the RNAV (area navigation) western departure routes to their previous corridors.

## **Online Tools and Resources**

The Aviation Department is continuing its ongoing effort to improve noise reporting methods that are simple and respond to the specific needs of community members. The department, in addition to the dedicated section of Sky Harbor's website, has launched a new noise complaint app for smartphones to make submitting noise complaints easier.

### **Flight Path Website**

Skyharbor.com/flightpaths offers updates, flight tracking and numerous options for reporting noise concerns. The Aviation department continues to distribute updates to community members and can 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 **178** subscribers receiving flight path updates.

### **Smartphone Noise Complaint App**

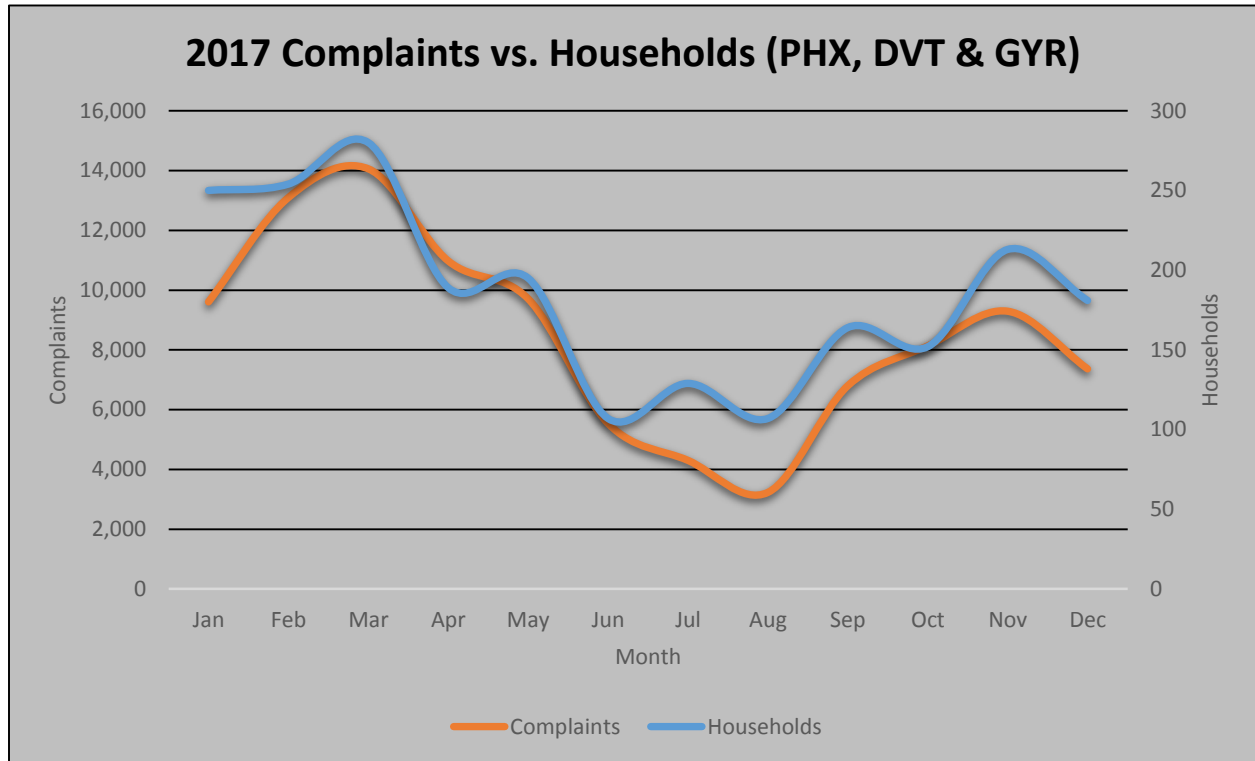
The launch of the smartphone app on February 10, 2016 allows community members to submit complaints in four simple steps. The smartphone app is now one of four ways community members can submit noise complaints (via Online Web form, Hotline, PublicVue Flight Tracker or Smartphone App).

## 2017 DATA SUMMARY

The City of Phoenix Aviation Department received **102,110** total complaints regarding aircraft noise around the valley. There were 100,808 complaints from 666 households regarding Phoenix Sky Harbor International Airport operations; 1,261 complaints from 108 households regarding Phoenix Deer Valley Airport operations; and 41 complaints from 9 households regarding Phoenix Goodyear Airport operations.

The continued increase in submitted complaints is directly attributed to the flight path changes implemented by the FAA in September 2014. The ease of submitting noise complaints via the smartphone app also adds to the growth in noise complaints.

- In 2017, aircraft operations decreased at Phoenix Sky Harbor International Airport by 2.2% from 440,643 operations in 2016 to 430,968 operations in 2017.
- Phoenix Deer Valley Airport handled 378,777 operations in 2017 compared to 370,034 operations in 2016, representing a 2.36% increase.
- Phoenix Goodyear Airport handled 111,163 operations in 2017 compared to 123,334 operations in 2016, representing a 9.87% decrease.



