

# Airport Noise Management System Monthly Report Report Descriptions



## **Background**

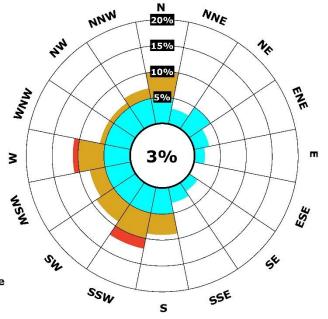
Installed in 1996, the Airport Noise Management System (ANMS) enables the City of Chicago to monitor the amount of noise being generated over the communities surrounding Chicago O'Hare International Airport (O'Hare) by the aircraft operating at the Airport. The ANMS collects, analyzes and processes data from a number of sources of information including a network of 35 noise monitors around O'Hare, Federal Aviation Administration (FAA) radar data, weather data, and noise complaints. Over 150,000 flights and 400,000 noise events are recorded by the ANMS each month for the Chicago Department of Aviation (CDA). The City of Chicago and the O'Hare Noise Compatibility Commission (ONCC) utilize data from the ANMS to facilitate the development and management of noise abatement programs at the Airport. The following reports summarize pertinent monthly information from that data concerning the noise levels and operations at the Airport.

## **Wind Summary**

Wind is a key factor influencing runway use and operation. Aircraft performance requirements make it necessary for aircraft to take off and land into the wind for safety purposes. Ideally, aircraft should take off and land into the wind as the increased airflow over the wings provides improved lift. The diagram to the right summarizes the

percent of wind occurrences by direction based on hourly data from the KORD Automated Surface Observing System (ASOS), which is a joint effort of multiple government agencies.





#### **Aircraft Operations Summary**

The chart below illustrates the trend in monthly aircraft operations at O'Hare. Total monthly operations are based on the FAA's Air Traffic Activity Data System (ATADS).

				Aircraft O	perations	by Month				
Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
January	66,045	67,535	70,584	67,893	67,794	59,692	66,597	66,998	66,022	69,419
February	62,259	62,520	60,169	65,508	61,268	61,059	60,242	62,856	60,362	61,563
March	70,435	73,387	76,711	73,040	72,436	73,546	74,017	72,954	70,656	
April	68,057	73,229	72,802	73,492	71,140	73,657	72,927	72,291	69,009	
May	70,195	75,615	74,318	74,947	77,367	76,343	76,329	75,102	73,928	
June	69,800	74,821	76,369	77,262	76,668	77,641	76,026	76,980	75,553	
July	72,908	79,446	79,273	78,481	81,186	83,017	79,679	76,635	77,851	
August	73,081	80,107	79,518	79,941	80,884	80,562	78,895	78,269	80,110	
September	69,430	75,358	73,877	73,561	74,803	73,884	73,560	73,383	73,613	
October	71,755	77,312	75,779	75,932	79,075	78,494	77,470	75,948	76,726	
November	66,938	72,702	69,054	70,146	71,488	71,915	70,466	69,958	71,369	
December	66,996	70,585	70,344	67,905	69,178	72,123	68,928	66,261	71,850	
Total	827,899	882,617	878,798	878,108	883,287	881,933	875,136	867,635	867,049	130,982

## **Aircraft Fleet Mix Report**

The Aircraft Fleet Mix Report summarizes the number and type of aircraft operating at O'Hare during all hours of the day and during the nighttime hours. In 1990, Congress passed the Airport Noise and Capacity Act (ANCA) to create a more comprehensive method for regulating aircraft noise. ANCA tasked the FAA with establishing a national noise policy, as well as substituted advances in "quiet engine" technology for restrictions on airport operations. These aircraft noise standards are codified in FAA Part 36 regulations, "Noise Standards: Aircraft Type and Airworthiness Certification." Aircraft must meet Part 36 standards to receive "type" or "airworthiness" certificates to operate in the United States. There are five stages of noise standards for aircraft: Stage 1, Stage 2, Stage 3, Stage 4, and Stage 5. Currently, all aircraft operating at O'Hare and within the United States are Stage 3 or 4. These aircraft, such as the Airbus A320 and new Boeing 737's (B737) use a quieter type of engine that significantly reduces noise at the source. Stage 5 noise standards will apply to new aircraft designed, manufactured, and certificated after December 31, 2017.

