

# ***PHX DVT GYR***

 CITY OF PHOENIX AVIATION DEPARTMENT

## **Monthly Noise Report**

**December 2016**

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# Overview

The City of Phoenix owns and operates the Phoenix Airport System which consists of Phoenix Sky Harbor International Airport (PHX), Deer Valley (DVT) and Goodyear (GYR) airports.

The Aviation Department's Airspace and Noise Section serves as the primary liaison between the community, airlines and the Federal Aviation Administration (FAA) with regard to aircraft overflight activity and noise concerns. While the authority to control aircraft in flight and on the ground lies exclusively with the FAA, the airlines control the number of flights and flight schedules. It is important to note that the Airport is prohibited by law from implementing any action that would interfere with or restrict aircraft in flight.

However, the Airport provides an important role with regard to facilitating discussions about aircraft noise; monitoring compliance with noise mitigation procedures; educating and advocating for the community. Airport staff collect aircraft noise monitoring and flight operations data in order to research, advise and assist the community with up-to-date information concerning aircraft noise exposure. Additionally, staff addresses noise concerns received from residents through either the noise hotline, the PlaneNoise Mobile App, the PublicVue flight tracker, or the electronic complaint form available on the Airport's webpage.

This report provides a summary of the data collected for the preceding month. Each component of the report is intended to show observable trends in operation counts, flight direction, complaints, and adherence to noise abatement procedures.

## December 2016 Summary:

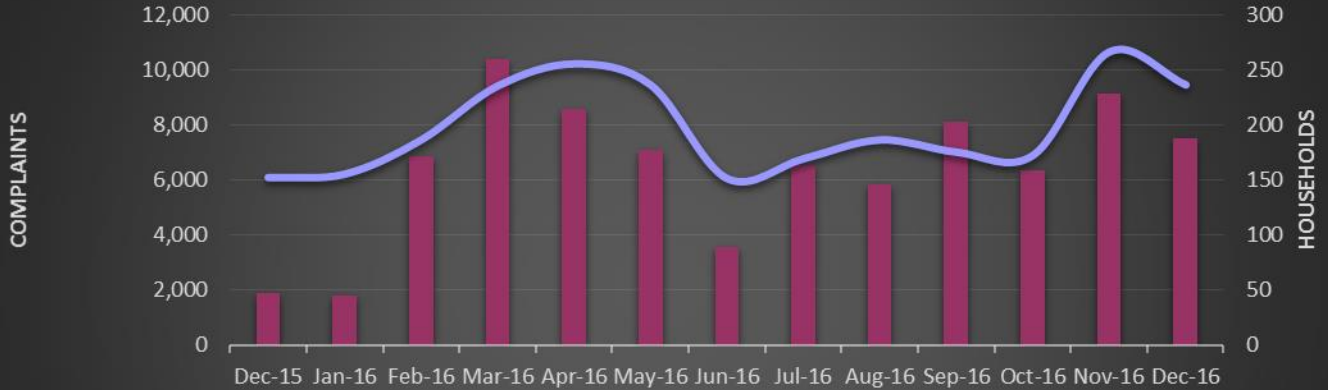
- For the month of December, 2016 the Airspace and Noise Section received **7,522** complaints from **262** households with regard to PHX, DVT, and GYR airports.
- PHX had **37,303** operations in December 2016. This is a **4.1% increase** from November 2016. Phoenix Deer Valley Airport (DVT) had **28,765** operations in December 2016. This is a **18.5% decrease** from November 2016. Phoenix Goodyear Airport (GYR) had **10,265** operations in December 2016. This is a **19.0% decrease** from November 2016.
- The 4 DME Compliance Rate for December 2016 was **99.36%**.
- PHX operated **45.53%** westerly and **54.47%** easterly in the month of December 2016.
- There were **33** "Early Turns" in the month of December 2016.
- Staff responded to **124** Community Response Requests in December 2016.
- Staff participated in **4** community outreach, land re-use and information meetings in December 2016.

# Noise Complaints

Many factors contribute to the number of complaints received each month and by how many people (households). Complaint totals vary due to factors ranging from one unusual flight event that generates multiple complaints from a large group of people, a bad weather day or change in the weather, to a new homeowner that did not notice the flight paths before they purchased their home.

## Complaint Statistics

### PHX Complaints & Households Nov 2016

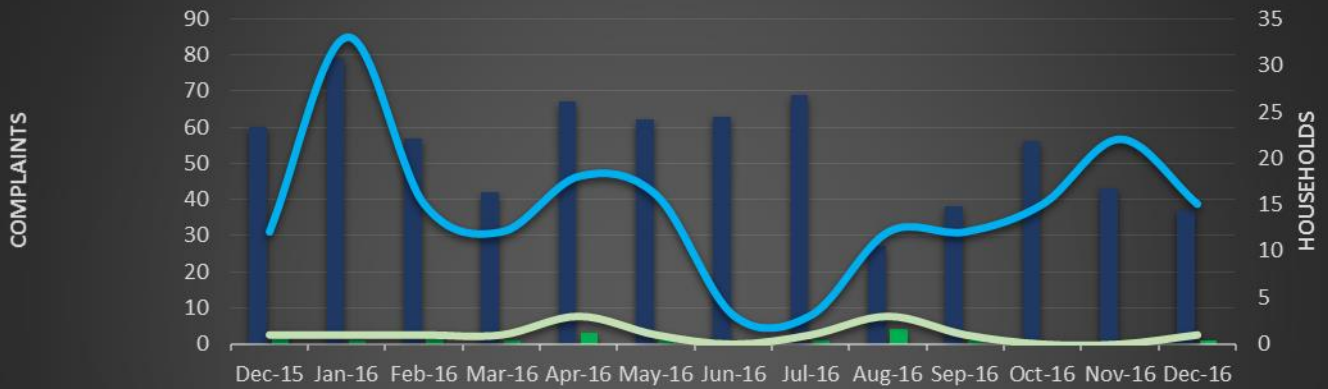


|                | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHX Complaints | 1,906  | 1,802  | 6,855  | 10,380 | 8,576  | 7,090  | 3,574  | 6,521  | 5,816  | 8,095  | 6,361  | 9,114  | 7,484  |
| PHX Households | 152    | 155    | 186    | 235    | 255    | 236    | 151    | 169    | 186    | 175    | 172    | 266    | 236    |