### 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. Equalization is based on the overall count of aircraft operations (not the amount of hours, days or weeks) in each departure direction. Runway equalization helps to even the distribution of noise exposure in surrounding communities. **In 2017, PHX operated in west flow 54.2% of the year and 45.8% in east flow.**

The 4 DME procedure is designed to keep aircraft over the Salt River area and minimize noise exposure to residential areas. All jet aircraft departing from PHX to the east are directed to fly generally along the Salt River for 5 miles before turning. **In 2017, compliance with the 4 DME Departure Procedure was 99.61%, representing the highest compliance rate to date.**

**ANCA – The  
Airport Noise  
and Capacity  
Act of 1990**

The City of Phoenix has implemented many noise abatement and mitigation efforts in order to decrease residents' exposure to noise. Some residents exposed to noise from aircraft operations have suggested that the City of Phoenix limit flight operation hours (or impose a curfew) to help solve this issue. Unfortunately, because of *The Airport Noise and Capacity Act of 1990* (ANCA), there are limitations to the types of restrictions publicly-funded airports are allowed to impose. The City of Phoenix placing a restriction on which hours aircraft can operate by enforcing a curfew would be a violation of this rule. All three of the City of Phoenix's airports are publicly-funded, and would not be able to impose a curfew/other restrictions.



## Phoenix Sky Harbor International Summary

### Annual Noise Complaints by PHX Jurisdiction

City	2012		2013		2014		2015		2016		2017	
	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints
Anthem	-	-	-	-	-	-	-	-	2	2	4	5
Apache Junction	-	-	-	-	-	-	2	3	-	-	-	-
Avondale	-	-	-	-	-	-	-	-	2	43	1	14
Carefree	-	-	-	-	-	-	2	2	2	123	1	441
Cave Creek	-	-	-	-	3	3	34	473	14	322	10	134
Chandler	-	-	-	-	6	8	6	29	2	2	6	185
Fort McDowell	-	-	-	-	-	-	2	43	2	4,726	1	3,336
Fountain Hills	1	1	-	-	-	-	3	6	2	3	-	-
Gilbert	-	-	1	3	-	-	5	7	4	11	5	452
Glendale	-	-	-	-	11	27	56	432	26	2,269	24	1,309
Gold Canyon	-	-	-	-	-	-	-	-	2	2	-	-
Goodyear	-	-	-	-	1	1	3	3	7	12	6	104
Heber	-	-	-	-	-	-	-	-	-	-	1	3
Mesa	10	67	13	158	25	146	60	1,304	13	715	30	749
New River	-	-	-	-	1	1	4	38	4	14	1	1
Out of State	-	-	-	-	2	2	1	1	-	-	-	-
Paradise Valley	-	-	-	-	1	1	10	42	7	99	6	46
Peoria	1	1	1	4	-	-	15	21	5	12	2	2
Phoenix	13	16	16	22	545	2,522	1,025	11,889	550	57,893	465	81,139
Queen Creek	-	-	-	-	-	-	25	37	1	3	-	-
Rio Verde	-	-	-	-	-	-	-	-	1	1	1	1
Scottsdale	4	7	3	7	37	261	262	9,370	121	16,842	120	12,725
Sun City	-	-	-	-	-	-	4	4	2	11	1	1
Sun City West	-	-	-	-	2	3	1	2	1	1	-	-
Surprise	-	-	-	-	1	1	1	1	-	2	1	2
Tempe	9	10	10	26	22	29	70	533	79	1,158	60	1,460
Tolleson	-	-	-	-	-	-	3	3	-	-	1	1
Wittmann	-	-	-	-	-	-	-	-	1	1	-	-
<b>Totals:</b>	<b>38</b>	<b>102</b>	<b>44</b>	<b>220</b>	<b>657</b>	<b>3,005</b>	<b>1,594</b>	<b>24,243</b>	<b>847</b>	<b>84,264</b>	<b>747</b>	<b>102,110</b>

