

2019 PHX East Annual Summary

1. Introduction

This report is an annual summary of aircraft operations and noise mitigation flight procedures at Phoenix Sky Harbor International Airport (PHX) over the City of Tempe (Tempe). The City of Tempe is located directly east of PHX, but the airport is owned and operated by the City of Phoenix.

This summary is prepared for the Tempe Aviation Commission (TAVCO), a commission established pursuant to Chapter 2, Article V, Division V of Tempe City Code. TAVCO consists of nine Tempe residents appointed by the Tempe Mayor with approval of the Tempe City Council. The objective of TAVCO is to advise the Mayor and Council and assist City staff regarding the impact of aircraft and airport operations on Tempe residents and the monitoring, implementation of the 1994 Intergovernmental Agreement (IGA) between the Cities of Tempe and Phoenix regarding noise mitigation flight procedures which attempts to (1) contain departures to the area over the dry Salt River riverbed and Tempe Town Lake in North Tempe and (2) equalize the burden of departure traffic east and west of the airport.

Report prepared for the
Tempe Aviation Commission - TAVCO
by the City of Tempe
255 East Marigold Lane
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June 9, 2020

2. Eastbound departure compliance

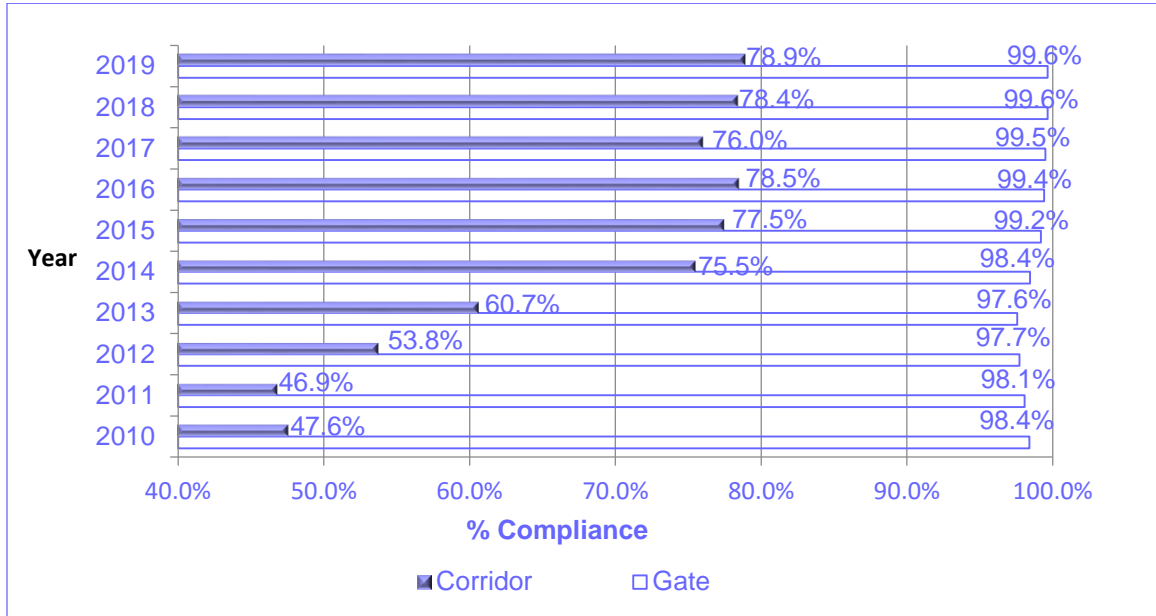


Figure 1: Compliance rates with adherence to the corridor (solid blue) and the 4-DME gate (blue/white)

The compliance percentages in Figure 1 are based on the PHX East quarterly compliance reports. The Tempe Aviation Commission uses a system of several imaginary gates that would create a “corridor” to determine which aircraft departures managed to stay within the confines of the riverbed east to a distance of 4-DME or to the SR202/101 intersection before dispersing. The airport favors using a single, vertical exit gate at the 4-DME, which departing jets need to pass through to stay in compliance.