AXIS TITLE

PHX Complaints PHX Households

### DVT & GYR Complaints & Households Nov 2016

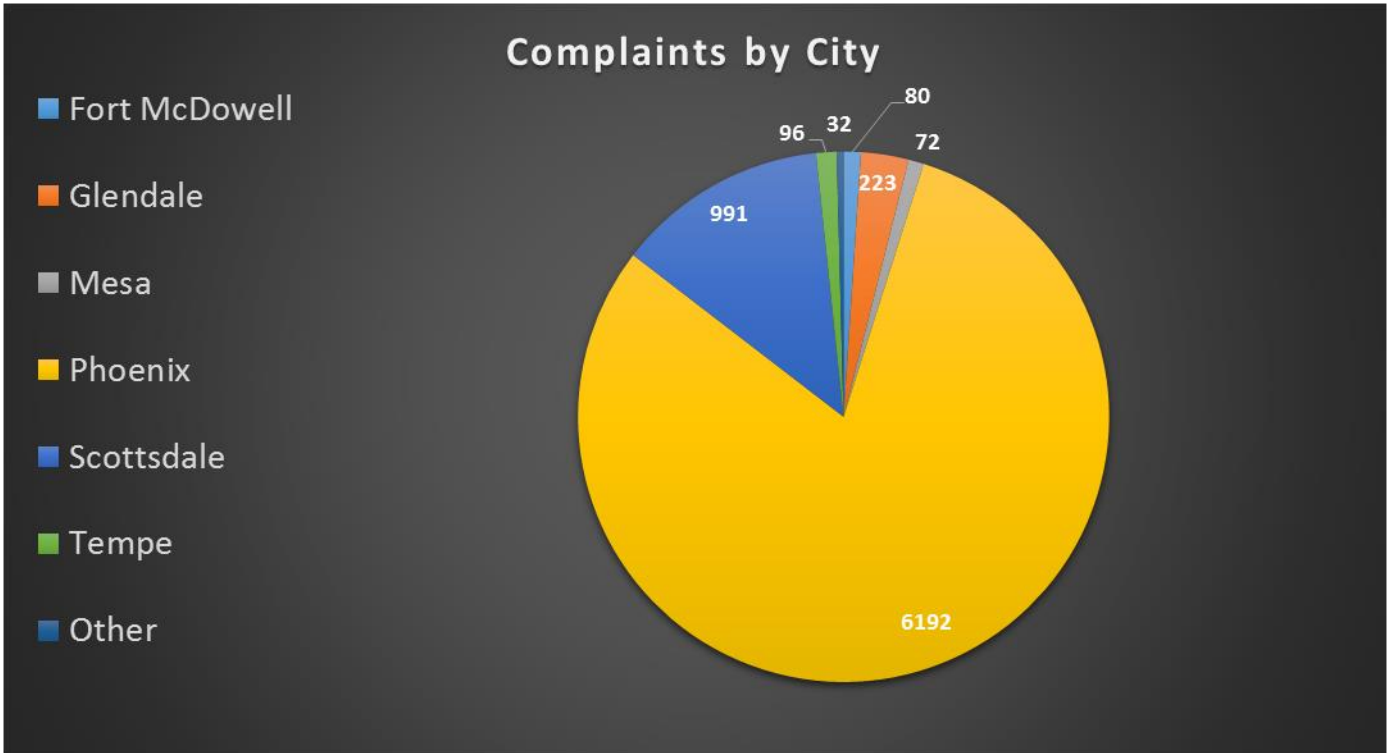


|                | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DVT Complaints | 60     | 79     | 57     | 42     | 67     | 62     | 63     | 69     | 27     | 38     | 56     | 43     | 37     |
| GYR Complaints | 3      | 1      | 2      | 1      | 3      | 1      | 0      | 1      | 4      | 1      | 0      | 0      | 1      |
| DVT Households | 12     | 33     | 15     | 12     | 18     | 16     | 3      | 3      | 12     | 12     | 15     | 22     | 15     |
| GYR Households | 1      | 1      | 1      | 1      | 3      | 1      | 0      | 1      | 3      | 1      | 0      | 0      | 1      |

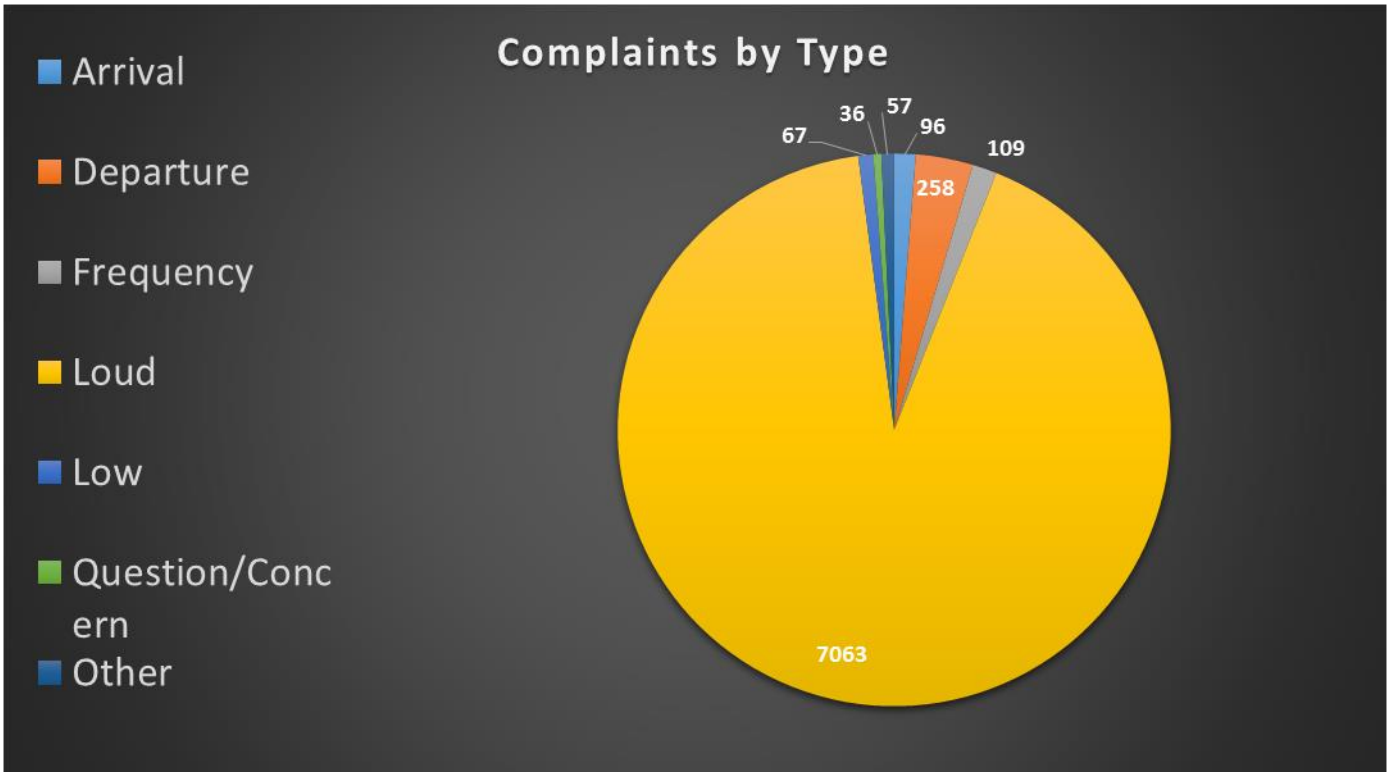
DVT Complaints GYR Complaints DVT Households GYR Households

