



# Aviation Noise Report 2004 Year End Review

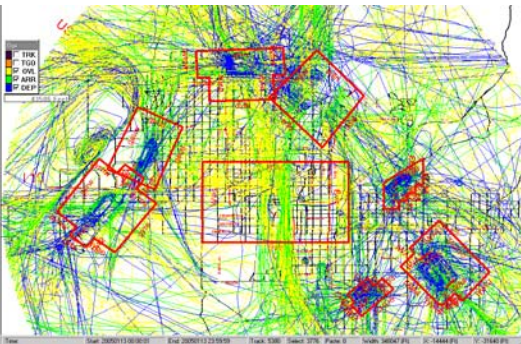
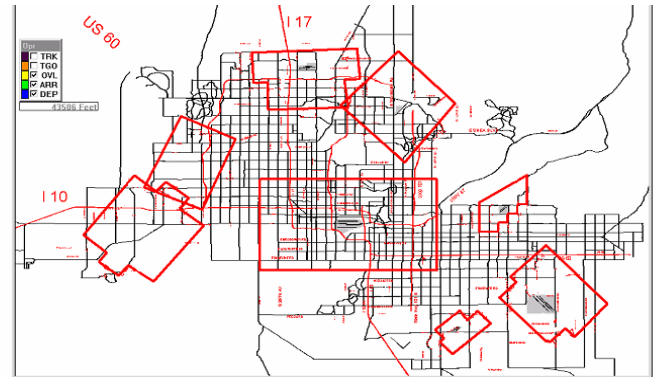


City of Phoenix

## Inside this issue:

Informational Stories	1
Complaint Breakdowns	2/3
RWY Utility Breakdowns	4
RWY Utility Graph	4
Deviations	5
Noise Monitoring Data	6
General Aviation	7

The red boxes represent territories in the vicinity of a public airport as required by the state.



These pictures depict one day's worth of flights within the valley. Above, 3,776 general aviation flights. Below, all 5,380 flights for the day. Green lines are arrivals, Blue lines are departures, and yellow lines are over flights.

## Is Disclosure Enough?

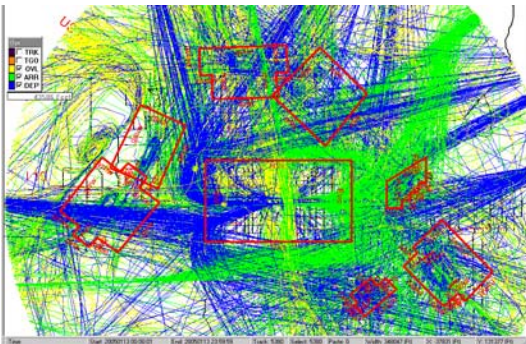
In 1999 the State of Arizona implemented A.R.S. § 28-8486 *Territory in the Vicinity of a Public Airport*. The statute requires airports to identify areas of traffic pattern airspace as defined by the Federal Aviation Administration and the airport's noise contours. The map is then recorded with the county. "The recorded map shall be sufficient to notify owners and potential purchasers of property that the property is located in or outside of a territory in the vicinity of a public airport."  
(find the complete statute and other maps at : <http://www.re.state.az.us/airports/airportintro.html>)

These maps show the public how close they are to an airport, but aviation noise is very subjective. Individuals experience sound and noise differently. To many, the sound of airplanes overhead is part of everyday life, a bad weather day or an unusual flight event may show how busy air traffic is in the Phoenix valley.

The adjacent pictures depict a typical day of flights throughout the valley. Each one of the 5,380 lines is a separate flight on January 13, 2005. The top picture depicts non-commercial flights; the bottom picture shows all flights. Almost every part of the valley gets some kind of over flight.

With all these flights it urges the question, why not make one valley wide disclosure? From the noise office perspective you can never have too much notification disclosure, but the best alternative is zoning. Enacting compatible zoning will not change the fact that the entire valley receives over flights, but it could reduce the number of people living in areas with higher noise levels.