Cross winds of ten knots or greater was used to filter out deviations due to weather.

The FAA implemented (NextGen) satellite based area navigation (RNAV) departure routing in September 2014 which helped improve airline compliance with the 4-DME Standard Instrument Departure (SID) procedure over North Tempe.

Large turboprop aircraft departures are routinely routed outside the 4-DME gate on diagonal headings to keep them out of the path used by the faster jet aircraft.

The average corridor compliance rate for the large airlines in 2019 was 74%. For all cargo carriers the annual average compliance rate was 57.2%.

3. East/West Equalization

The flow of jet and large turboprop aircraft departures east and west of the airport over the year attempts to reach the goal of a 50/50 split. In 2019 44% went east and 56% went west. Looking at day flows and night flows separately, the west side of the airport receives the most of these departures during daytime hours, while most departures during nighttime go towards the east. This is demonstrated in Figure 2 below.

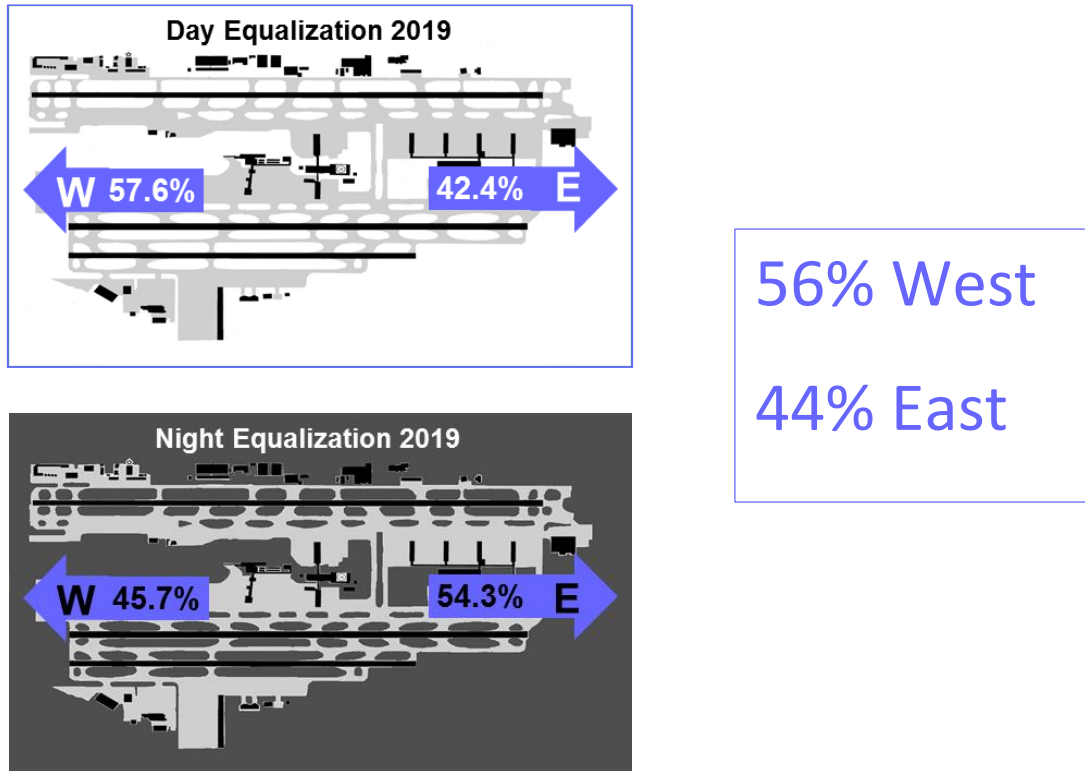


Figure 2: East versus west departures separated to time of day

Daytime hours are defined as the hours between 7:00 a.m. and 10:00 p.m. local time, and nighttime hours the hours between 10:00 p.m. through 7:00 a.m. local time.