# Noise Complaints

Varying regions of the metropolitan Phoenix area report noise concerns for aircraft arriving and/or departing Phoenix Sky Harbor (PHX), Deer Valley (DVT), and Goodyear (GYR) airports, and are reflected in the chart below:

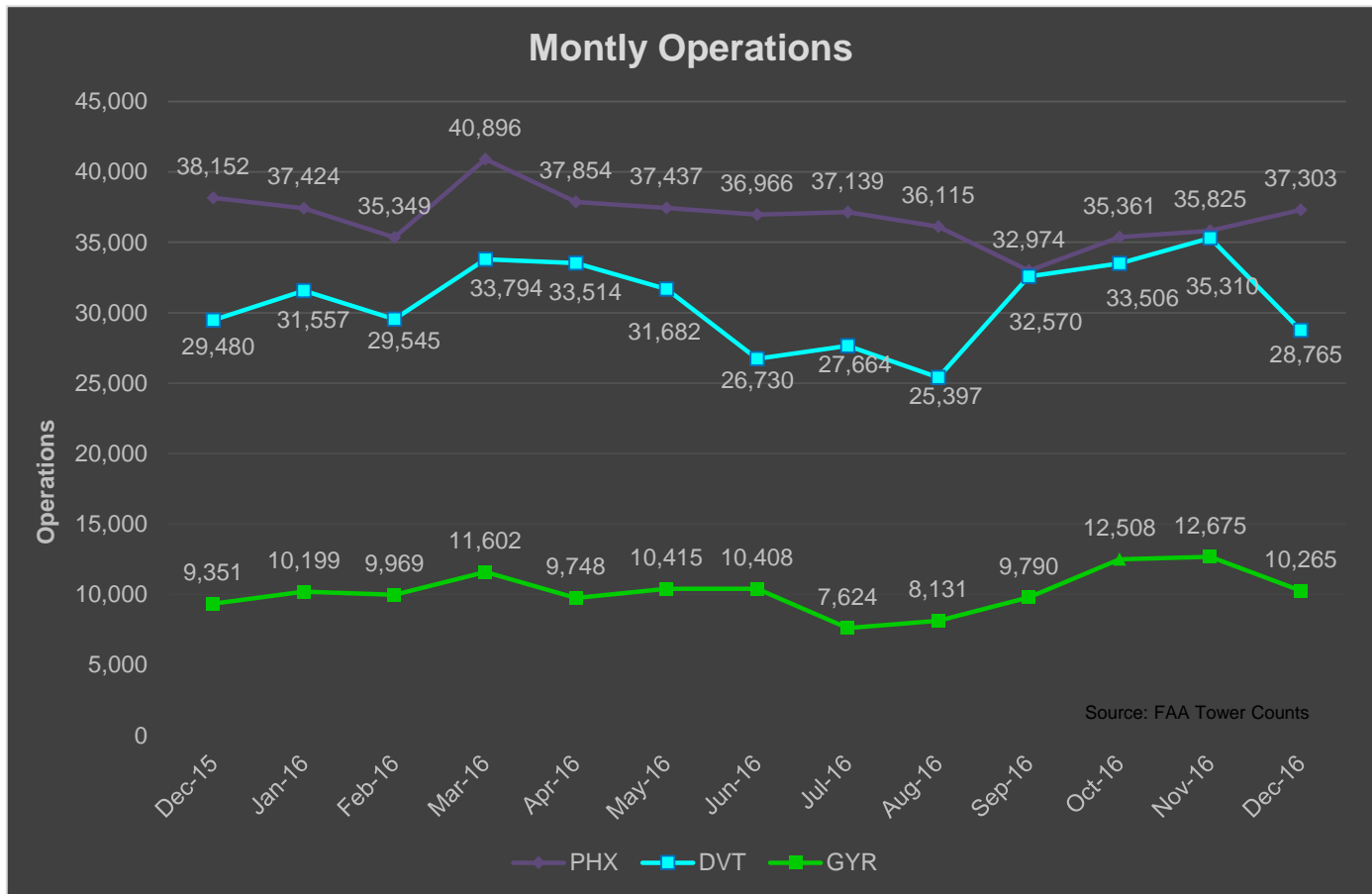


Each noise complaint submitted for PHX, DVT or GYR airport(s) can be categorized into one of the following types:



# Airport Operations

Aircraft operations generally fluctuate due to seasonal and passenger demand. The graphic below depicts operation totals at PHX, DVT and GYR. Examples of peak travel times are spring break, major sporting events, the end of the school year and winter holidays.

