

# ***PHX DVT BYR***

 CITY OF PHOENIX AVIATION DEPARTMENT



## **Annual Noise Report 2016**

Rev. 5/22/17a

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## Introduction

This report summarizes annual trends in noise exposure from the City of Phoenix's three airports, Phoenix Sky Harbor International Airport (PHX), Phoenix Deer Valley Airport (DVT), and Phoenix Goodyear Airport (GYR), for calendar year 2016. The report includes information on operations, aircraft fleet mix, noise complaints, runway usage, noise abatement procedures, noise monitoring, and general aviation activity.

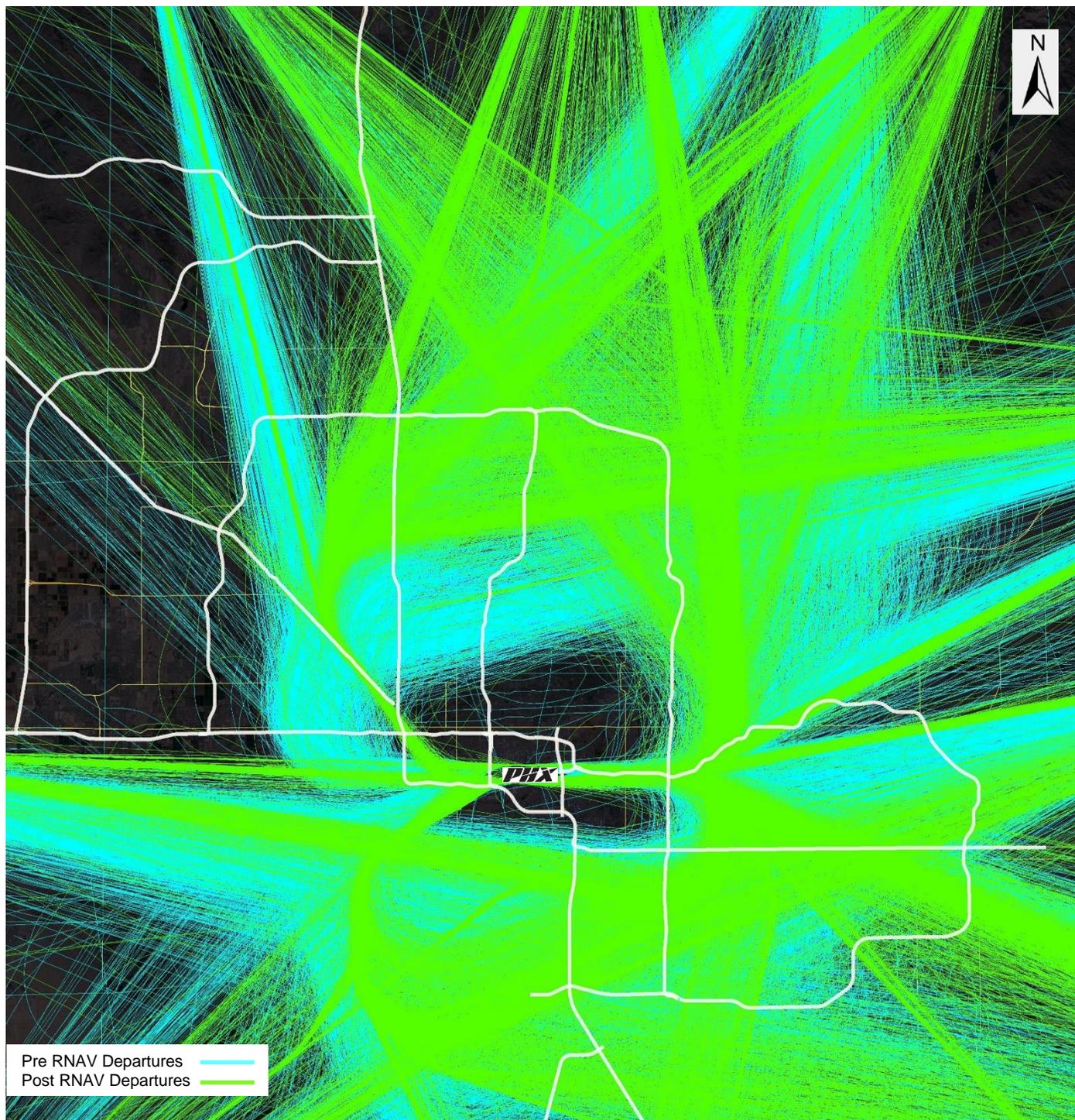
The Aviation Department Airspace & Noise section responds to questions and concerns about noise issues in the community. Staff maintain our website which contains technical noise information. Staff meets regularly with community groups, elected officials, advisory boards, airline officials, aviation 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 is to share information with the public and to encourage further communication between all parties.

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

On Sept. 18, 2014 the 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 PHX. 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 (resulting in quality of life changes to the community) 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 noise comments from 56 households. Since RNAV implementation, **107,502** comments from **1,483** households have been filed through 2016.

**Figure A- Departures**



## LAWSUIT

On June 1, 2015 the City of Phoenix filed a lawsuit against the FAA over flight path changes, alleging that the agency has created a negative impact on the Phoenix community without proper due process, notification and consideration. Shortly following the City's petition, impacted historic neighborhoods filed suit against the FAA as well. Community representatives and the City of Phoenix met with the FAA in Washington, D.C. for court-ordered mediation the week of March 23, 2016. Mediation concluded in May with no resolution. Oral arguments in the U.S. Court of Appeals took place on March 17, 2017. The outcome of the lawsuit is still pending.

### Runway Closures

The City of Phoenix provided residents with advanced notice of two separate runway closures that were scheduled to occur. Runway 7R/25L at DVT was temporarily closed for ten days from Aug. 18<sup>th</sup> – 28<sup>th</sup> to allow for runway pavement repairs. During this time, flight activities were performed on Runway 7L/25R. The north runway, Runway 8/26, at PHX was also temporarily closed from Oct. 6<sup>th</sup> – Nov. 6<sup>th</sup> for runway pavement repairs as well as signage and lighting improvements. All flight activities were performed on the southern runways, Runway 7R/25L and Runway 7L/25R.

## METROPLEX

A Metroplex is a geographic area covering several airports, serving major metropolitan areas and a diversity of aviation stakeholders. 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. Concerns over RNAV changes resulted in the Phoenix community's opposition to additional airspace studies under the FAA Metroplex program. The FAA Phoenix Metroplex Project was officially suspended by the FAA on December 11, 2015. On December 24, 2015, the FAA's response letter to the League of Arizona Cities and Towns acknowledged the need for better community coordination and specifically notes a delay of the Metroplex project so that additional outreach measures can be developed. These specific measures are yet to be created and implemented by the FAA.