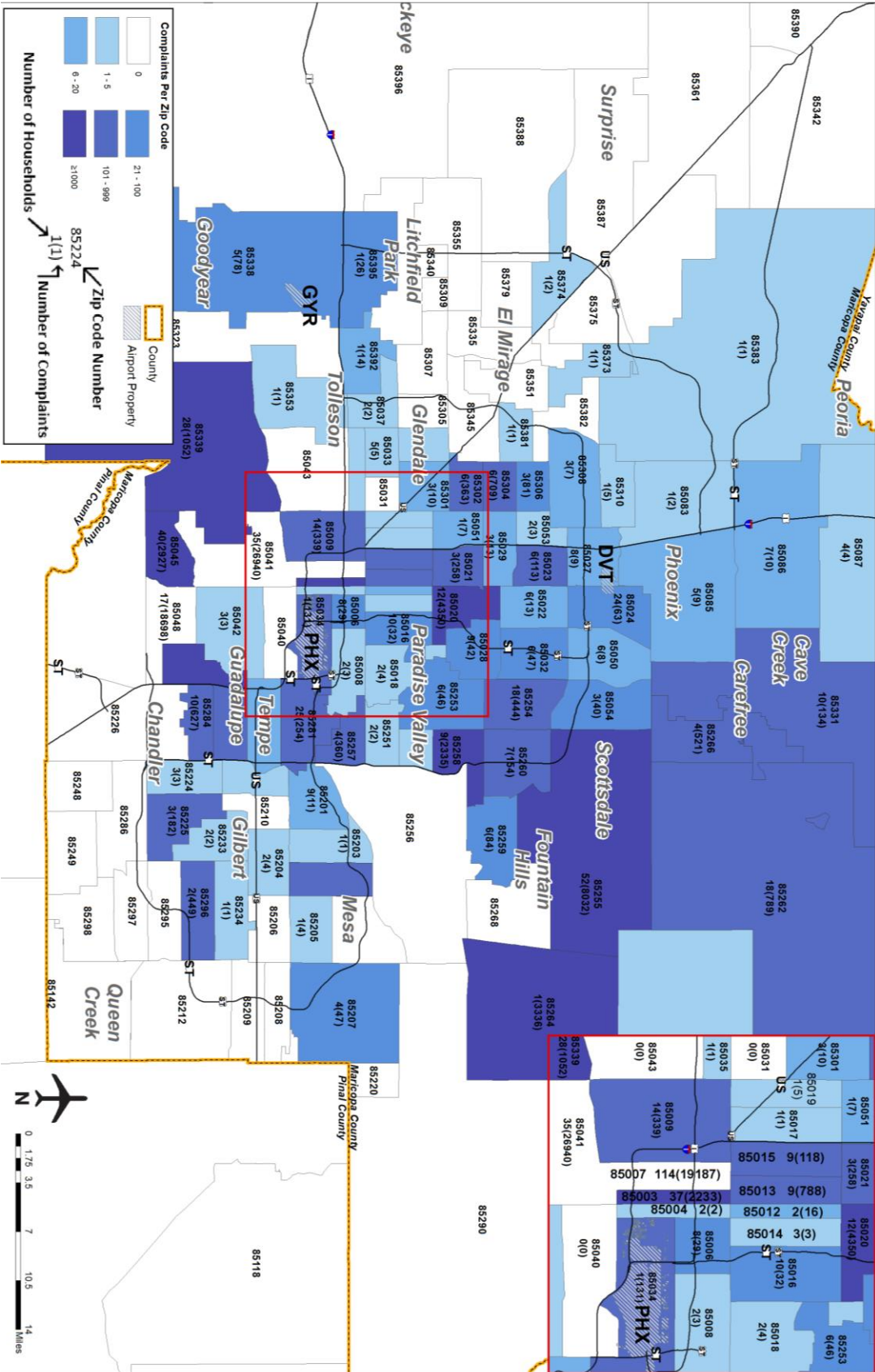
In 2017 noise complaints for Phoenix Sky Harbor International Airport continued to increase dramatically from the introduction of NextGen RNAV arrival and departure procedures implemented by the FAA on September 18, 2014. The ease of filing noise complaints after the launch of the smartphone app in February 2016 attributed to the increase in complaints as well.

#### Zip Code Complaint Statistics

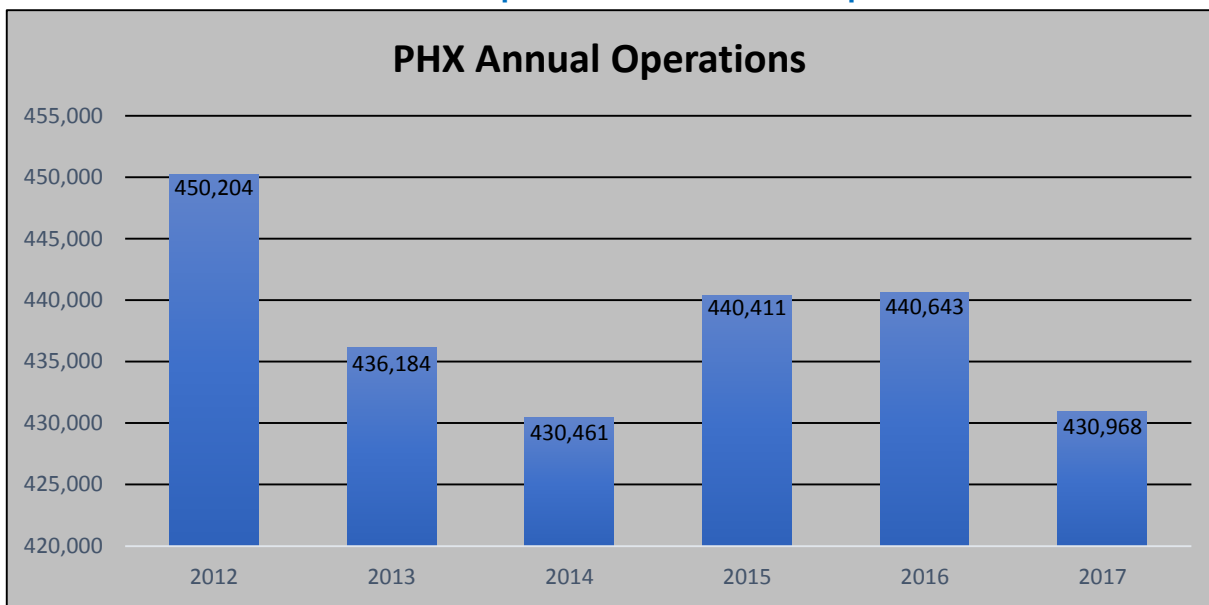
- The top three complaint reporting zip codes in descending order were 85041, 85007, and 85048.
- 35 households registered 26,940 noise complaints from zip code 85041.
- 8 zip codes reported one household reporting one complaint.