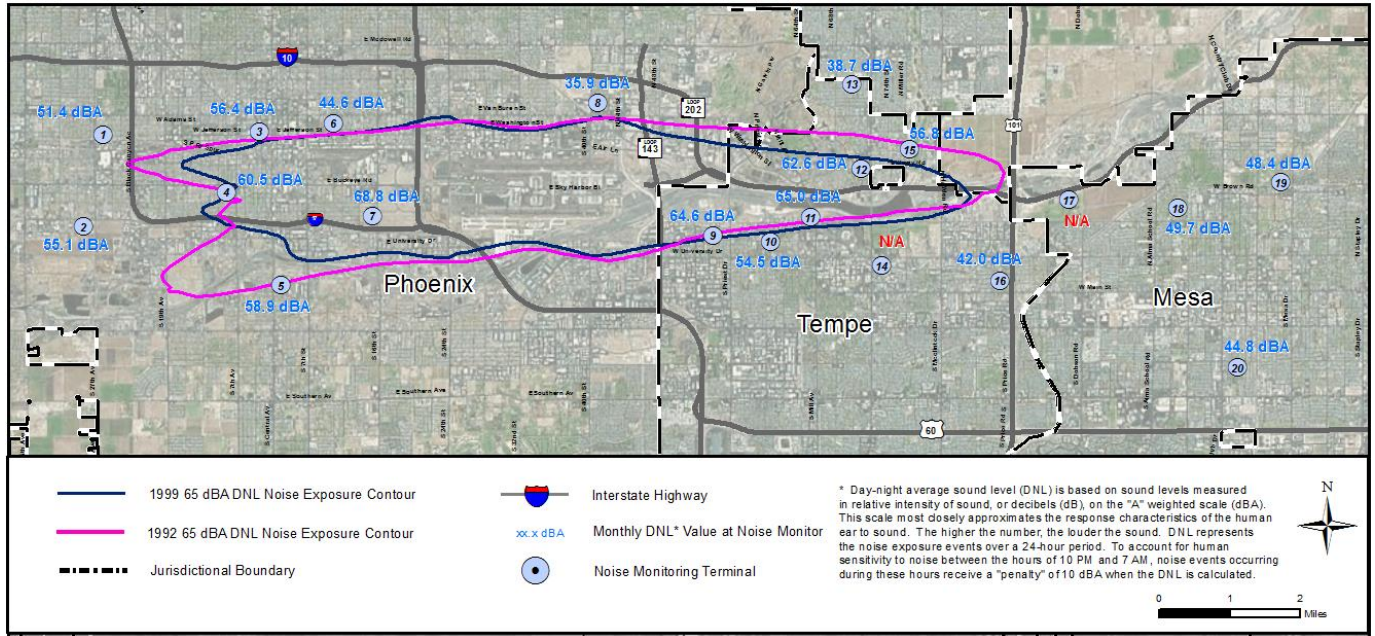


## Special Events and Irregular Operations

- There were no special events or irregular operations this month.

# Noise Monitoring Sites

PHX has 20 noise monitors in the communities surrounding the Airport. There are eight monitors located in Phoenix, eight in Tempe, and four in Mesa.



The noise monitors are located underneath the arrival and departure paths and in areas close to the Airport's noise contours. The monitors record aircraft noise events on a continual basis which then are compared with actual flight data from the FAA. Using the data provided, staff can determine exactly how loud aircraft operations were at a particular location. Staff also monitors changes in monthly and annual noise readings at each location. Noise levels are recorded using the day-night average sound level (DNL) recorded at each site.

| Noise Monitoring Site | LdnA | Change From Previous Month | Noise Monitoring Site | LdnA | Change From Previous Month |
|-----------------------|------|----------------------------|-----------------------|------|----------------------------|
| NMS01                 | 51.4 | 6.5                        | NMS11                 | 65.0 | 0.7                        |
| NMS02                 | 55.1 | 0.6                        | NMS12                 | 62.6 | 1.3                        |
| NMS03                 | 56.4 | 0.4                        | NMS13                 | 38.7 | 0.4                        |
| NMS04                 | 60.5 | 0.4                        | NMS14                 | N/A  | N/A                        |
| NMS05                 | 58.9 | 1.8                        | NMS15                 | 56.8 | 1.7                        |
| NMS06                 | 44.6 | -11.7                      | NMS16                 | 42.0 | -0.2                       |
| NMS07                 | 68.8 | -0.2                       | NMS17                 | N/A  | N/A                        |
| NMS08                 | 35.9 | -3.6                       | NMS18                 | 49.7 | 1.3                        |
| NMS09                 | 64.6 | 0.7                        | NMS19                 | 48.4 | 1.8                        |
| NMS10                 | 54.5 | -9.8                       | NMS20                 | 44.8 | 1.5                        |

**\*NMS14 & NMS17 were removed for construction & will be replaced**

# Noise Mitigation Procedures

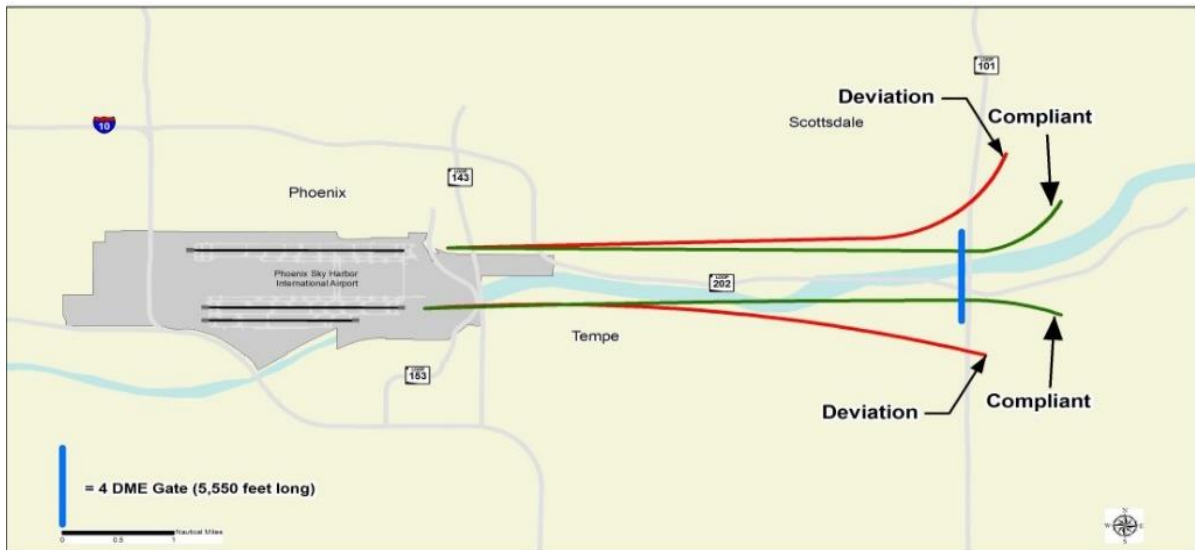
Phoenix Sky Harbor International Airport (PHX) is committed to minimizing noise exposure to surrounding communities from aircraft operations through a variety of efforts. Airport staff meets regularly with community groups, elected officials, appointed advisory boards, airline officials, aviation working 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. Working with the FAA, and the community, the Airport has implemented noise reduction measures in an effort to reduce the noise impacts on surrounding communities to the greatest extent possible.

Noise Mitigation Procedures may not be used at all times and are often impacted by a number of factors, including wind, weather, and other operational considerations. However, the Airport encourages maximum use of the procedures when conditions permit, and monitors and reports on compliance.