## LEGISLATION AND LOBBYING

On April 19<sup>th</sup>, the United States Senate approved the FAA Reauthorization Act of 2016, which included language authored by Arizona Senators John McCain and Jeff Flake addressing concerns raised by Phoenix residents about the flight path changes at PHX. The bill required review of new airspace procedures and created an Airspace Management Advisory Committee to review and report to Congress on the FAA's process for developing proposed airspace changes. Congress later voted on July 13<sup>th</sup> to approve the Act (HB 636), continuing aviation programs and funding through Sept. 30, 2017.

On July 12<sup>th</sup>, Congressional Representatives David Schweikert and Ruben Gallego introduced the "NextGen Flight Path Review and Notification Act of 2016", which sought

to amend the FAA Modernization and Reform Act of 2012 to allow for the review of categorical exclusions previously granted for Next Gen flight path changes.

On this date, the President signed into law the National Defense Authorization Act for Fiscal Year 2017. The legislation, championed by Senators John McCain and Jeff Flake, included provisions requiring the FAA to specifically review their RNAV airspace changes at PHX in terms of environmental impact. As of May 2017, the FAA has not implemented or complied with the NDAA requirements.

#### **COALITION-BUILDING**

To help educate the airport industry and build support among airport partners, staff spoke at numerous national conferences on concerns with FAA NextGen and Community Involvement.

- UC Davis Noise Symposium (2/16)
- AAAE National Airport Economic Development (4/16)
- AAAE General Aviation Security Conference (8/16)
- AAAE/ ACI-NA Airport Noise Conference (10/16)

#### **GROUND NOISE**

Landrum & Brown (L&B) completed a ground noise study in 2016. The majority of noise complaints are related to noise produced from aircraft that overfly residential areas. Ground noise is any noise caused by aircraft operations on airport, not in flight, which can include aircraft taxiing, engine run-up test, and reverse thrusters upon landing type operations. The study was conducted to assist the City in understanding some complaints indicating increased ground noise since FAA RNAV implementation. The study concluded there was no measurable change in ground noise.

#### **TEMPORARY NOISE MONITORS**

Staff began developing a temporary noise monitoring program in 2016 by ordering additional equipment and integrating software. Once stood-up, the program will allow community members to request monitor deployment and gather data specific their household. Additional research on cost-recovery, liability and distribution at other airports is currently underway.

#### **LAND REUSE**

A key engagement effort has been the Land Reuse Strategy which was undertaken to help revitalize and put to productive use the hundreds of residential parcels that were voluntarily acquired because of their location in the high-noise exposure areas. More information about the Land Reuse Strategy can be found at [www.Skyharbor.com/landReuseStrategy](http://www.Skyharbor.com/landReuseStrategy).

### **AVIATION DAY AT PHOENIX-MESA GATEWAY AIRPORT**

Staff attended Aviation Day at Phoenix-Mesa Gateway Airport on March 12<sup>th</sup>. Staff interacted with community members interested in learning more about the FAA's new NextGen flight paths, RNAV, and other topics related to aviation and PHX. Airspace and Noise staff attended the City of Phoenix community budget hearings during the month of April to address concerns and questions regarding aircraft noise and the flight path changes.

### **PUBLIC MEETINGS**

Staff provided monthly flight path updates to the Phoenix City Council Downtown, Aviation and Redevelopment Subcommittee during the year. Staff has also made presentations at a variety of Village Planning Committees. Staff attended and participated in several District 4 and District 2 community meetings as well. Staff also provided updates and technical presentations to the Tempe Aviation Commission (TAVCO) during the year and on October 5<sup>th</sup>, held an interactive workshop on flightpath issues at the Tempe History Museum.

### **NEIGHBORHOOD GROUPS AND COMMUNITY ORGANIZATIONS**

In addition to the open houses, workshops and public meetings, staff also provided presentations to home owners' associations, neighborhood groups, and community associations in Phoenix. A flight path update to Willo Neighborhood leaders was given on June 15<sup>th</sup>. Staff shared information related to complaint data for the Willo neighborhood, as well as provided an update on the actions and activities the airport is taking to mitigate the impacts of the flight path changes. Staff also responded to Green Gables Community members' concerns regarding aircraft activity on December 15<sup>th</sup>.

### **ONLINE TOOLS AND RESOURCES**

Staff is continuing its ongoing effort to improve noise reporting methods that are simple and respond to the specific needs of community members. The department has launched a new noise complaint app for smartphones, and simplified the online webform to make submitting noise complaints easier.

### **FLIGHT PATH WEBSITE**

[Skyharbor.com/flightpaths](http://Skyharbor.com/flightpaths) offers updates, flight tracking and numerous options for reporting noise concerns. Staff continues to distribute updates to community members who can receive automated updates on the flight path issue. The direct email listserve provides updates to subscribers on new developments in the effort to bring relief to the community. There are currently **174** subscribers receiving flight path updates.

### SMARTPHONE NOISE COMPLAINT APP

The launch of the smartphone app on February 10, 2016 allowed 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 Webform, Hotline, PublicVue Flight Tracker or Smartphone App).

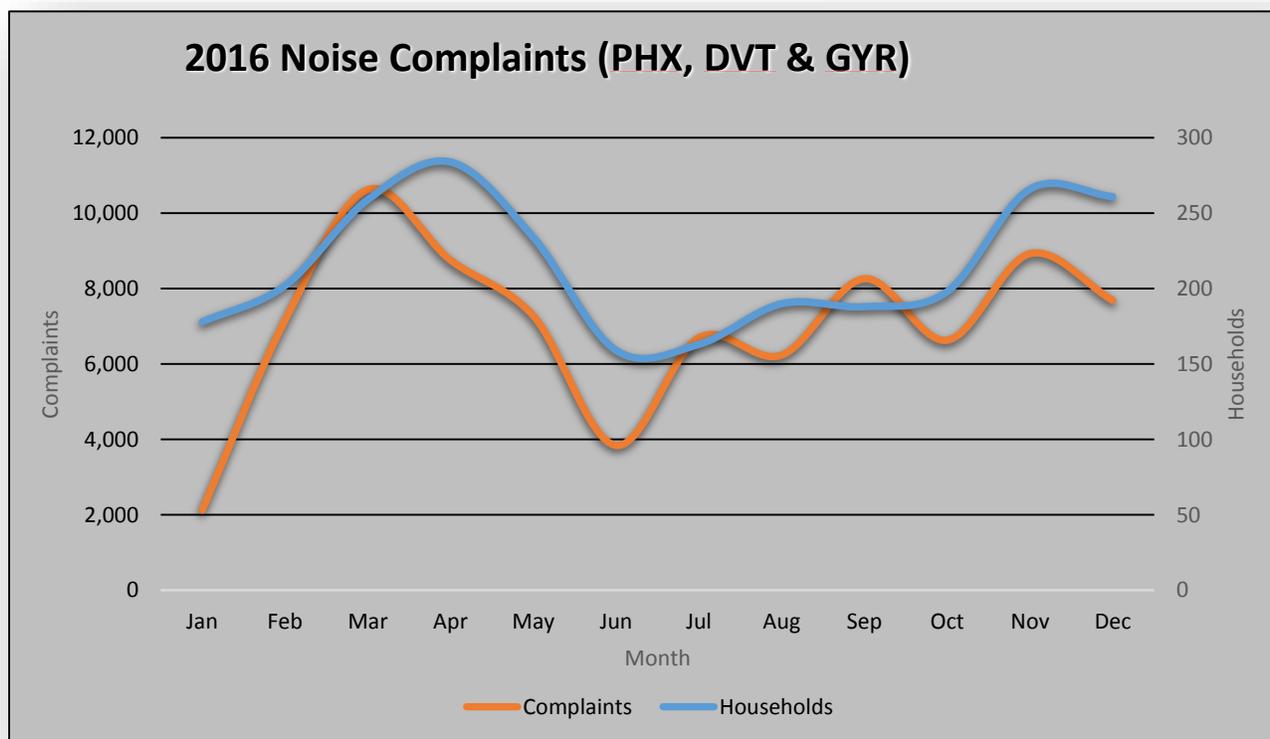
The image displays five sequential screenshots of the 'Noise Comment' smartphone app, illustrating the four-step submission process:

- STEP 1 OF 4: Lets Get Started** - User enters contact information (First Name: Bob, Last Name: Brown, Address, Address Line 2, City, State: Arizona, ZIP, Phone). A 'Next >' button is at the bottom.
- STEP 2 OF 4: When did you hear the aircraft?** - User selects the time of the incident (Right Now, Previously, Other (General Comment)). Date and time are shown (Wed, Jan 16, 2016, 08:15 PM). A 'Next >' button is at the bottom.
- STEP 3 OF 4: Your concerns?** - User selects the airport (PHX Sky Harbor, DVT Deer Valley, GYR Goodyear, Other) and the aircraft type (Aircraft: Select Aircraft Type). A 'Next >' button is at the bottom.
- STEP 4 OF 4: Comments?** - User provides details (Type of Comment: Arrival, Provide Details: Enter Comment Here) and indicates if a response is requested (Response Requested: X NO). A 'Submit' button is at the bottom.
- Success!** - Confirmation screen with a checkmark icon, the text 'Success!', and a message: 'Thank you for filing your comment with the City of Phoenix Aviation Department.' A 'CREATE A NEW COMMENT' link is at the bottom.

## 2016 DATA SUMMARY

In 2016, **81,974** total complaints regarding aircraft noise were made. There were 81,340 complaints from 755 households regarding PHX operations; 619 complaints from 112 households regarding DVT operations; and 15 complaints from 9 households regarding GYR operations.

- PHX handled 440,643 operations in 2016, compared to 440,411 operations in 2015, representing a 0.05% increase
- DVT handled 370,034 operations in 2016, compared to 369,759 operations in 2015, representing a 0.07% increase
- GYR handled 123,334 operations in 2016, compared to 111,330 operations in 2015, representing a 10.8% increase



### NOISE ABATEMENT PROCEDURES

FAA is required to generally 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 2016, PHX operated in west flow 50.3% of the year and 49.7% in east flow.**

The 4 DME procedure is designed to keep jet aircraft departing PHX to the east over the Salt River area and minimize noise exposure to residential areas in Tempe. All jet aircraft departing from PHX to the east are directed to fly generally along the Salt River for 5 miles before turning.. **In 2016, compliance with the 4 DME Departure Procedure was 99.71%, representing the highest compliance rate to date.**

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

*The Airport Noise and Capacity Act of 1990 (ANCA), provided many important aircraft noise policies and regulations important to community and airport compatibility. However, ANCA made clear what had been policy by way of caselaw, that airport operators (like the City of Phoenix) have no presumed legal authority to regulate or restrict aircraft access to the airport to reduce noise impacts.*

## *Phoenix Sky Harbor International Summary*

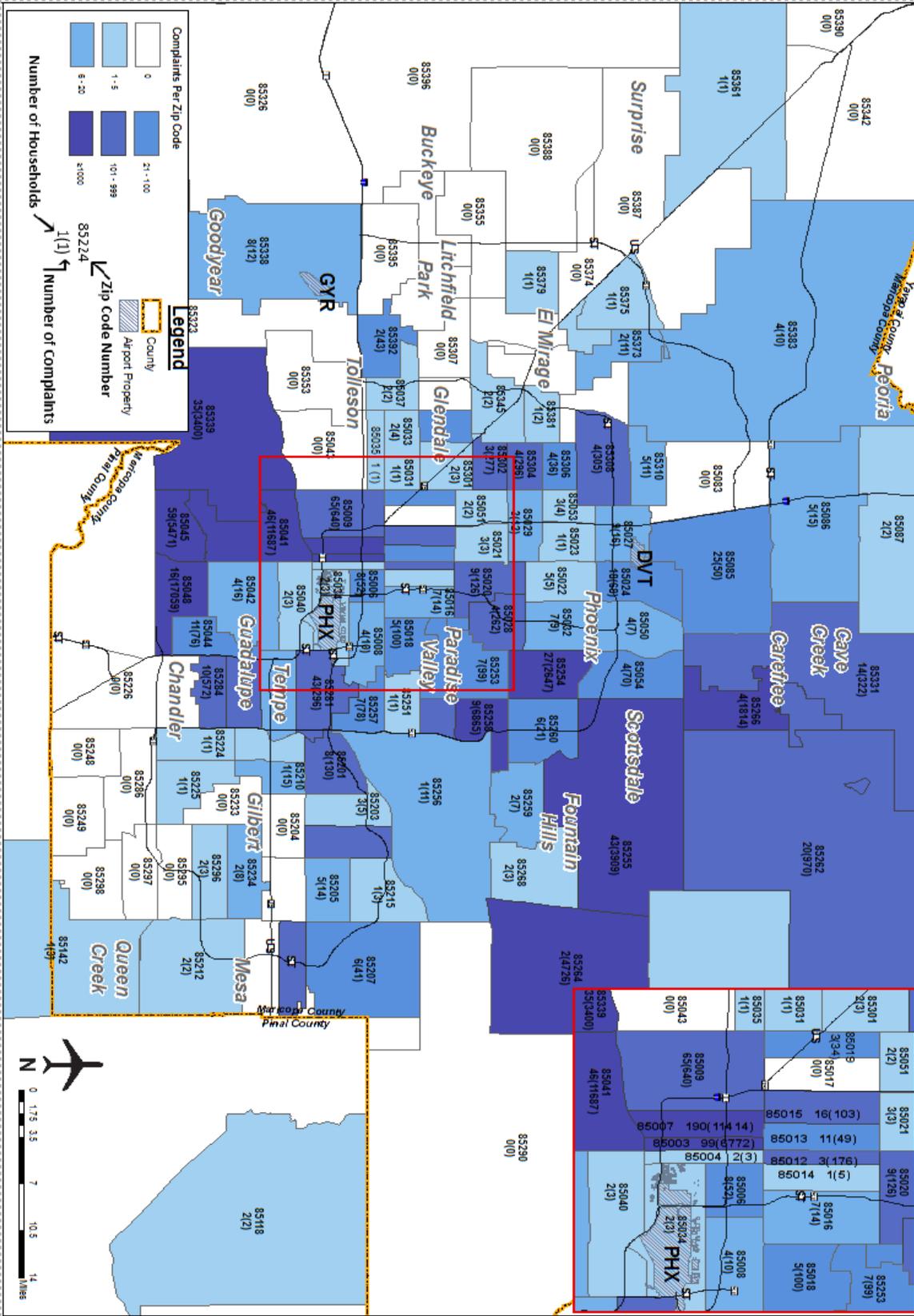
### **Annual Noise Complaints by PHX Jurisdiction**