*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.*

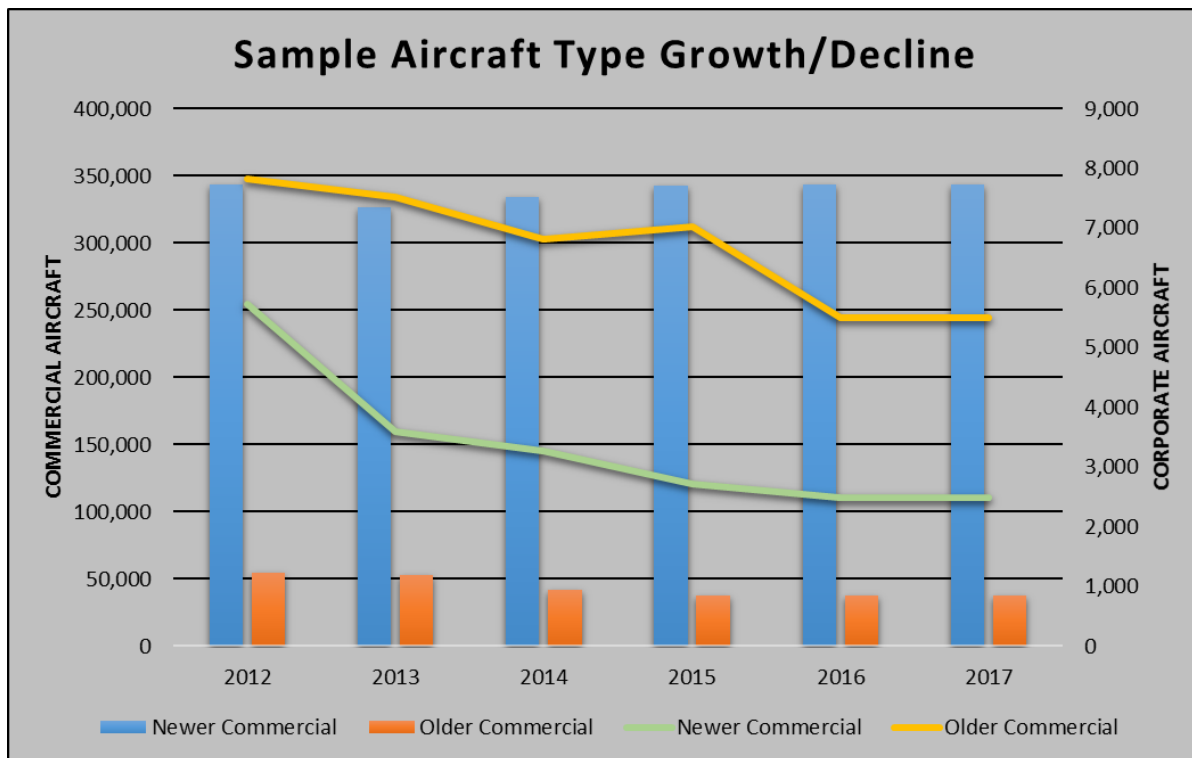
## 2017 NOISE COMPLAINTS BY ZIP CODE



### Historical Annual Operations and Fleet Mix Comparisons



Operations at Phoenix Sky Harbor International Airport decreased by 2.2% in 2017.