4. Noise Complaints

The City of Tempe registered and responded to 26 noise complaints from Tempe residents in 2019 (Figure 3).

PHX East	2013	2014	2015	2016	2017	2018	2019
East Departures	88,623	97,021	95,931	95,102	86,857	88,967	85,391
West Arrivals	106,916	104,781	96,741	88,104	108,284	108,526	109,645
Complaints	59	46	172	74	60	43	26

Figure 3: Jet and large turboprop operations over the east side of PHX and the annual number of complaints received by the City of Tempe.

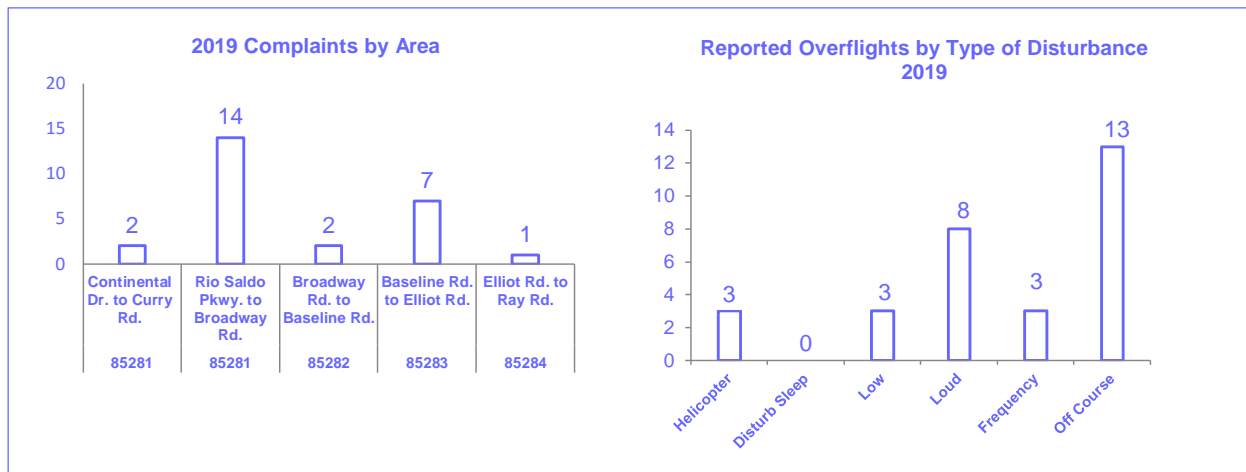


Figure 4: Complaints by area code

Figure 5: Type and number of Incursions.

Complaints to City of Tempe Call Center about aircraft movements observed from the ground to be close enough to constitute a nuisance that include several identified overflights, are registered as single complaints (Figure 4) with each of the identified overflights registered separately (Figure 5).