City	2011		2012		2013		2014		2015		2016	
	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints
Anthem	-	-	-	-	-	-	-	-	-	-	2	2
Apache Junction	-	-	-	-	-	-	-	-	2	3	-	-
Avondale	-	-	-	-	-	-	-	-	-	-	2	43
Carefree	-	-	-	-	-	-	-	-	2	2	2	123
Cave Creek	-	-	-	-	-	-	3	3	34	473	14	322
Chandler	-	-	-	-	-	-	6	8	6	29	2	2
Fort McDowell	1	2	-	-	-	-	-	-	2	43	2	4,726
Fountain Hills	-	-	1	1	-	-	-	-	3	6	2	3
Gilbert	-	-	-	-	1	3	-	-	5	7	4	11
Glendale	1	3	-	-	-	-	11	27	56	432	26	2,269
Gold Canyon	-	-	-	-	-	-	-	-	-	-	2	2
Goodyear	1	1	-	-	-	-	1	1	3	3	7	12
Mesa	9	86	10	67	13	158	25	146	60	1,304	13	715
New River	-	-	-	-	-	-	1	1	4	38	4	14
Out of State	-	-	-	-	-	-	2	2	1	1	-	-
Paradise Valley	-	-	-	-	-	-	1	1	10	42	7	99
Peoria	-	-	1	1	1	4	-	-	15	21	5	12
Phoenix	20	22	13	16	16	22	545	2,522	1,025	11,889	550	57,893
Queen Creek	-	-	-	-	-	-	-	-	25	37	1	3
Rio Verde	-	-	-	-	-	-	-	-	-	-	1	1
Scottsdale	4	5	4	7	3	7	37	261	262	9,370	121	16,842
Sun City	-	-	-	-	-	-	-	-	4	4	2	11
Sun City West	-	-	-	-	-	-	2	3	1	2	1	1
Surprise	-	-	-	-	-	-	1	1	1	1	-	2
Tempe	9	10	9	10	10	26	22	29	70	533	79	1,158
Tolleson	-	-	-	-	-	-	-	-	3	3	-	-
Wittman	-	-	-	-	-	-	-	-	-	-	1	1
<b>Totals:</b>	<b>45</b>	<b>129</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>

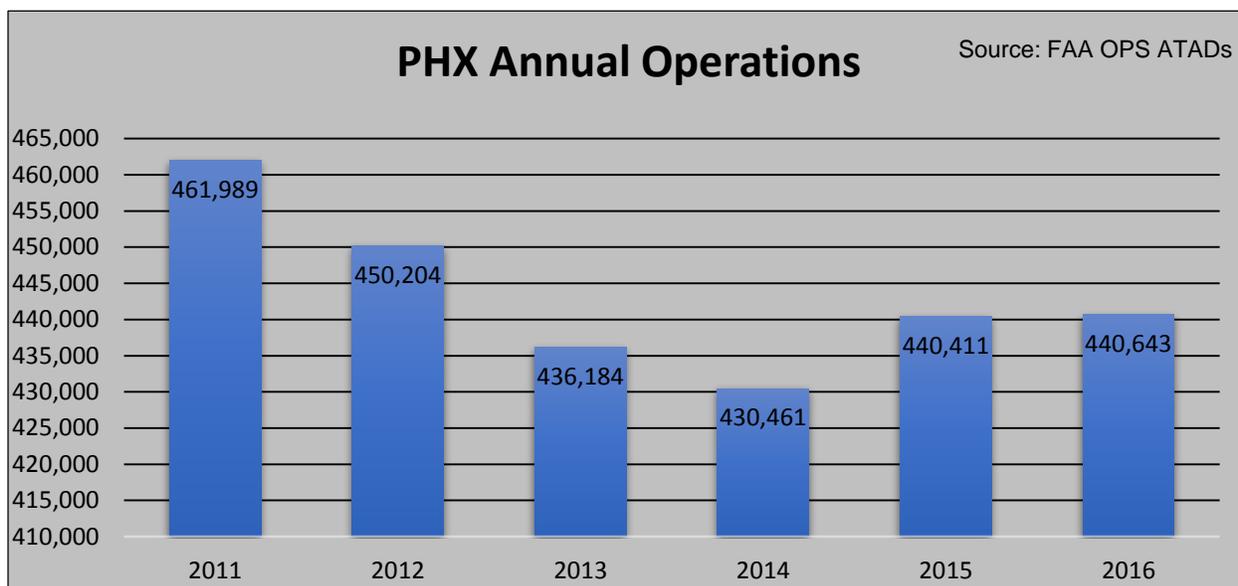
#### **Zip Code Complaint Statistics**

- The top three complaint reporting zip codes in descending order were 85048, 85041 and 85007.
- 16 households registered 17,059 noise complaints from zip code 85048.
- 11 zip codes reported one household submitting one noise complaint.