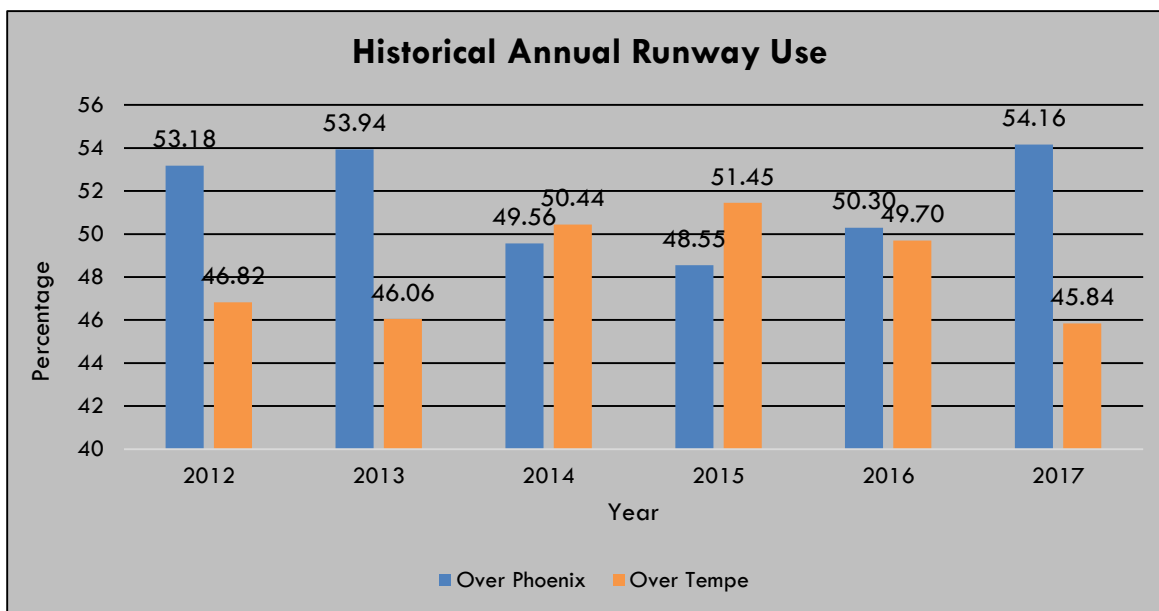


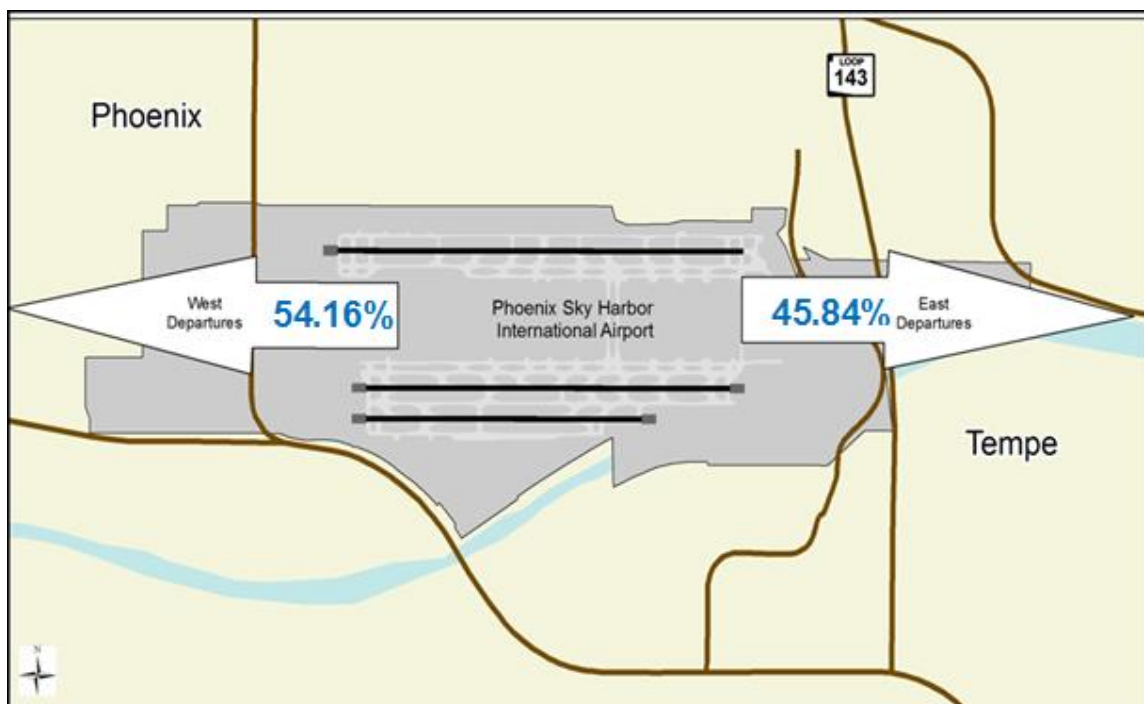
In 2017 the commercial service fleet mix saw the same amount of operations for Bombardier CRJ700/CRJ900 and Boeing 737. The number of newer commercial jet operations also remained the same, and the number of older commercial jet operations made a smaller increase compared to last year. The same number of Boeing 767 and

Airbus 306 fleets did not contribute to the additional operation of older commercial jets. The corporate fleet mix saw an increase by 4 operations and a slight increase in older. Use of many older series Lear Jets' usage remained the same. Overall, newer and older corporate jets experienced a downward trend since 2012.

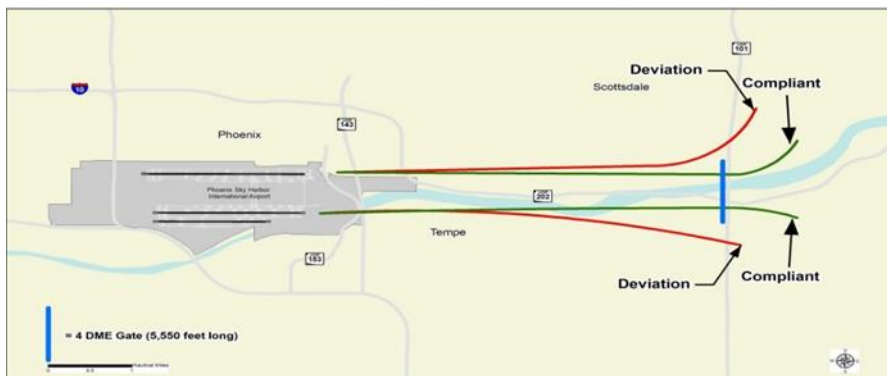
### 2017 PHX DEPARTURE DIRECTION

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.