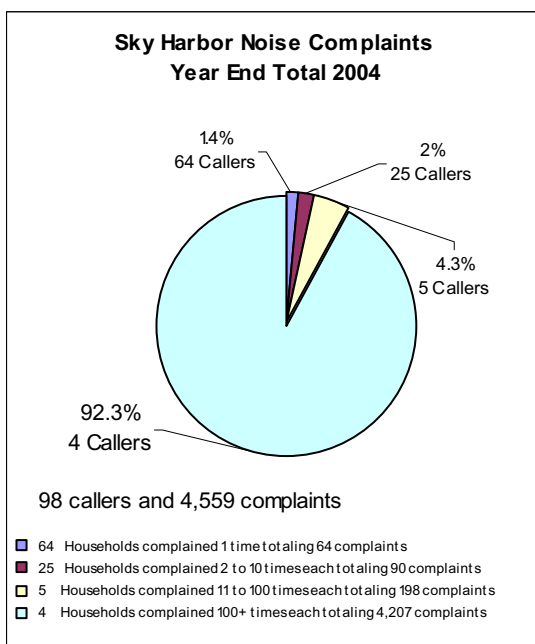
Zoning around Sky Harbor Airport continues to be updated to meet acoustically appropriate building codes. These changes are being made at a slower pace than new growth in the valley. Builders and developers are looking at all areas of the valley for redevelopment and new housing. Redevelopment has also been within the higher noise impacted areas. This is not just a Phoenix issue. As the valley expands, every jurisdiction near an airport must update zoning to ensure development compatibility for individuals, businesses, and airports.



City	2004		2003		2002		2001		2000	
	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints	Households	Complaints
Apache Junction	2	2	0	0	1	4	2	2	10	17
Carefree	1	2,026	5	1,671	24	3,879	3	5	1	1
Cave Creek	1	3	6	1,208	31	1,832	7	8	0	0
Chandler	2	2	4	8	1	1	14	16	1	1
Fountain Hills	3	3	4	12	12	59	40	76	47	58
Gilbert	6	18	4	11	4	6	8	14	13	17
Glendale	1	1	1	1	1	1	11	11	2	2
Goodyear	0	0	0	0	0	0	0	0	1	1
Laveen	0	0	0	0	0	0	1	1	0	0
Maricopa County	2	10	6	38	9	28	1	3	0	0
Mesa	14	58	9	66	36	91	47	123	29	59
New River	1	2	1	10	2	4	4	6	0	0
Paradise Valley	1	3	3	3	8	18	4	4	2	3
Peoria	0	0	1	2	2	2	1	1	0	0
Phoenix	27	1,327	52	3,207	79	5,152	237	20,422	90	2,382
Queen Creek	0	0	1	1	0	0	0	0	0	0
Rio Verde	1	1	2	2	5	5	1	2	0	0
Scottsdale	16	73	29	3,806	77	847	98	399	23	42
Sun City	0	0	0	0	0	0	0	0	1	1
Sun City West	0	0	1	2	0	0	0	0	0	0
Sun Lakes	0	0	0	0	0	0	2	2	0	0
Surprise	0	0	1	1	0	0	1	2	0	0
Tempe	20	1,029	36	106	66	571	176	913	124	356
Unknown	1	1	0	0	3	12	12	24	10	11
<b>Totals:</b>	<b>99</b>	<b>4,559</b>	<b>166</b>	<b>10,155</b>	<b>361</b>	<b>12,512</b>	<b>670</b>	<b>22,034</b>	<b>354</b>	<b>2,951</b>

The noise information office routinely receives complaints stemming from other airports' operations. These charts do not include those complaints.

NOTE: Callers and complaints are counted by the actual city of residence not by zip code.



## Highlights

In 2004 the noise information office received 5,596 fewer complaints from 67 fewer callers than the year before. As with previous years a small percentage of callers comprised the majority of complaints. For 2004, four callers made 4,207 or 92.3% of the year's 4,559 complaints.