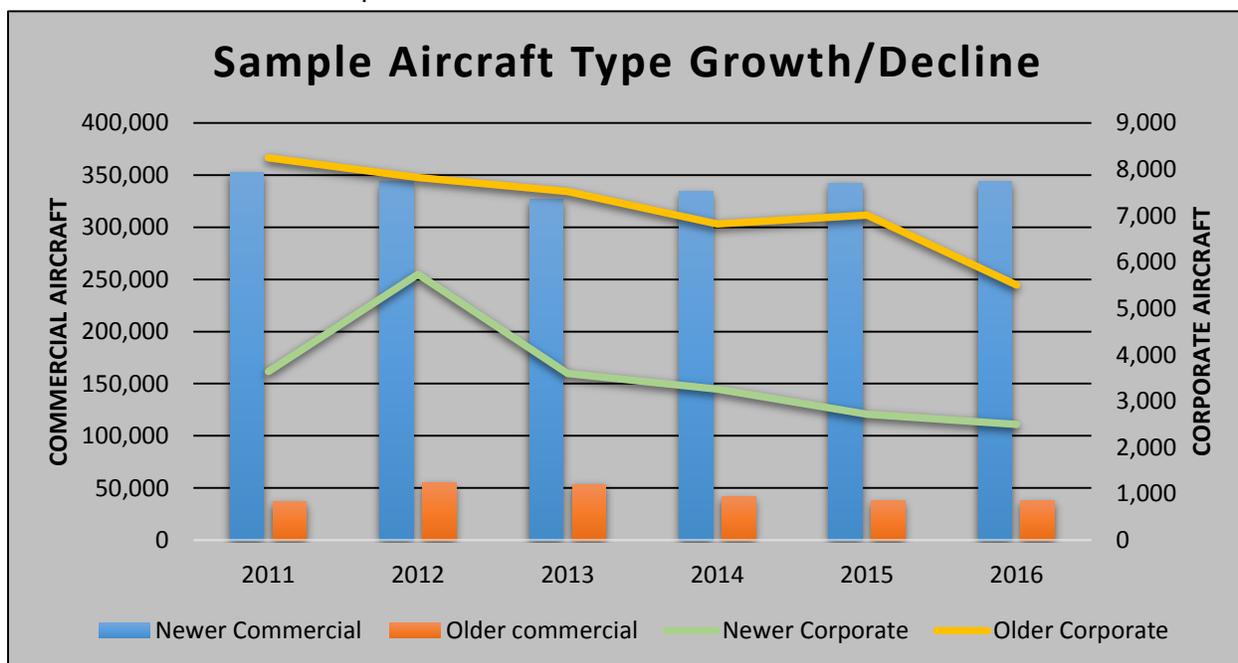
2016 NOISE COMPLAINTS BY ZIP CODE



Historical Annual Operations and Fleet Mix Comparisons

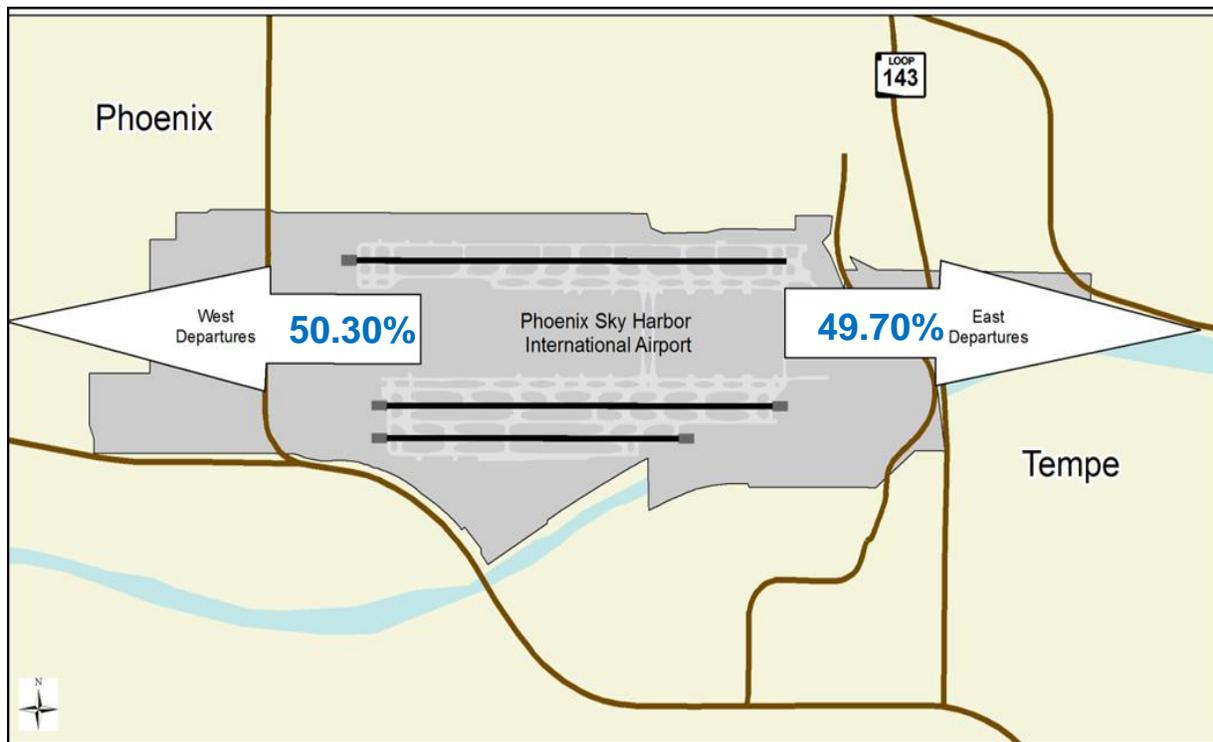


Operations at PHX increased 0.05% in 2016.

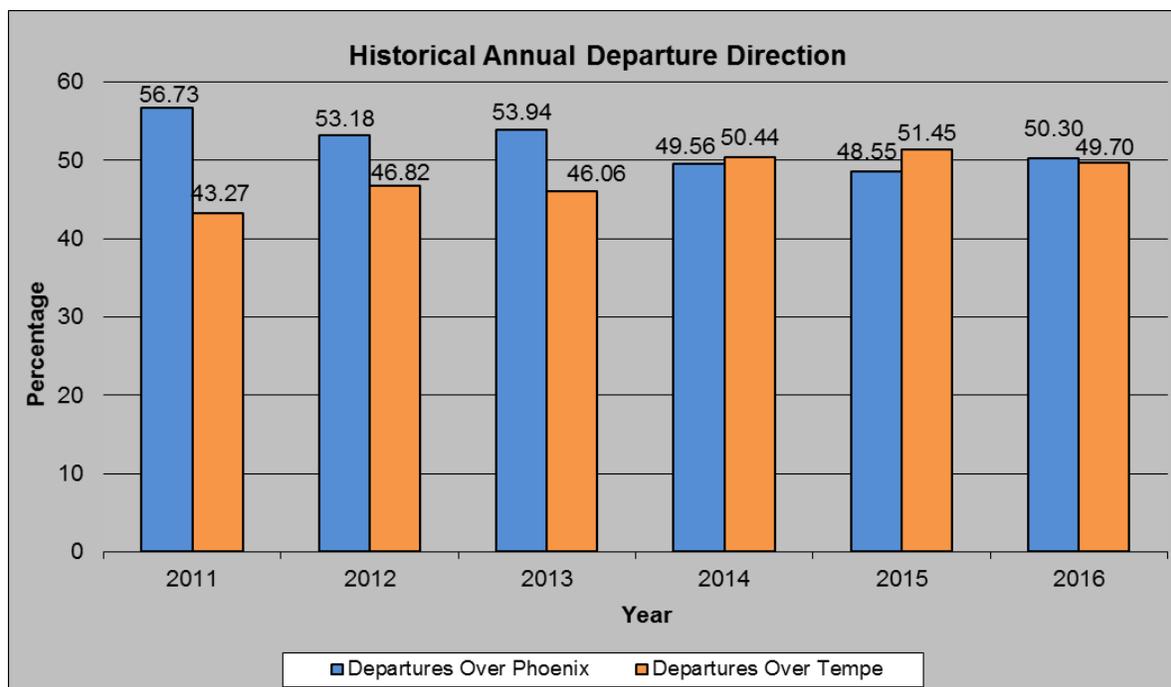


In 2016 the commercial service fleet mix saw an increase in the use of Bombardier CRJ700/CRJ900 and Boeing 737 operations. The number of newer commercial jet operations continued its upward trend.