## 4 DME

DME means Distance Measuring Equipment, which is an invisible surface that exists just under 6 miles east of the Airport. It is 5,550 feet long and runs 1,000 feet north of the Runway 8/26 to 1,000 feet south of the Runway 7L/25R.

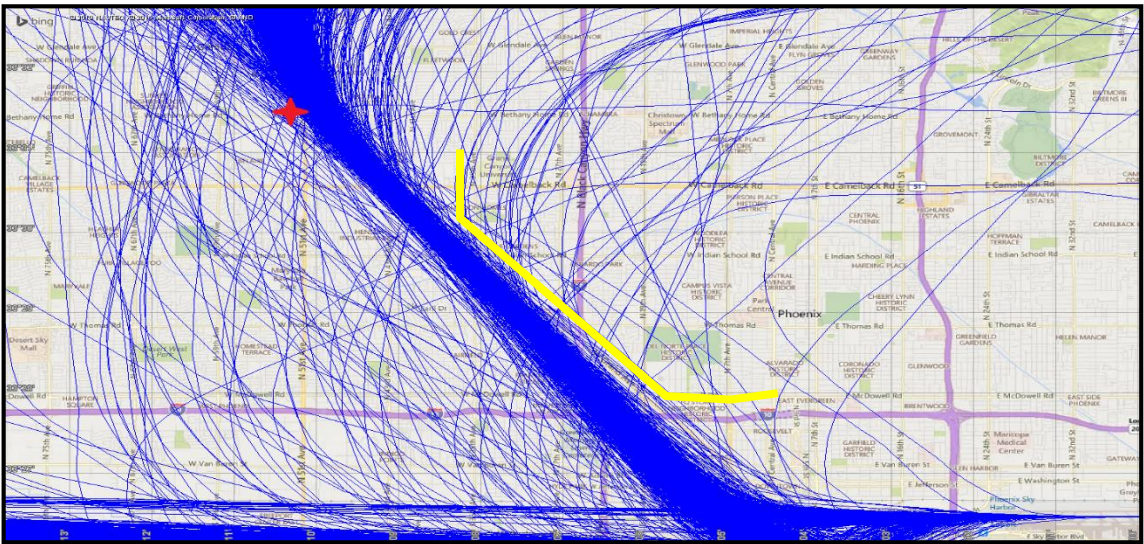
The 4 DME departure procedure directs jet aircraft departing PHX to the east to fly generally along the Salt River for approximately 5 miles before turning. The 4 DME procedure is designed to keep aircraft over the Salt River area and minimize noise exposure to residential areas. Staff monitors compliance with this procedure and communicates with aircraft operators when procedures are not followed.



# Noise Mitigation Procedures

## Early Turns

While a formal turning “gate” does not exist for west flow RNAV procedures, the Airport has informally established a gate for monitoring purposes; which generally follows Grand Avenue to the west of airport. Staff monitors the amount of jet aircraft that turn back to due north or east before going past the informal gate and publishes that data so that the community has a sense of aircraft flight paths that deviate from the RNAV corridor; which is consistent with the December 14, 2014 FAA instruction to PHX air traffic controllers to not issue early turns to aircraft unless doing so for safety or weather purposes. Staff continues to work with the FAA on defining Northwest route “early turn” criteria so it is representative of FAA and reflective of community issues.



## Ground Run-Ups

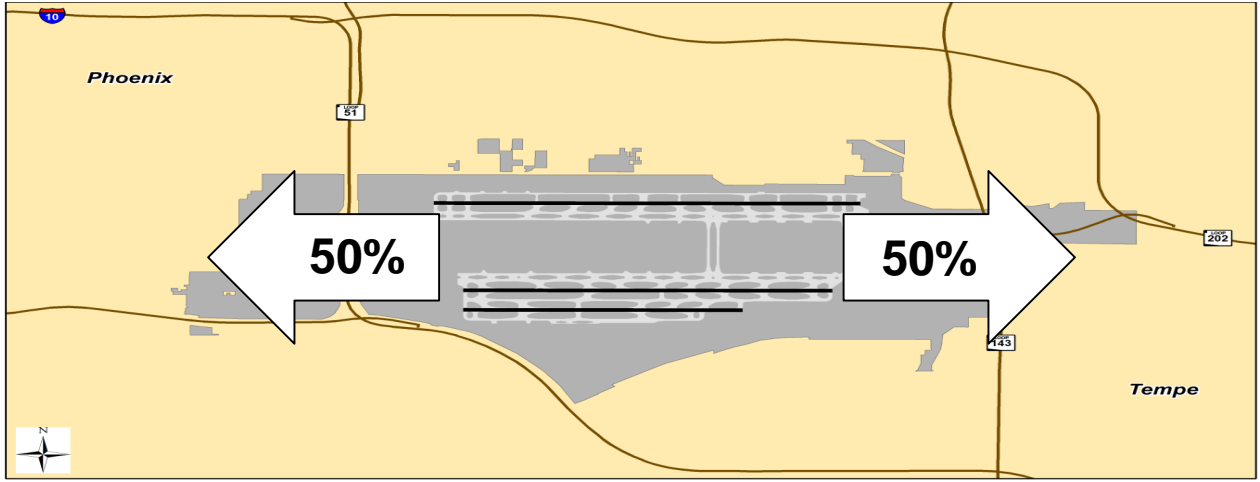
The Airport enforces the city ordinance regarding engine ground run-ups. The purpose of the ordinance is to ensure run-ups are conducted safely and minimize noise. Operators may conduct an engine run-up at high RPM only in designated areas, and are required to notify the Airport when a ground run-up is conducted. Engine run-ups are strictly prohibited between 11:00 pm and 5:00 am.