Complaint breakdown:

- 2,026 (44.4%) from one caller in Carefree
- 1,185 (25.9%) from two callers in the Ahwatukee area of Phoenix
- 996 (21.8%) from one caller in Tempe

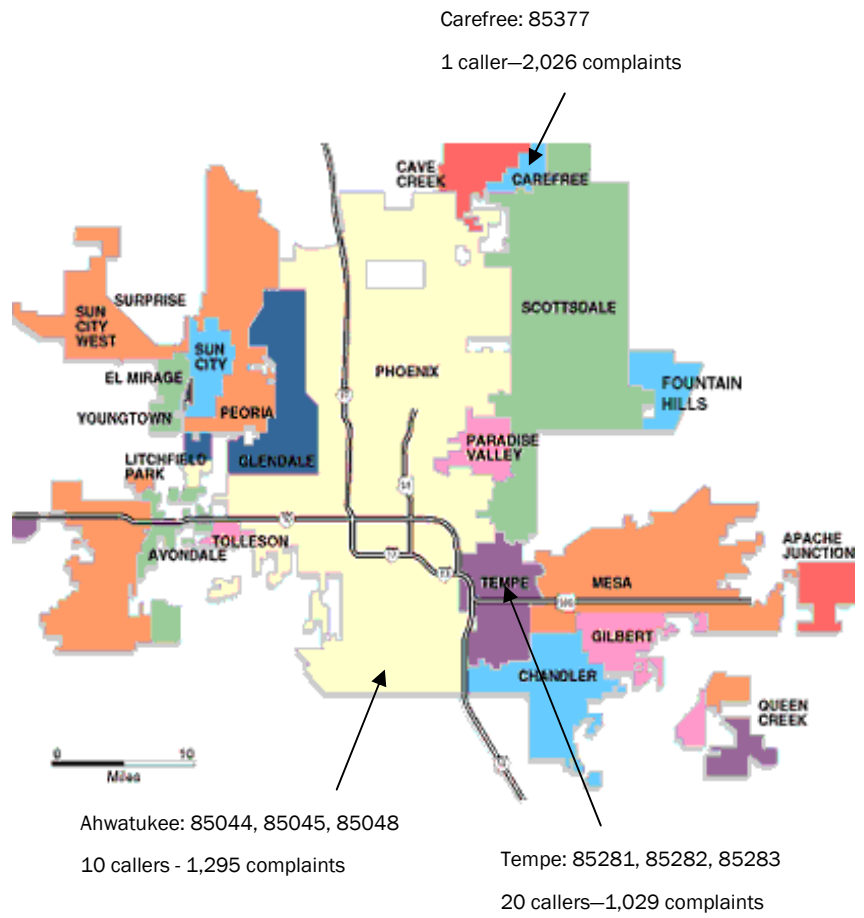
\*The caller from Cave Creek moved during the year and also made complaints from his new Scottsdale residence. He was counted for each city, but in the year end total he is only counted once.



# Complaint Breakdown by Zip Code and City

Zip Code	City	# Households	# Complaints
85219	Apache Junction	2	2
85377	Carefree	1	2,026
85331	Cave Creek	1	3
85224	Chandler	1	1
85249	Chandler	1	1
	<b>Total</b>	<b>2</b>	<b>2</b>
85268	Fountain Hills	3	3
85234	Gilbert	4	16
85296	Gilbert	2	2
	<b>Total</b>	<b>6</b>	<b>18</b>
85308	Glendale	1	1
85086	Maricopa County	1	8
85331	Maricopa County	1	2
	<b>Total</b>	<b>2</b>	<b>10</b>
85201	Mesa	4	8
85202	Mesa	1	1
85203	Mesa	2	2
85206	Mesa	1	1
85207	Mesa	2	42
85208	Mesa	1	1
85212	Mesa	1	1
85215	Mesa	2	2
	<b>Total</b>	<b>14</b>	<b>58</b>
85086	New River	1	2
85253	Paradise Valley	1	3
85008	Phoenix	2	7
85013	Phoenix	2	2
85015	Phoenix	1	1
85016	Phoenix	1	2
85018	Phoenix	2	5
85020	Phoenix	2	2
85021	Phoenix	1	1
85022	Phoenix	3	3
85044	Phoenix	5	249
85045	Phoenix	1	4
85048	Phoenix	4	1,042
85051	Phoenix	1	1
85254	Phoenix	1	1
85331	Phoenix	1	7
	<b>Total</b>	<b>27</b>	<b>1,327</b>