### 2017 4 DME DEPARTURE PROCEDURE COMPLIANCE



### 2017 4 DME Compliance: 99.61%

#### Annual Compliance Percentage

2012	2013	2014	2015	2016	2017
97.08%	97.69%	98.47%	99.34%	99.71%	99.61%

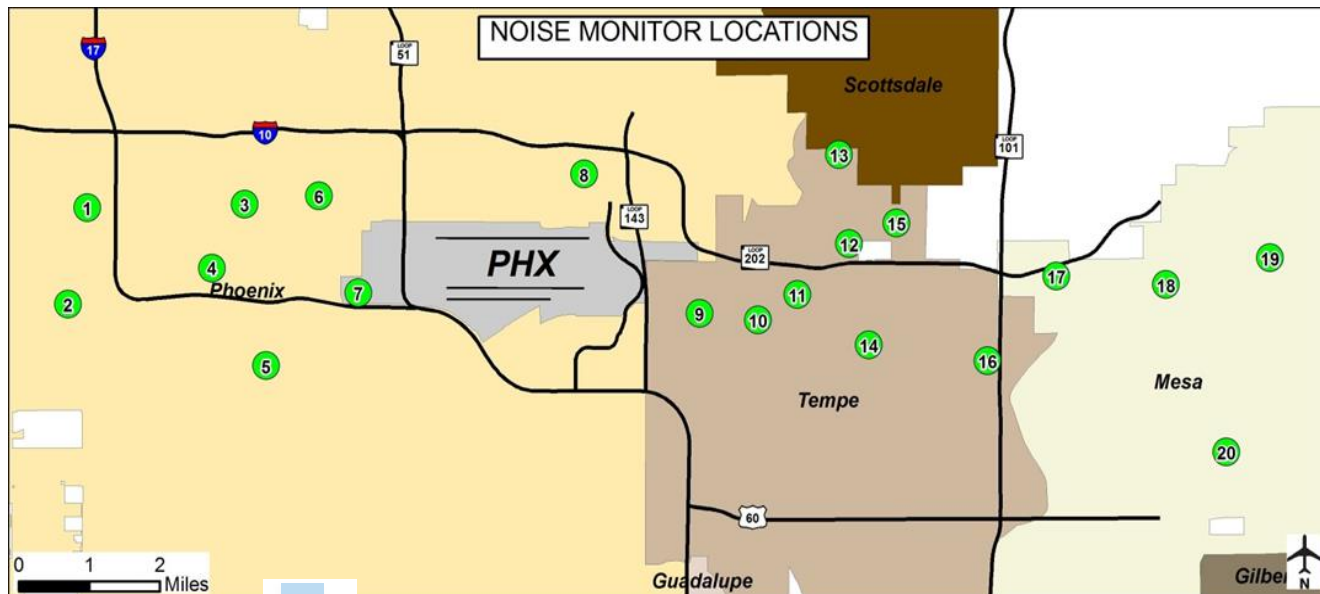
Flight	Airline Name	Count	Missed	% Compliant
ATN	Air Transport International	439	0	100.00%
WJA	WestJet Airlines	647	0	100.00%
DAL	Delta Airlines	3,810	2	99.95%
FDX	FedEx	1,093	1	99.91%
AAL	American Airlines	27,603	54	99.80%
ASH	Mesa Airlines	7,972	16	99.80%
SWA	Southwest Airlines	26,544	62	99.77%
UAL	United Airlines	3,918	10	99.74%
FFT	Frontier Airlines	1,596	5	99.69%
GTI	Atlas Air	322	1	99.69%
HAL	Hawaiian Airlines	318	1	99.69%
SKW	SkyWest Airlines	5,060	19	99.62%
ASA	Alaska Airlines	1,358	6	99.56%
JZA	Air Canada Jazz	186	1	99.46%
SCX	Sun Country Airlines	311	2	99.36%
ROU	Air Canada Rouge	210	2	99.05%
NKS	Spirit Airlines	404	4	99.01%
UPS	UPS Airlines	918	10	98.91%
KFS	Kalitta Charters	172	2	98.84%
JBU	JetBlue Airways	232	3	98.71%
GA	General Aviation	1,726	104	93.97%
EJA	NetJets	290	24	91.72%

All jet aircraft departing from PHX 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 and Tempe when procedures are not followed.

Since 2011 the rate of compliance with the 4 DME procedure has fluctuated, but has not fallen below 97.08% compliance. In 2016, compliance with the 4 DME procedure was at its highest, reaching 99.71%.

<b>TOTAL</b>	<b>85,129</b>	<b>329</b>	<b>99.61%</b>
--------------	---------------	------------	---------------

### 2017 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.

Noise Monitoring Site	2012	2013	2014	2015	2016	2017
NMS01	49.6	50.3	50.3	48.3	47.7	48.2
NMS02	55.6	54.7	60.1	45.9	53.8	53.7
NMS03	52.1	53.2	53.6	54.3	55.4	55.5
NMS04	59.1	59.0	58.6	58.6	59.0	58.8
NMS05	55.1	53.8	54.7	55.9	57.2	57.4
NMS06	46.6	37.3	47.0	47.8	46.1	45.7
NMS07	67.4	66.7	67.4	66.9	67.9	67.9
NMS08	45.3	44.6	47.0	44.3	38.4	39.7
NMS09	61.7	63.0	62.0	62.3	62.3	63.1
NMS10	56.8	53.4	54.1	55.5	53.7	53.8
NMS11	64.1	61.3	63.1	63.5	63.8	63.8
NMS12	60.9	60.4	61.5	60.2	61.2	62.3
NMS13	41.0	40.2	38.5	38.1	38.5	37.9
NMS14	44.4	44.2	40.4	42.9	41.4	*
NMS15	54.7	55.4	54.9	55.0	53.8	55.5
NMS16	41.9	41.7	40.5	42.0	42.9	41.1
NMS17	54.1	*	*	*	*	49.0
NMS18	49.2	48.3	48.1	48.3	49.0	48.9
NMS19	45.9	46.0	45.8	46.1	46.4	47.2
NMS20	44.3	43.4	45.3	45.4	44.2	45.1