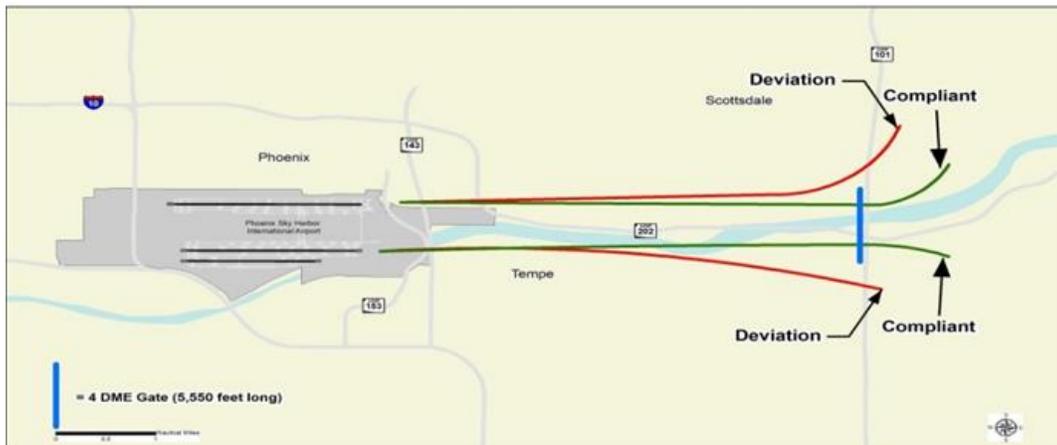
### 2016 PHX DEPARTURE DIRECTION



Due to aircraft having to arrive/depart into the wind, runway use at PHX is generally predictable with consistent winds. At PHX winds generally flow east to west in the morning (east flow) and, by early afternoon, switches from west to east (west flow). Runway equalization helps even the distribution of noise exposure in the surrounding communities.



### 2016 4 DME DEPARTURE PROCEDURE COMPLIANCE



### 2016 4 DME Compliance: 99.71%

### Annual Compliance Percentage

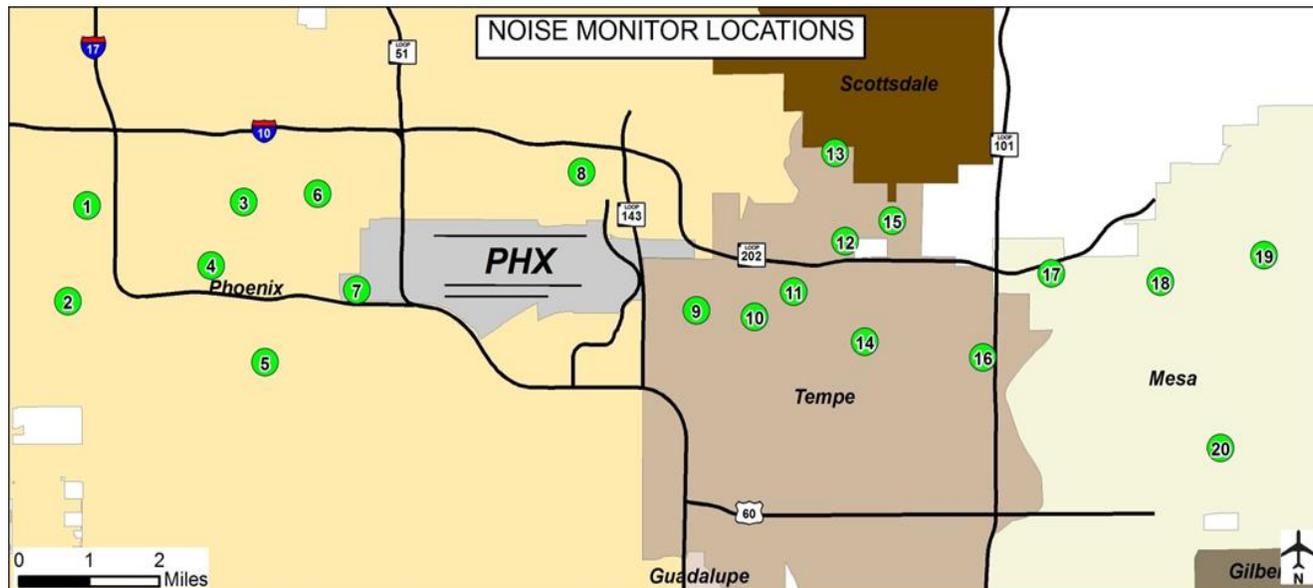
ACID	Airline Name	Deviations	Total East Departures	% Compliance
ACA	Air Canada	0	12	100.00%
ASP	Airsprint	0	4	100.00%
BAW	British Airways	0	79	100.00%
HAL	Hawaiian Airlines	0	307	100.00%
JBU	JetBlue Airways	0	261	100.00%
RVQ	Reva Air	0	14	100.00%
SCX	Sun Country Airlines	0	224	100.00%
WJA	WestJet Airlines	0	754	100.00%
NKS	Spirit Airlines	1	671	99.85%
DAL	Delta Airlines	7	4,443	99.84%
AAL	American Airlines	59	30,774	99.81%
FDX	FedEx Airlines	3	1,188	99.75%
ASH	Mesa Airlines	24	9,108	99.74%
SKW	SkyWest Airlines	21	7,485	99.72%
ROU	Air Canada Rouge	1	343	99.71%
FFT	Frontier Airlines	4	1,323	99.70%
GTI	Atlas Air	1	320	99.69%
UAL	United Airlines	14	4,040	99.65%
SWA	Southwest Airlines	109	28,382	99.62%
ASA	Alaska Airlines	7	1,293	99.46%
UPS	UPS Airlines	10	905	98.90%
ABX	Airborne Express	1	78	98.72%
VOI	Volaris	1	75	98.67%
ATN	Air Transport Intl.	3	208	98.56%

2011	2012	2013	2014	2015	2016
98.25%	97.08%	97.69%	98.47%	99.34%	99.71%

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>266</b>	<b>92,291</b>	<b>99.71%</b>
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### 2016 NOISE MONITORING SITE MEASUREMENTS



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.