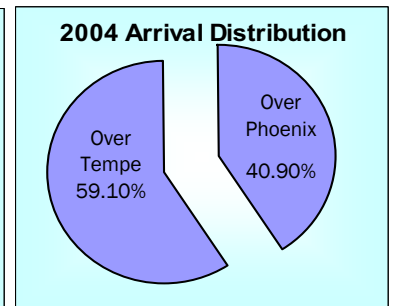
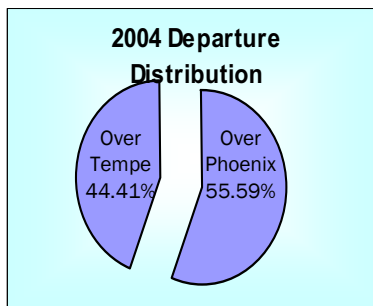
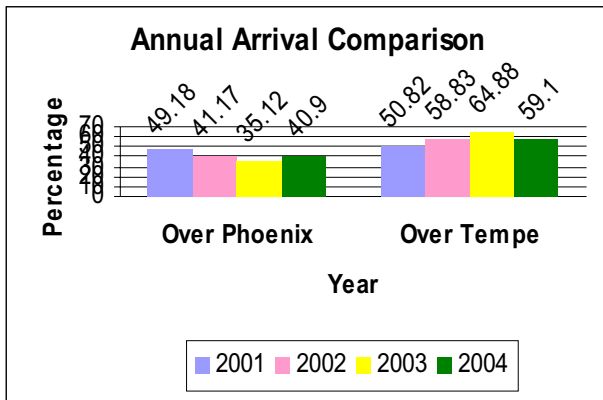
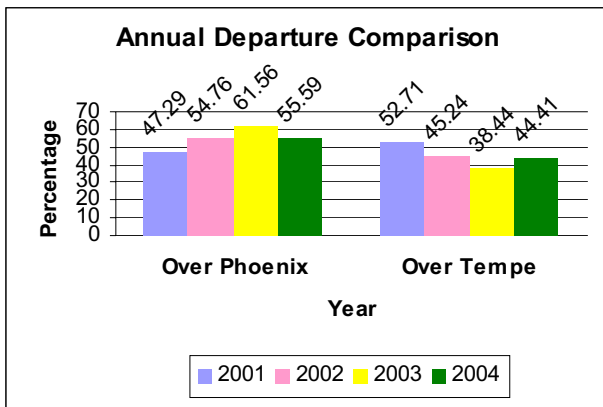
Zip Code	City	# Households	# Complaints
85263	Rio Verde	1	1
85250	Scottsdale	3	3
85251	Scottsdale	1	1
85255	Scottsdale	2	2
85257	Scottsdale	4	39
85258	Scottsdale	3	8
85260	Scottsdale	2	19
85262	Scottsdale	1	1
	<b>Total</b>	<b>16</b>	<b>73</b>
85281	Tempe	15	1,020
85282	Tempe	4	5
85283	Tempe	1	4
	<b>Total</b>	<b>20</b>	<b>1,029</b>
Unknown		1	1
	<b>Grand Total</b>	<b>99</b>	<b>4,559</b>