## **Runway Use Report**

O'Hare has eight runways that are all utilized at different times depending primarily upon the prevailing wind conditions on the airfield, as well as any runway maintenance.

The Runway Use Report presents the average percentage of use for each runway for the current month, the previous month, and a 12-month average. The percentage of use for departures and arrivals is shown graphically for each runway. This data is for daytime hours (7 a.m. to 10 p.m.) and for all aircraft types. Also shown is the runway use for nighttime hours (10 p.m. to 7 a.m.). Percentage is a ratio whereas a percentage point (pp) is the difference between two percentages.

## **Departures**

Most used departure runway: **28R - 52%**9R departures increased by **5pp** from January 2018
28R departures decreased by **7pp** from January 2018

#### Arrivals

Most used arrival runway: **27L – 37%**10C arrivals increased by **4pp** from January 2018
27L arrivals decreased by **5pp** from January 2018

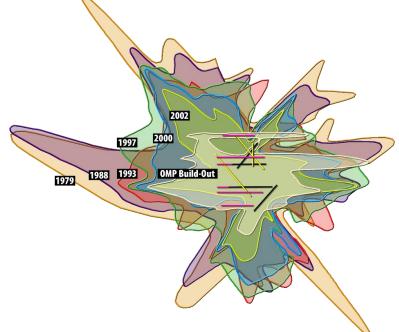
# **Aircraft Noise Report**

The Aircraft Noise Report summarizes noise measurements from each of the 35 permanent noise monitors located around the Airport. The data presented summarizes the Day-Night Average Sound Levels (DNL's).

DNL is a 24-hour time-averaged sound exposure level with a 10 decibel (dB) nighttime (10 p.m. to 7 a.m.) weighting to account for the lower background noise levels during the nighttime hours. The dataset for the current month includes 975 monitor-days out of a possible 980 monitor-days (99%).

The data display the measured aircraft DNL for each month and a comparison to the same month of the previous year, and compares the current month to the 12-month average. The aircraft noise report identifies noise from the existing aircraft operations at O'Hare. The modeled values for each monitor are shown for 1997, 2000, and the OMP Build-Out Noise Contours. The aircraft noise levels for each monitor vary from month to month. This is primarily due to runways being utilized differently under changing wind conditions.

The modeled 65 DNL noise contour at O'Hare has shrunk in size consistently since 1979 (right) despite an increase in total aircraft operations because of the replacement of Stage 1 and 2 aircraft with Stage 3 and 4 aircraft mandated by ANCA.



## **Noise Complaint Report**

The CDA maintains a toll-free noise hotline (**1-800-435-9569**) and an online service at <a href="https://www.flychicago.com/ORDNoise">www.flychicago.com/ORDNoise</a> for citizens to express their concern about particular aircraft events or aircraft noise levels in general. The Noise Complaint Report summarizes the number of complaints received and where the complainants were located. The tabular report lists the number of complaints by community as well as the number of individual complainants. The graphs illustrate the nature of complaints during the specified month.

Also shown are complaints by month displaying seasonal trends. The chart below illustrates the trend in monthly complaints. These totals only include complaints made within the State of Illinois to the O'Hare Noise Hotline toll-free number or online service.