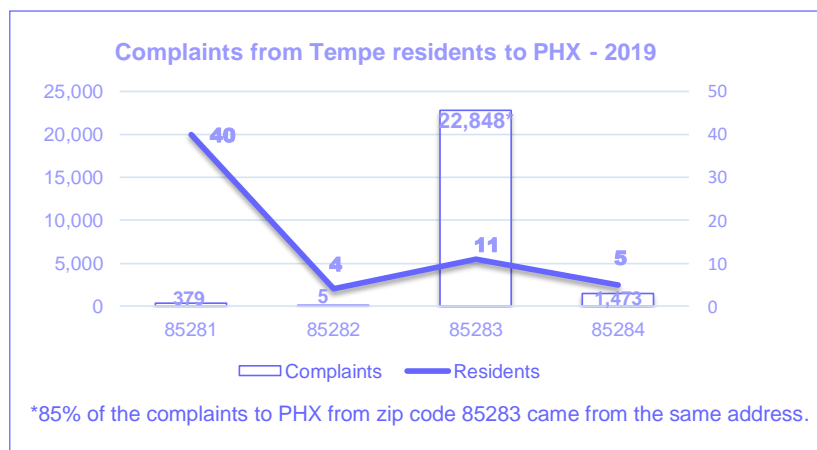
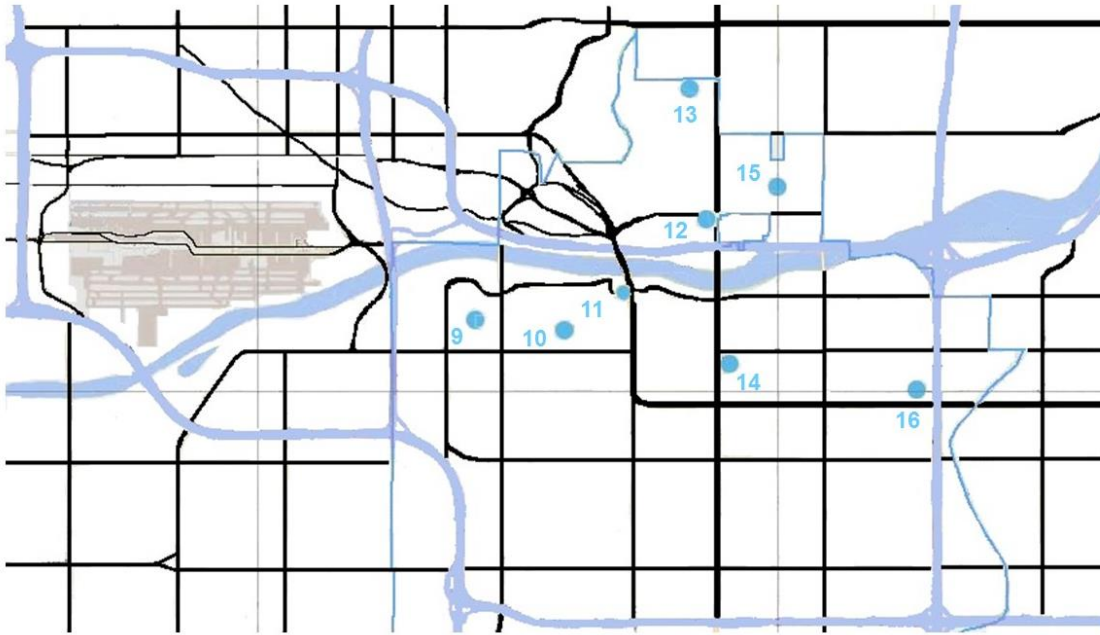


Figure 6: Complaints received by the City of Phoenix from Tempe residents in 2019 by area code.

Tempe residents can also submit complaints directly to the City of Phoenix through phone, email or a PHX phone app (Figure 6).

5. Average Noise Exposure

The City of Phoenix operates twenty noise monitoring sites (NMS) on both sides of PHX of which eight are located in the City of Tempe. The system is used to monitor and compute noise exposure impact over time. The annual average sound levels are use noise planning where noise exposure contours determine compatible land uses, expressed in a sound metric called Ldn (A) or Day Night Level (DNL).



Average (DNL)	NMS09	NMS10	NMS11	NMS12	NMS13	NMS14	NMS15	NMS16
2019	64.2	54.5	64.3	62.1	NA	40.0	55.7	39.7
2018	63.7	54.4	64.4	61.5	37.1	40.6	55.1	40.4
2017	63.1	53.8	63.8	62.3	37.9	NA	55.5	41.1
2016	62.3	53.7	63.8	61.2	38.5	41.4	53.8	42.9
2015	62.3	55.5	63.5	60.2	38.1	42.9	55.0	42.0

Figure 7: PHX NMS in the City of Tempe & averaged sound levels.

The 2019 Ldn (A) levels for NMS in Tempe are shown in Figure 7.

NMS 13 in North Tempe was offline in 2019 because of equipment upgrades. In 2017, NMS 14 was offline due to a housing project on Eighth Street east of Rural Road.