# Runway Utilization January– December 2004

	Departures Day	% of Daytime Departures	Departures Night	% of Night Departures	Total Departures By Runway	% of Total Departures	
Runway							
8	8,215	3.6%	3,142	12.6%	11,357	4.45%	Departures over
7L	82,513	35.9%	9,300	37.2%	91,813	35.99%	
7R	6,216	2.7%	3,908	15.6%	10,124	3.97%	
<b>Total 7R/7L/8</b>	<b>96,944</b>	<b>42%</b>	<b>16,350</b>	<b>65%</b>	<b>113,294</b>	<b>44.41%</b>	<b>Tempe</b>
26	16,109	7.0%	2,985	11.9%	19,094	7.48%	Departures over
25R	108,283	47.1%	4,103	16.4%	112,386	44.05%	
25L	8,795	3.8%	1,543	6.2%	10,338	4.05%	
<b>Total 25L/25R/26</b>	<b>133,187</b>	<b>58%</b>	<b>8,631</b>	<b>35%</b>	<b>141,818</b>	<b>55.59%</b>	<b>Phoenix</b>
<b>Total</b>	<b>230,131</b>	<b>100%</b>	<b>24,981</b>	<b>100%</b>	<b>255,112</b>	<b>100%</b>	
	Arrivals Day	% of Daytime Arrivals	Arrivals Night	% of Night Arrivals	Total Arrivals by Runway	% of Total Arrivals	
Runway							
8	51,693	22.5%	3,974	17.3%	55,667	22.01%	Arrivals over
7L	7,030	3.1%	5,258	22.9%	12,288	4.86%	
7R	32,635	14.2%	2,860	12.4%	35,495	14.03%	
<b>Total 7R/7L/8</b>	<b>91,358</b>	<b>40%</b>	<b>12,092</b>	<b>53%</b>	<b>103,450</b>	<b>40.90%</b>	<b>Phoenix</b>
26	75,083	32.6%	2,924	12.7%	78,007	30.84%	Arrivals over
25R	19,010	8.3%	5,969	26.0%	24,979	9.88%	
25L	44,522	19.4%	1,989	8.7%	46,511	18.39%	
<b>Total 25L/25R/26</b>	<b>138,615</b>	<b>60%</b>	<b>10,882</b>	<b>47%</b>	<b>149,497</b>	<b>59.10%</b>	<b>Tempe</b>
<b>Total</b>	<b>229,973</b>	<b>100%</b>	<b>22,974</b>	<b>100%</b>	<b>252,947</b>	<b>100%</b>	

## Annual Runway Utilization Comparison



Per a 1994 Intergovernmental Agreement between the cities of Phoenix and Tempe, the City of Phoenix encourages the FAA to distribute departure traffic equally over Phoenix and Tempe, weather and traffic permitting. This measurement is based on a 12-month period.