# Noise Mitigation Procedures

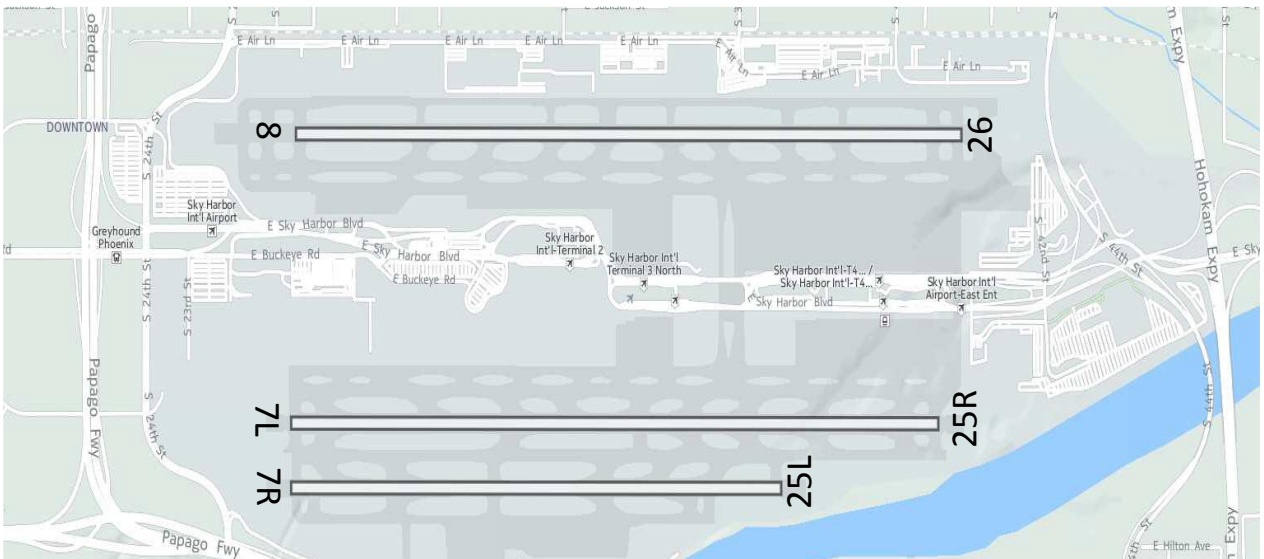
## Equalization

Phoenix Sky Harbor International Airport has a goal to equalize the amount of aircraft departures between the east and west over an annualized period. Because aircraft need to fly into the wind for added lift and land into the wind for added drag to slow down, there are times when weather can cause longer periods of flow in one direction versus the other. However, runway use at Phoenix Sky Harbor International Airport is generally predictable with consistent winds. At PHX, winds generally flow east to west at night, and by mid-morning, flow west to east.



## Preferential Runway Use

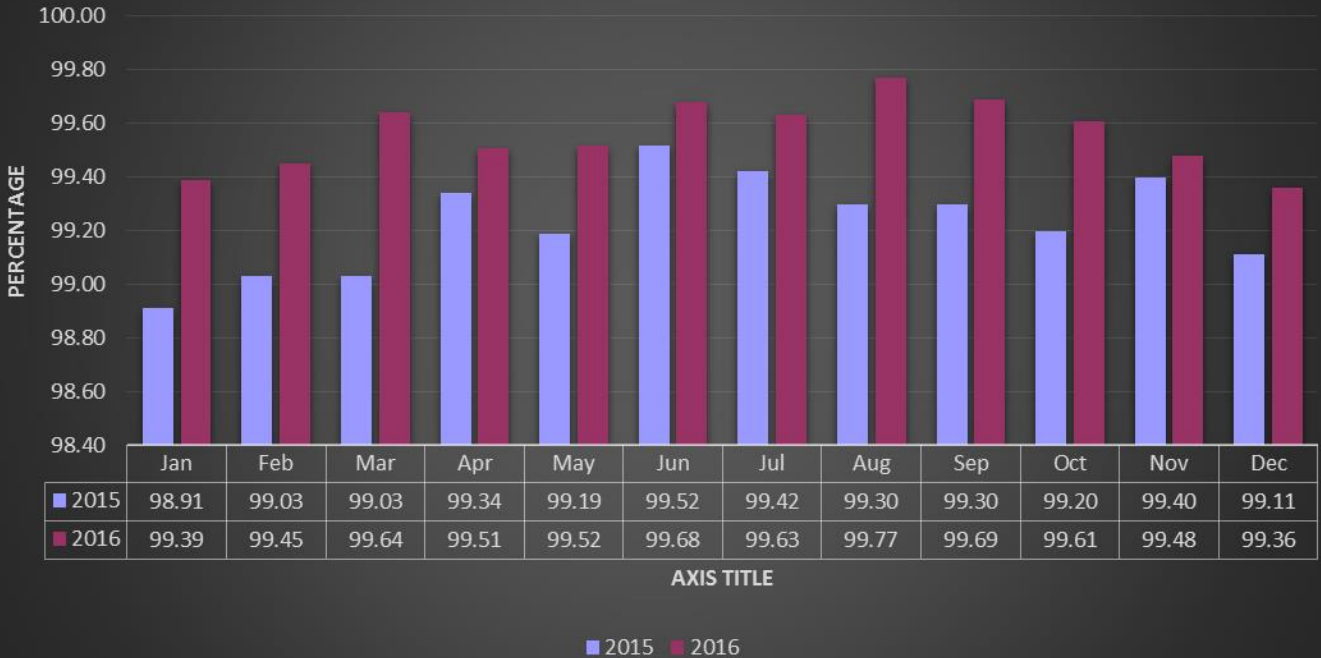
The Airport has implemented a Preferential Runway Use Program where arrivals land on the north runway (8/26) and south runway (7R/25L), and departures take off on the center runway (7L/25R). This allows departures to be further away from the nearest communities to the north and south of the airport.