				Co	mplaints l	by Month				
Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
January	860	907	1,349	5,635	1,357	6,321	39,500	359,633	354,185	252,878
February	1,186	968	1,060	3,236	966	7,472	122,803	343,149	337,094	33,499
March	1,069	1,222	1,209	2,175	1,402	11,145	352,846	468,691	466,189	
April	985	1,478	1,099	1,113	1,863	10,961	408,468	459,026	565,697	
May	1,235	1,168	1,192	1,210	1,881	21,436	407,523	415,778	606,591	
June	1,131	1,587	1,340	1,332	2,419	22,566	436,119	483,443	483,252	
July	1,466	1,077	849	1,074	2,280	27,956	382,999	512,849	490,368	
August	1,649	1,358	2,050	1,470	2,296	30,249	420,716	503,447	427,557	
September	1,883	1,290	3,120	993	2,124	32,532	388,767	434,796	476,086	
October	1,514	1,207	3,292	1,366	3,496	33,866	401,379	403,855	519,276	
November	825	1,234	3,443	877	4,763	30,748	351,873	319,437	465,943	
December	1,055	850	4,044	1,016	4,646	32,959	345,168	263,238	330,035	
<b>Total Calls</b>	14,858	14,346	24,047	21,497	29,493	268,211	4,058,161	4,967,342	5,522,273	286,377



Airc	raft	Average Operations Per Day (All Hours)	Average Operations Per Night (10 p.m 7 a.m.)	Percent of Total (All Hours)	Percent of Total (10 p.m 7 a.m.)	Percentage of Total
Regional Aircraft				,	, , ,	Day Night
	CRJ200/700/900	653	50	30.1%	2.3%	
	E135/E145	208	12	9.6%	0.6%	
	E170	257	21	11.8%	1.0%	
	E190	23	1	1.1%	0.0%	
_	C208	11	0	0.5%	0.0%	
	Subtotal	1,152	84	53.0%	3.9%	
Narrow-Body Airc	raft					
	A319/320/321	304	40	14.0%	1.8%	
_	B717	5	0	0.2%	0.0%	
	B737	463	48	21.3%	2.2%	
	B757	26	5	1.2%	0.2%	1
	MD80	40	4	1.8%	0.2%	
	MD90	3	0	0.1%	0.0%	
	Subtotal	841	97	38.7%	4.5%	
Wide-Body Aircra	ft		1			
	A300	3	2	0.1%	0.1%	
	A330	9	0	0.4%	0.0%	
	A340	4	2	0.2%	0.1%	
	B747	32	9	1.5%	0.4%	
	B767	19	5	0.9%	0.2%	
	B777	56	11	2.6%	0.5%	
	B787	18	2	0.8%	0.1%	
	DC10	6	3	0.3%	0.1%	
	MD11	6	2	0.3%	0.1%	
	Subtotal	153	36	7.0%	1.7%	
<b>General Aviation</b>		27	2	1.2%	0.1%	
	Total	2,173	219	100%	10%	0% 20% 40%

# **Runway Use Report**

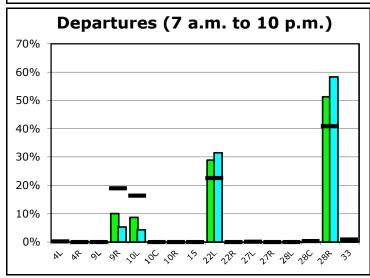
Chicago O'Hare International Airport

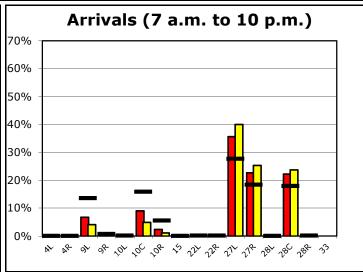
Period: February 2018

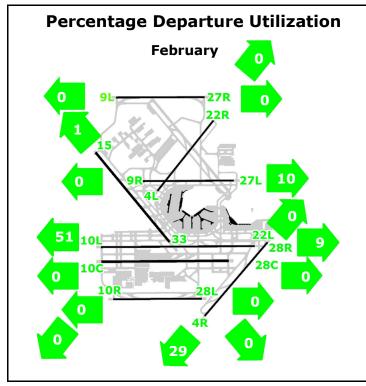
Time of Day: 7:00 a.m. to 10:00 p.m.