# 4 DME Results, January– December 2004

Aviation Noise Report  
2004 Year End Review

Airline Code	Airline Name	Deviations	Total Departures to the East	% Compliance
AMX	Aero Mexico	17	125	86.40%
ACA	Air Canada	2	104	98.08%
<b>CYO</b>	<b>Air Transport Inc</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
ABX	Airborne Express	21	452	95.35%
ASA	Alaska	57	1,610	96.46%
<b>AAY</b>	<b>Allegiant</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
AAH	Aloha Airlines	11	213	94.84%
AWE	America West	475	27,561	98.28%
AAL	American	190	2,646	92.82%
<b>EGF</b>	<b>American Eagle</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
AMT	American Trans Air	5	844	99.41%
AMF	Ameriflight	2	12	83.33%
AJI	Ameristar	5	17	70.59%
CAA	Atlantic Southeast	33	669	95.07%
BSK	Biscayne-Miami Air	1	12	91.67%
<b>BOE</b>	<b>Boeing Company</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
<b>BAW</b>	<b>British Airways</b>	<b>0</b>	<b>66</b>	<b>100.00%</b>
<b>BTA</b>	<b>Britt Airways</b>	<b>0</b>	<b>4</b>	<b>100.00%</b>
CCI	Capital Air Cargo	8	44	81.82%
CXP	Casino Express	2	6	66.67%
<b>CSJ</b>	<b>Castle Aviation</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
<b>CWC</b>	<b>Centurion Air Cargo</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
CCP	Champion Air	4	23	82.61%
CHN	Channel Island Aviation	1	2	50.00%
<b>WML</b>	<b>Chantilly Air</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
CCY	Cherry Air	2	6	66.67%
FIV	Citation Shares	9	58	84.48%
COM	Comair	3	47	93.62%
COA	Continental	38	2,097	98.19%
<b>COO</b>	<b>Corporate Airlink</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
OPT	Corporate Wings	58	312	81.41%
CTT	Custom Air Transport	1	36	97.22%
DDA	D & D Aviation	1	3	66.67%
DAL	Delta	20	1,850	98.92%
DOJ	Dept. of Justice	4	29	86.21%
DHL	DHL Airways	39	267	85.39%
<b>ECJ</b>	<b>East Coast Jets</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
<b>ELJ</b>	<b>Elite Jet</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
ELT	Elliott Aviation	1	1	0.00%
EIA	Evergreen	1	3	66.67%
EJA	Executive Jet Aviation	65	359	81.89%
EJM	Executive Jet Management	3	18	83.33%
FAO	Falcon Air Express	1	2	50.00%
FRL	Farelas	34	1,372	97.52%
FDX	Federal Express	69	599	88.48%
LXJ	Flexjet	9	63	85.71%
<b>FEX</b>	<b>Flight Exec Limited</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
<b>FJS</b>	<b>Florida Jet Service</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
<b>FRD</b>	<b>Ford Motor Company</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
FFT	Frontier	16	812	98.03%
N	General Aviation	338	2,476	86.35%
<b>GAF</b>	<b>German Air Force</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
<b>GLB</b>	<b>Global Airways</b>	<b>0</b>	<b>3</b>	<b>100.00%</b>
HAL	Hawaiian	3	213	98.59%
JBU	Jet Blue	5	62	91.94%
JDC	John Deere	1	3	66.67%
KAI	Kaiser Air	1	4	75.00%
KFS	Kalitta Air	2	11	81.82%
<b>LYM</b>	<b>Key Lime Air</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
KHA	Kitty Hawk	40	264	84.85%

Airline Code	Airline Name	Deviations	Total Departures to the East	% Compliance
PCE	Pace Airways	7	63	88.89%
PCJ	Pacific Jet	1	18	94.44%
PKW	Pak West	1	5	80.00%
<b>PLZ</b>	<b>Planet Airways</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
<b>PAC</b>	<b>Polar Air Cargo</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
<b>PWA</b>	<b>Priester Aviation</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
<b>RTN</b>	<b>Raytheon Aircraft Co.</b>	<b>0</b>	<b>2</b>	<b>100.00%</b>
<b>REL</b>	<b>Reliance Aviation</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
RYN	Ryan Air	4	8	50.00%
<b>SPA</b>	<b>Sierra Pacific</b>	<b>0</b>	<b>4</b>	<b>100.00%</b>
SKW	Sky West	135	2,215	93.91%
SWA	Southwest	769	25,979	97.04%
SJJ	Spirit Aviation	1	5	80.00%
SCX	Sun Country	2	123	98.37%
<b>TWY</b>	<b>Sunset Aviation</b>	<b>0</b>	<b>5</b>	<b>100.00%</b>
<b>CNK</b>	<b>Sunwest Home</b>	<b>0</b>	<b>4</b>	<b>100.00%</b>
<b>SWI</b>	<b>Sunworld</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
SWQ	Swift	26	144	81.94%
TAG	TAG Aviation	1	13	92.31%
<b>TRZ</b>	<b>Transmeridian Air</b>	<b>0</b>	<b>1</b>	<b>100.00%</b>
USA	U.S. Air	12	1,490	99.19%
UAL	United	55	3,009	98.17%
UPS	United Parcel Service	91	721	87.38%
UEJ	Universal Jet	2	5	60.00%
USC	US Check	164	469	65.03%
VHT	Vegas Heat	1	4	75.00%
<b>WJA</b>	<b>West Jet</b>	<b>0</b>	<b>12</b>	<b>100.00%</b>
<b>TOTAL</b>		<b>3,350</b>	<b>93,707</b>	<b>96.43%</b>