# 4DME Compliance

December 2016 4DME compliance rate = 99.36%

## 4 DME Procedure Monthly Compliance



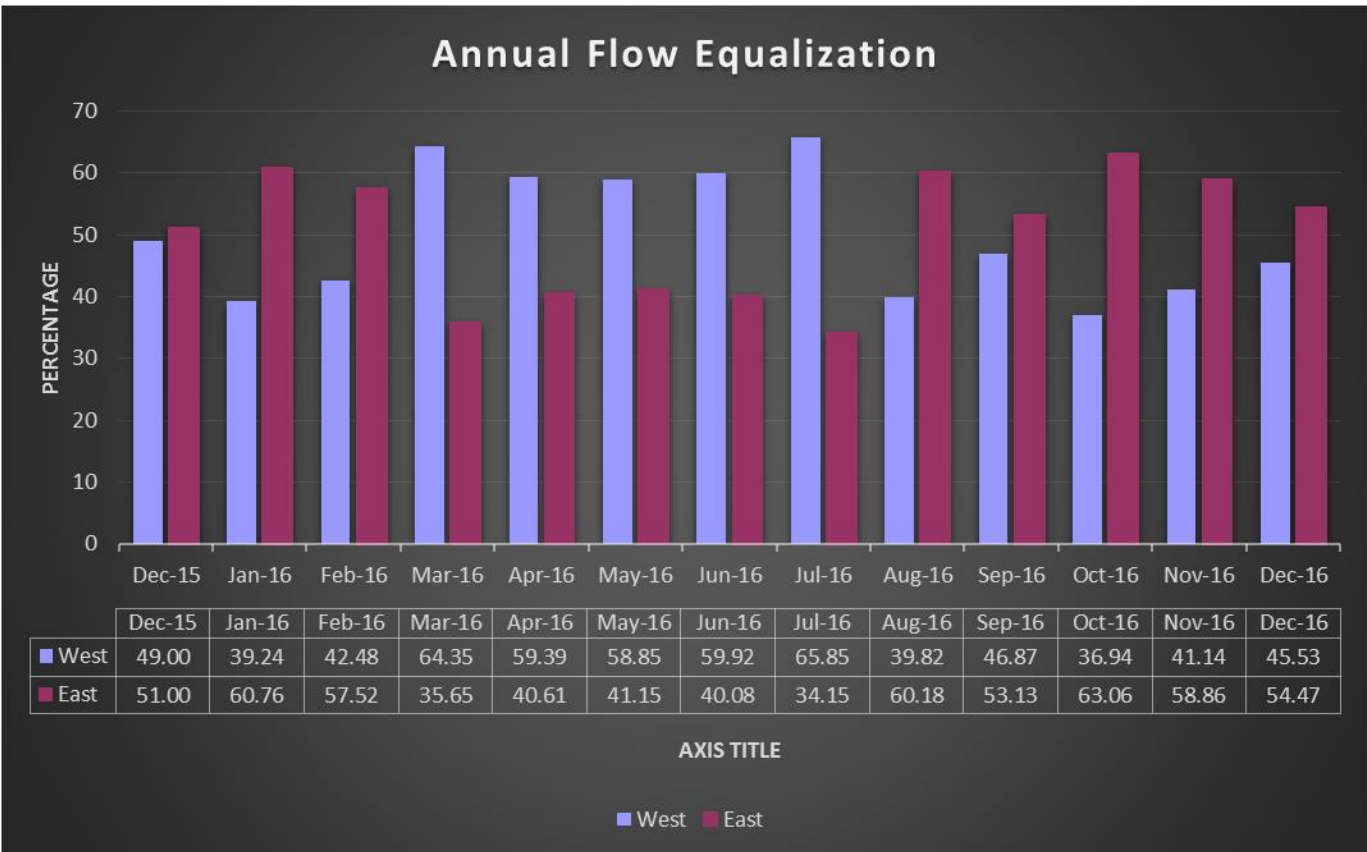
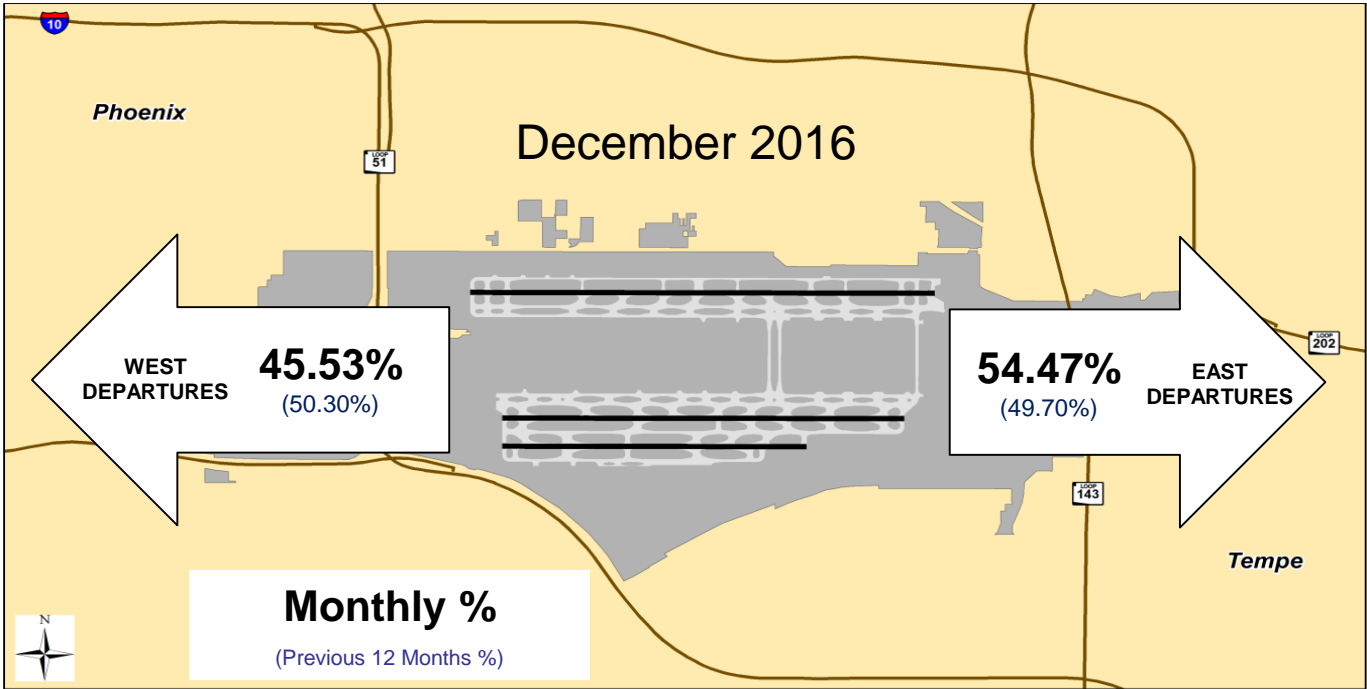
## December 2016 4 DME Deviations

Operators with 75 or more jet flights to the east shown

| Airline Name       | Deviations | Total Departures to the East | % Compliance |
|--------------------|------------|------------------------------|--------------|
| American Airlines  | 12         | 2,849                        | 99.58        |
| Southwest Airlines | 11         | 2,661                        | 99.59        |
| Mesa Airlines      | 1          | 733                          | 99.86        |
| SkyWest Airlines   | 6          | 676                          | 99.11        |
| Delta Airlines     | 2          | 420                          | 99.52        |
| United Airlines    | 2          | 357                          | 99.44        |
| Frontier Airlines  | 0          | 166                          | 100.00       |
| FedEx Airlines     | 0          | 160                          | 100.00       |
| General Aviation   | 16         | 160                          | 90.00        |
| UPS Airlines       | 1          | 155                          | 99.35        |
| Alaska Airlines    | 0          | 127                          | 100.00       |
| WestJet Airlines   | 0          | 116                          | 100.00       |