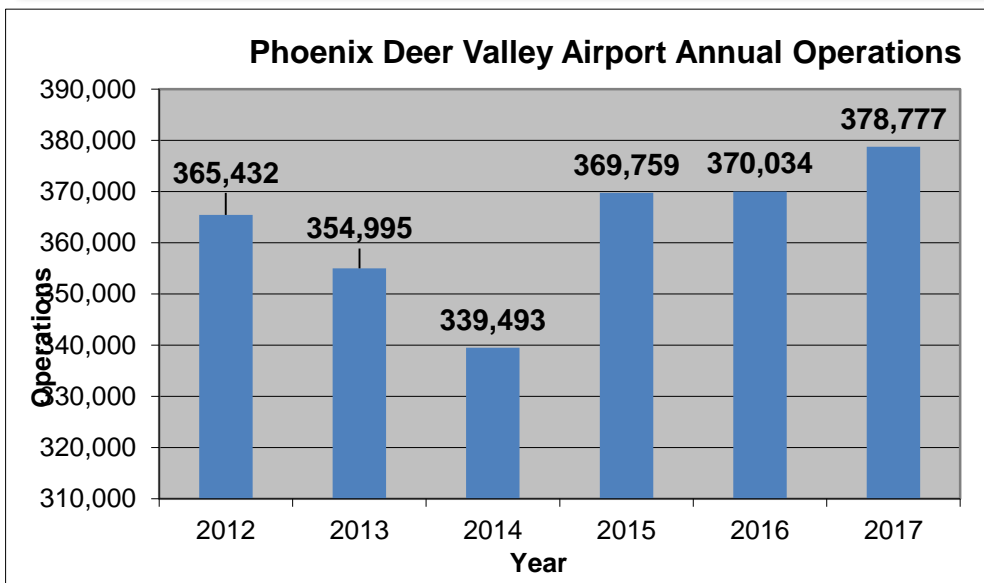
\*In 2016 Noise Monitoring Site (NMS) 14 was decommissioned to allow residential construction. The reinstatement of the site occurred in March of 2018 and has resumed reporting.

### DEER VALLEY & GOODYEAR AIRPORTS ANNUAL OPERATIONS

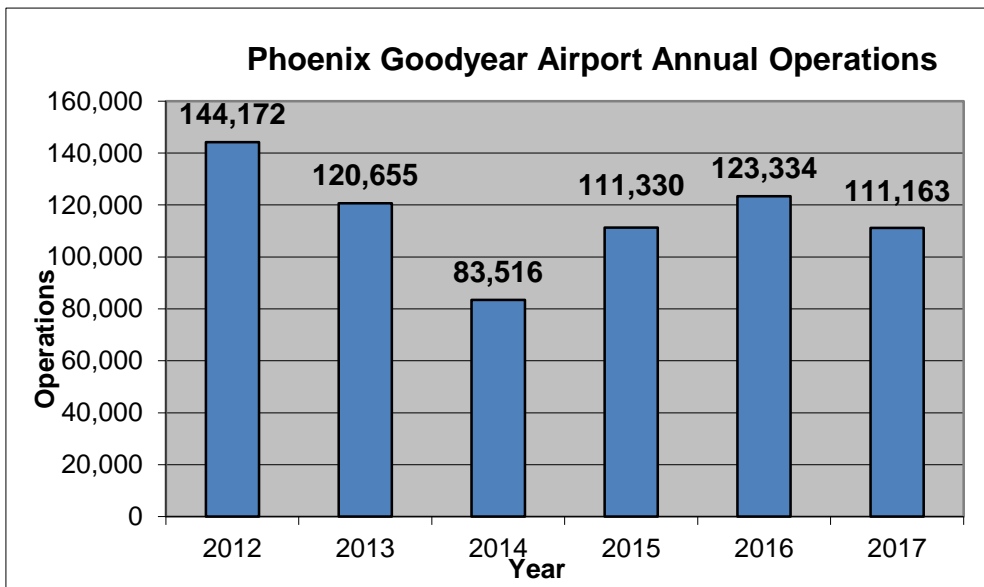
Annual operations at Deer Valley and Goodyear Airports remained high in 2017 due to an increase in flight school operations.

Source: FAA OPS ATADs

Phoenix Deer Valley Airport 2017 Monthly Operations													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
DVT	28,571	29,760	34,179	34,379	33,164	29,504	30,299	29,570	29,661	35,133	34,672	29,885	<b>378,777</b>