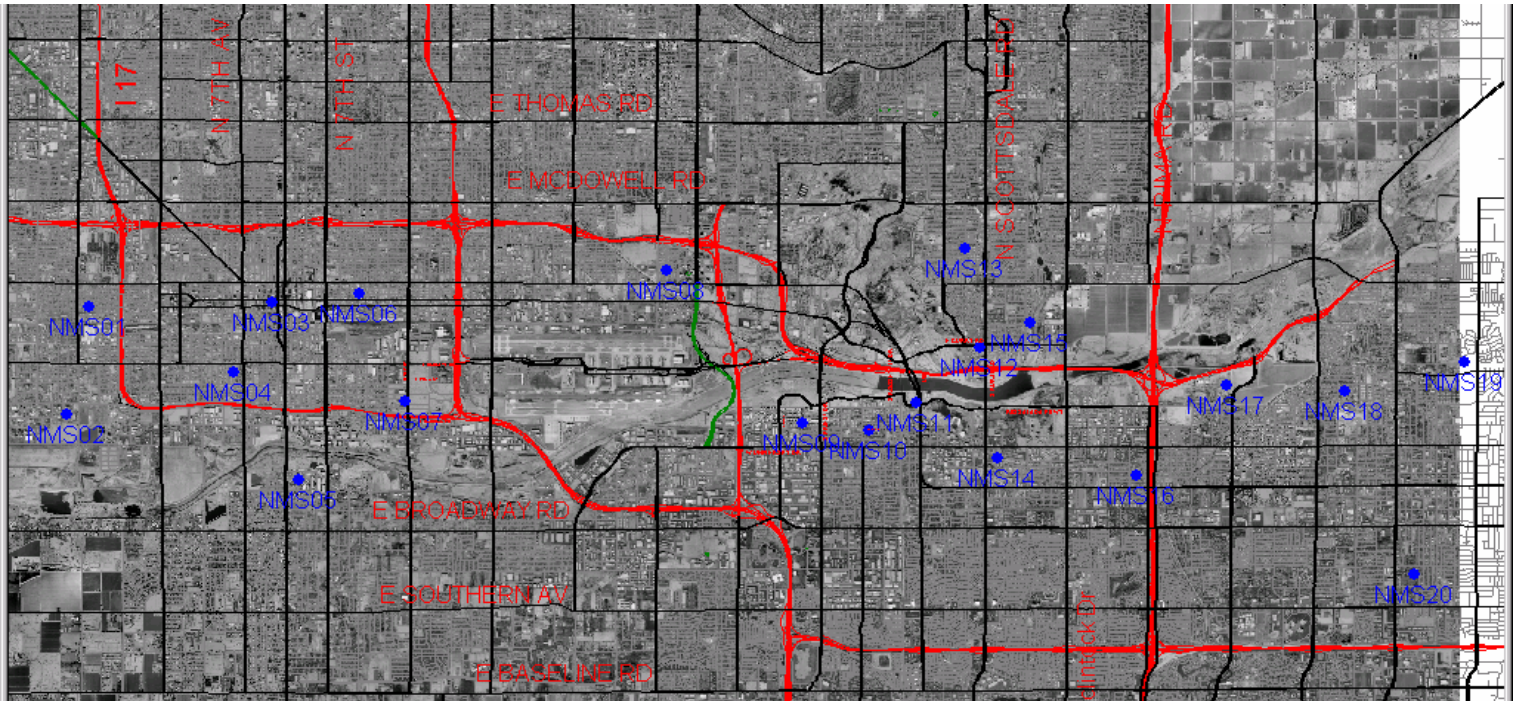
Since the early 1980's, the City of Phoenix has taken measures to reduce the exposure of airport-area residents from aircraft noise. One such measure was the development and implementation of the 4-DME noise abatement departure procedure.