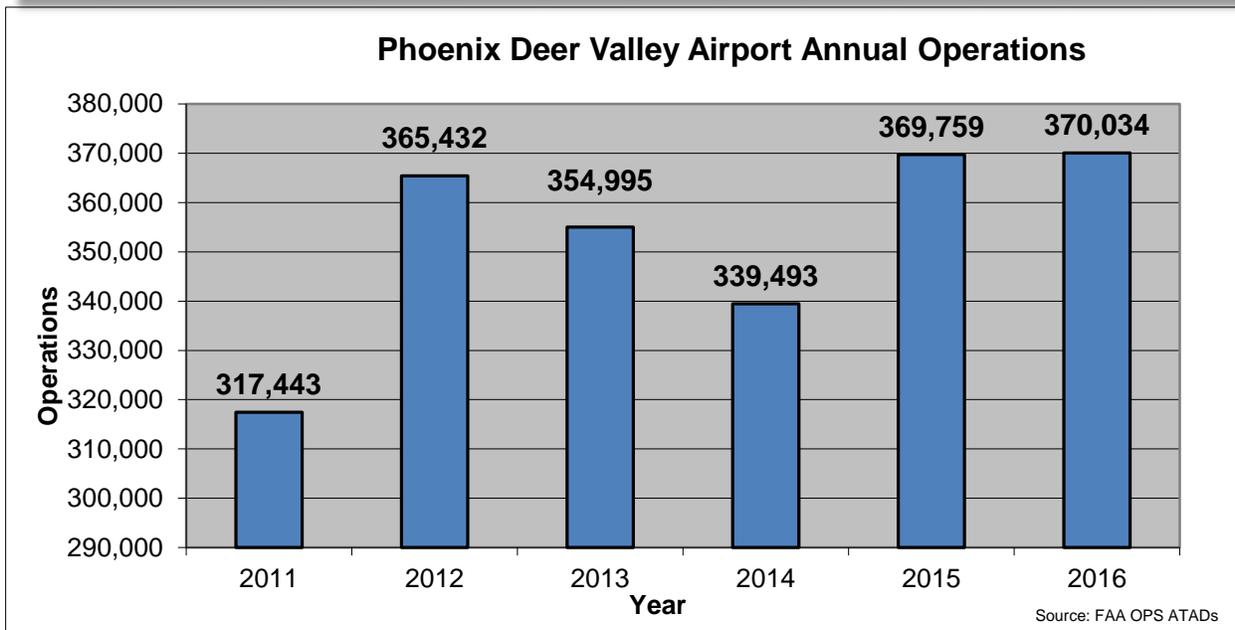
\*In 2013 Noise Monitoring Site (NMS) 17 was decommissioned to allow for the reconstruction of the Chicago Cubs Spring Training Facility in Mesa. Staff anticipates the reinstallation of the site to occur in the spring/summer of 2017.

Noise Monitoring Site	2011	2012	2013	2014	2015	2016
NMS01	50.3	49.6	50.3	50.3	48.3	47.7
NMS02	55.0	55.6	54.7	60.1	45.9	53.8
NMS03	53.3	52.1	53.2	53.6	54.3	55.4
NMS04	59.3	59.1	59.0	58.6	58.6	59.0
NMS05	55.3	55.1	53.8	54.7	55.9	57.2
NMS06	46.4	46.6	37.3	47.0	47.8	46.1
NMS07	67.6	67.4	66.7	67.4	66.9	67.9
NMS08	47.2	45.3	44.6	47.0	44.3	38.4
NMS09	63.7	61.7	63.0	62.0	62.3	62.3
NMS10	57.7	56.8	53.4	54.1	55.5	53.7
NMS11	64.5	64.1	61.3	63.1	63.5	63.8
NMS12	61.1	60.9	60.4	61.5	60.2	61.2
NMS13	42.1	41.0	40.2	38.5	38.1	38.5
NMS14	44.7	44.4	44.2	40.4	42.9	41.4
NMS15	55.3	54.7	55.4	54.9	55.0	53.8
NMS16	42.2	41.9	41.7	40.5	42.0	42.9
NMS17	54.3	54.1	*	*	*	*
NMS18	49.9	49.2	48.3	48.1	48.3	49.0
NMS19	46.5	45.9	46.0	45.8	46.1	46.4
NMS20	43.2	44.3	43.4	45.3	45.4	44.2

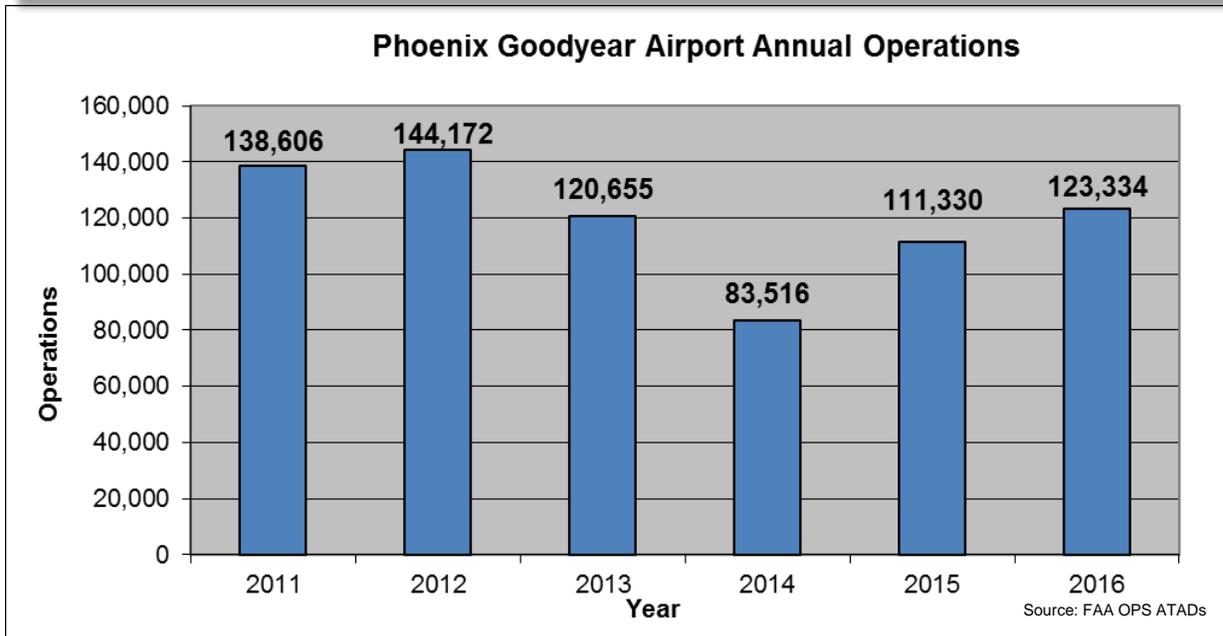
### DVT & GYR ANNUAL OPERATIONS

Annual operations at DVT and GYR remained high in 2016 due to an increase in flight school operations.