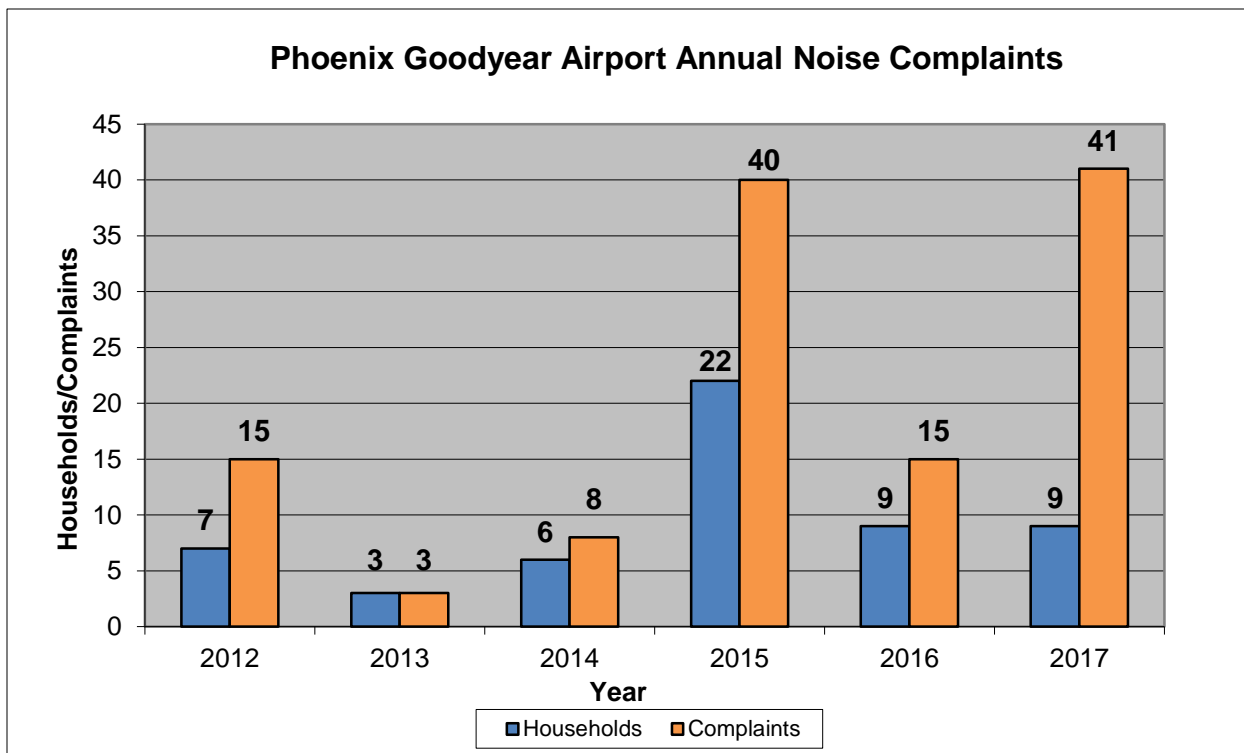
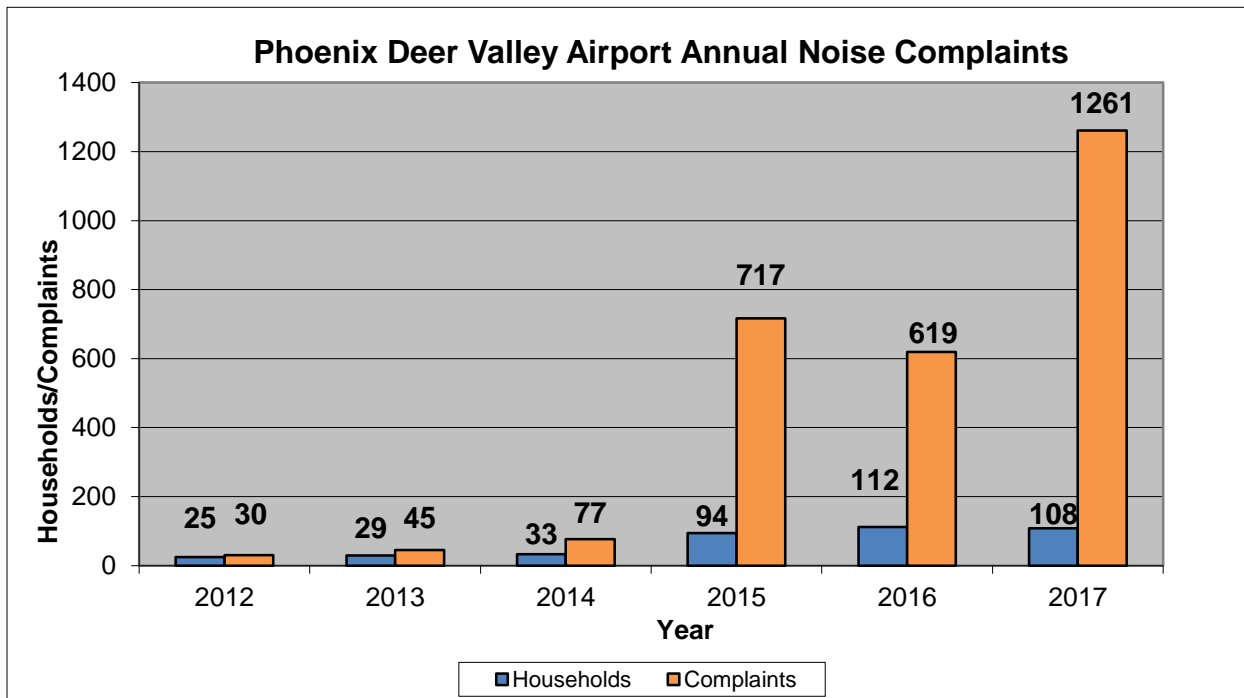
Phoenix Goodyear Airport 2017 Monthly Operations													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
GYR	8,930	8,224	12,287	9,603	8,481	7,077	8,292	12,631	11,628	8,497	9,091	6,422	<b>111,163</b>





### DEER VALLEY & GOODYEAR AIRPORTS ANNUAL NOISE COMPLAINTS

Noise complaints increased from 2016 levels while households registering complaints did not.



## CONTACT US

### **Kyle Binder**

Aviation Planner II

[Kyle.Binder@phoenix.gov](mailto:Kyle.Binder@phoenix.gov)

(602) 273-4300

### **Jazmine Hayes**

Aviation Planner I

[Jazmine.Hayes@phoenix.gov](mailto:Jazmine.Hayes@phoenix.gov)

(602) 273-2005

Complaint Hotline:

(844) 244-7430

Complaint Webform:

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

Download the Plane Noise app:

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

Subscribe to updates:

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