Established in 1984 and formalized in 1994 through an Intergovernmental Agreement (IGA) between the cities of Phoenix and Tempe, the procedure directs jets departing to the east to travel approximately 5 miles from the airport (4-DME) before turning to their assigned heading.

The IGA also requires the City of Phoenix to monitor procedure compliance. This is achieved through the creation of a gate located at the 4 DME turning point. The gate measures 5,550 feet long and runs 1,000 feet north of the north runway (RWY 8/26) to 1,000 feet south of the center runway (RWY 7L/25R). Notifications are sent to operators that do not fly through this area.



# Noise Monitoring Results



Noise monitoring sites (NMS) 1-8 are located in Phoenix, 9-16 in Tempe, and 17-20 in Mesa.

Noise Monitoring Site	2004 Annual DNL	2003 Annual DNL	2002 Annual DNL	2001 Annual DNL	2000 Annual DNL
NMS 1	57.1	56.7	54.6	56.4	59.3
NMS 2	59.7	58.8	59.7	61.2	60.6
NMS 3	59.3	59.8	58.2	57.4	61.3
NMS 4	61.8	61.9	61.3	63.4	63.9
NMS 5	59.2	59.5	59.1	60.9	62.1
NMS 6	54.1	57.7	54.8	54.6	59.9
NMS 7	70.5	69.6	69.7	72.3	72.2
NMS 8	54.2	56.2	55.7	54.2	56.8
NMS 9	66.9	65.0	65.8	68.2	67.5
NMS 10	62.7	61.7	62.4	64.9	64.8
NMS 11	66.7	65.5	66.1	68.5	68.3
NMS 12	64.1	64.7	64.7	65.8	66.3
NMS 13	51	48.8	50.4	49.3	49.6
NMS 14	55.3	55.9	57.2	59.4	59.1
NMS 15	60.2	61.0	59.7	61.1	62.5
NMS 16	53.6	50.9	52.2	52.5	52.2
NMS 17	60.3	58.8	59.9	62.2	62.5
NMS 18	58	57.1	57.1	58.7	59.6
NMS 19	52.4	52.7	52.4	52.8	50.8
NMS 20	52.5	49.5	50.0	49.7	51.1

\*DNL:

Day Night Average Sound Level, abbreviated DNL and symbolized as  $L_{DN}$ , is the 24 hour average sound level, in decibels, obtained from the accumulation of all events with the addition of 10 decibels to sound levels in the night from 10 P.M. to 7 A.M. The weighting of nighttime events accounts for the usual increased interfering effects of noise during the night, when ambient levels are lower and people are trying to sleep.

Since 1996 the City of Phoenix has been recording noise from 20 noise monitors located in communities near the airport record noise readings on a 24 hour basis. This noise data is then correlated to flight radar data to determine what portion is aircraft noise.

Noise levels tend to fluctuate due to various factors including the number of operations, type of aircraft, and runway use. In Phoenix, major changes have been the Stage 2 jet phase out, September 11, 2001 affects, runway construction / maintenance, and an increase in the use of regional jets.

### Noise Monitor Maintenance:

In 2004 two sites in Tempe experienced power shut-downs. Utility and site improvements made by the City of Tempe to the areas next to sites 11 and 14 caused loss of data for extended periods of time. Site 11 at Tempe Beach Park was non operational for most of the month December. Site 14 near Rural Road and University Drive has been non-operational since January 2004. The City of Tempe is working on solutions for this site.