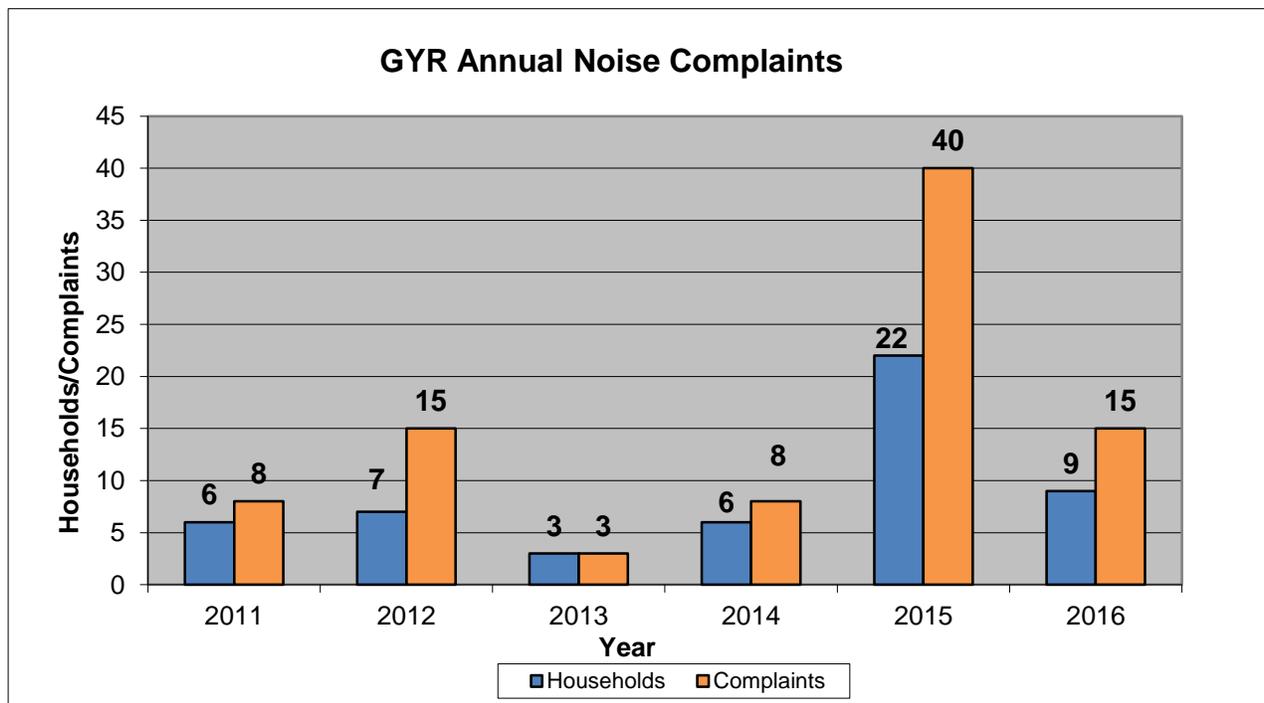
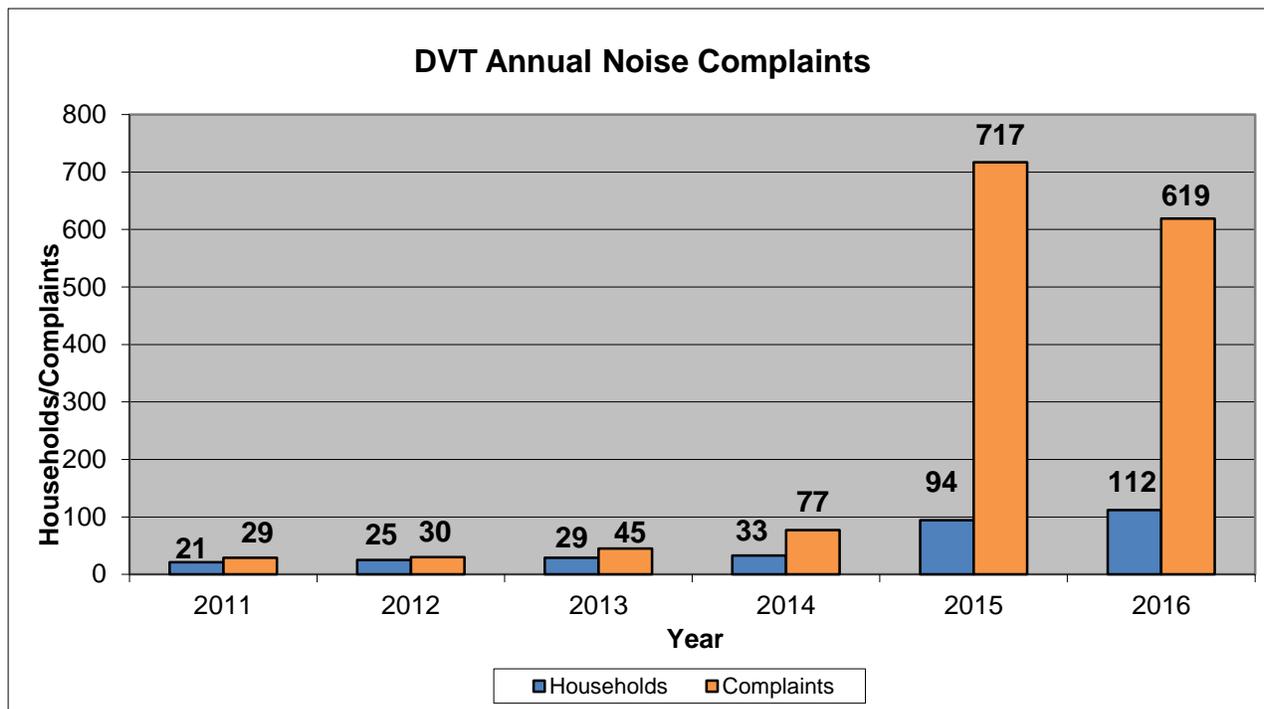
Phoenix Deer Valley Airport 2016 Monthly Operations													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
DVT	31,557	29,545	33,794	33,514	31,682	26,730	27,664	25,397	32,570	33,506	35,310	28,765	<b>370,034</b>



Phoenix Goodyear Airport 2016 Monthly Operations													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
GYR	10,199	9,969	11,602	9,748	10,415	10,408	7,624	8,131	9,790	12,508	12,675	10,265	<b>123,334</b>



### DVT & GYR ANNUAL NOISE COMPLAINTS



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Complaint Webform:

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

Download the Plane Noise app:

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