# Equalization

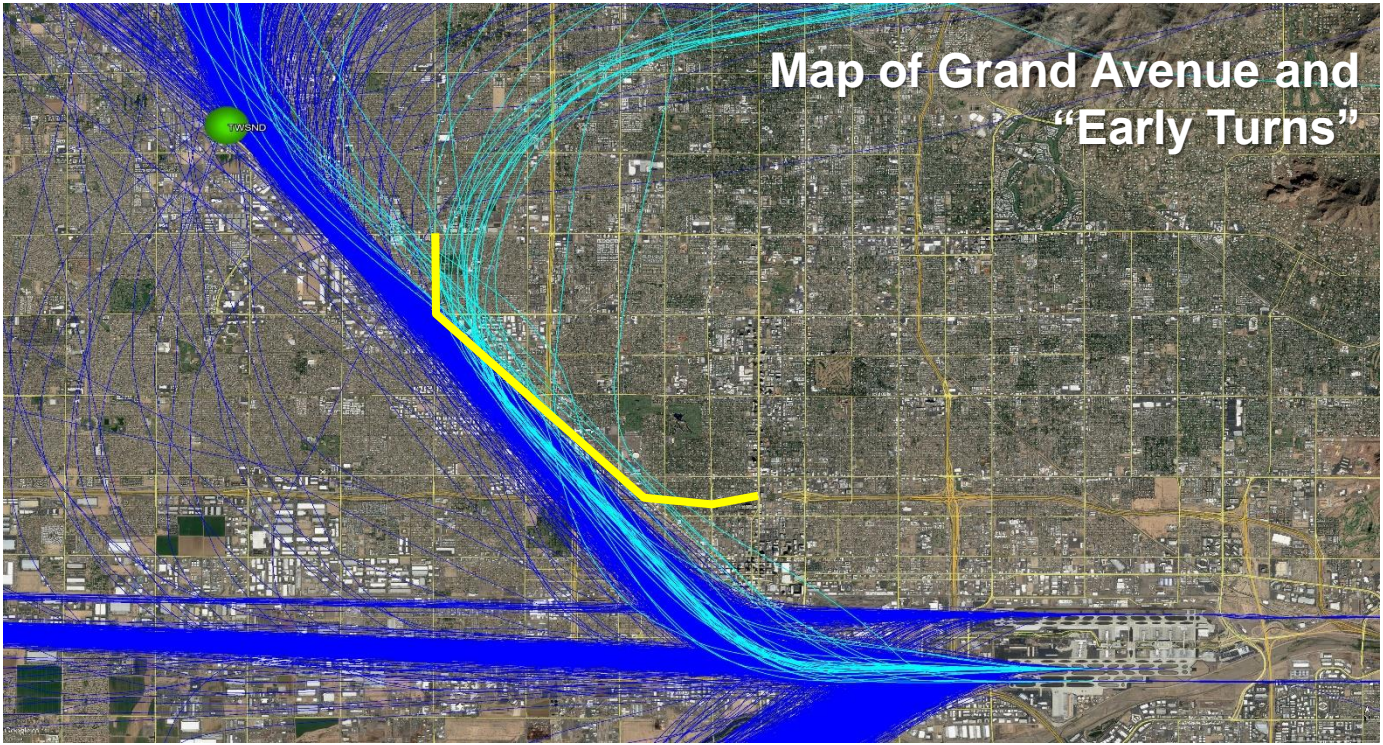
Historic trends show the FAA typically operates heavier to the west during the summer months and to the east during the winter months. Although there will be times during those trends where the flow goes against the seasonal norms, equalization is achieved between January and December of each year.



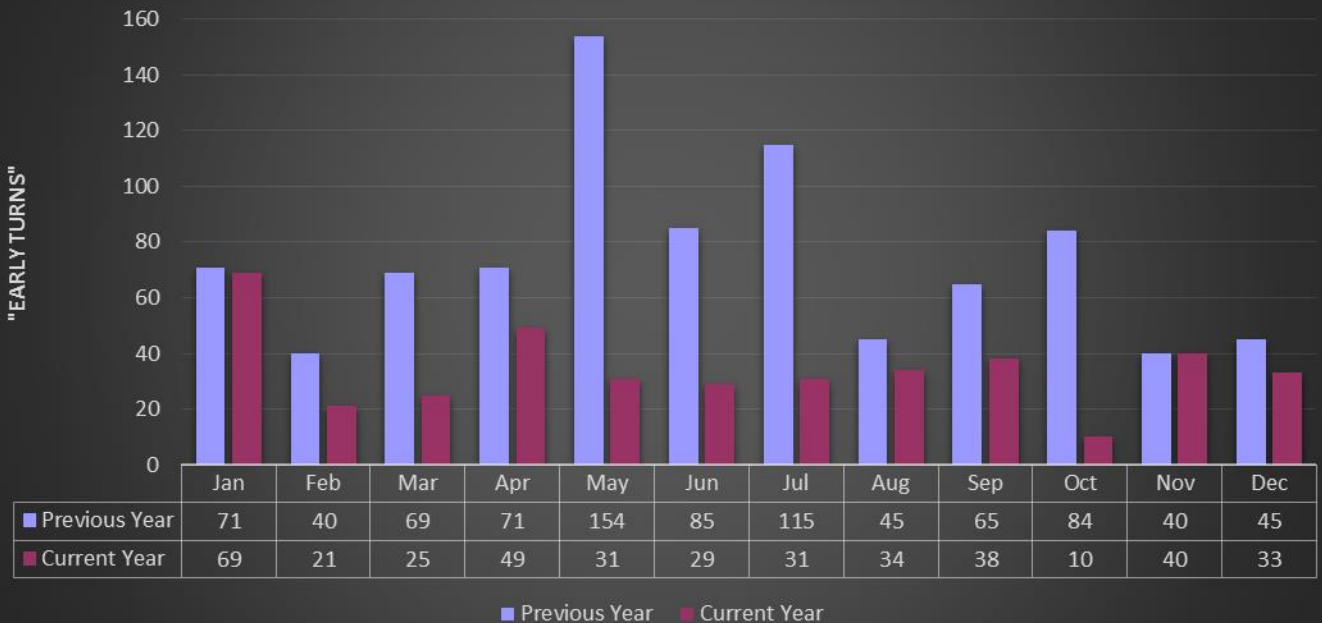
# "Early Turns" - Grand Avenue

## December 2016 Compliance

| Early Turns | Total NW Departures | % Compliance |
|-------------|---------------------|--------------|
| 33          | 3,579               | 99.08%       |



## "Early Turns" - Grand Ave



Airport Noise Office:

602.683.2669

Noise Complaint Hotline:

844.244.7430

Web site:

[www.skyharbor.com/flightpaths](http://www.skyharbor.com/flightpaths)