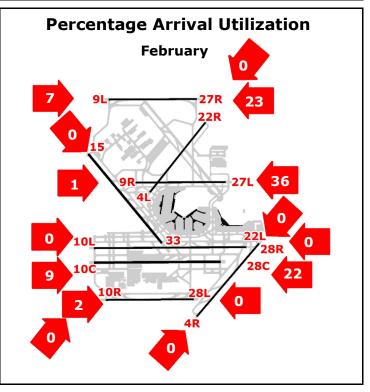


Runway Use Source: Airport Nois	-			•													
			, , , , , , , , , , , , , , , , , , , ,					Rui	ıway	Utilizat	ion						
		4L	4R	9L	9R	10L	10C	10R	15	22L	22R	27L	27R	28L	28C	28R	33
Average Daily De	partures	;															
February 2018		2	0	0	100	87	0	0	0	288	0	1	0	0	3	511	5
January 2018		0	0	0	54	44	0	0	0	318	0	1	0	0	2	588	3
12 Month Avg.		1	0	0	204	176	0	0	0	243	0	1	0	0	3	439	9
Average Daily Arr	rivals																
February 2018		0	0	65	8	2	86	23	0	1	0	341	217	0	212	3	n/a
January 2018		0	0	40	2	2	47	11	2	0	0	389	246	0	231	2	n/a
12 Month Avg.		0	1	140	7	2	164	57	0	1	2	285	190	0	185	1	n/a









# **Runway Use Report**

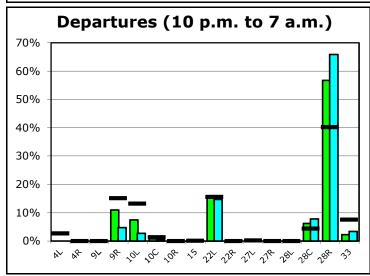
Chicago O'Hare International Airport

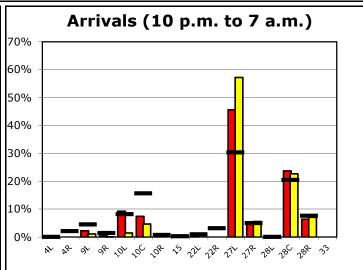
Period: February 2018

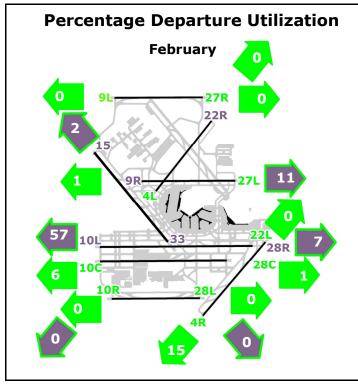
Time of Day: 10:00 p.m. to 7:00 a.m.

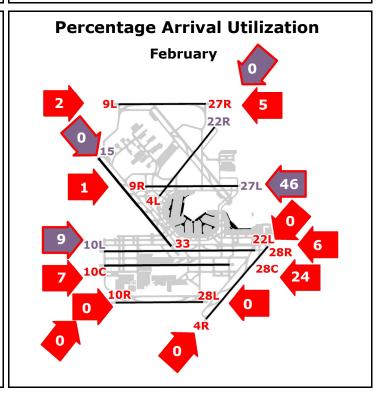


Runway Use (10 p. Source: Airport Noise Manager			-	)												
Source. Airport Noise Planager	nent 5	ystem (7	111113)				Rui	ıway ˈ	Utiliza	tion						
-	4L	4R	9L	9R	10L	10C	10R	15	22L	22R	27L	27R	28L	28C	28R	33
Average Daily Departures																
February 2018	0	0	0	10	7	1	0	0	13	0	0	0	0	6	50	2
January 2018	0	0	0	4	2	0	0	0	13	0	0	0	0	7	59	3
12 Month Avg.	3	0	0	16	14	1	0	0	16	0	0	0	0	5	42	8
Average Daily Arrivals																
February 2018	0	0	3	1	12	10	0	0	0	0	59	6	0	31	8	n/a
January 2018	0	0	1	0	2	6	0	0	0	0	74	7	0	29	9	n/a
12 Month Ava	Ο	3	7	2	12	23	1	0	1	5	44	7	Ο	30	11	n/a

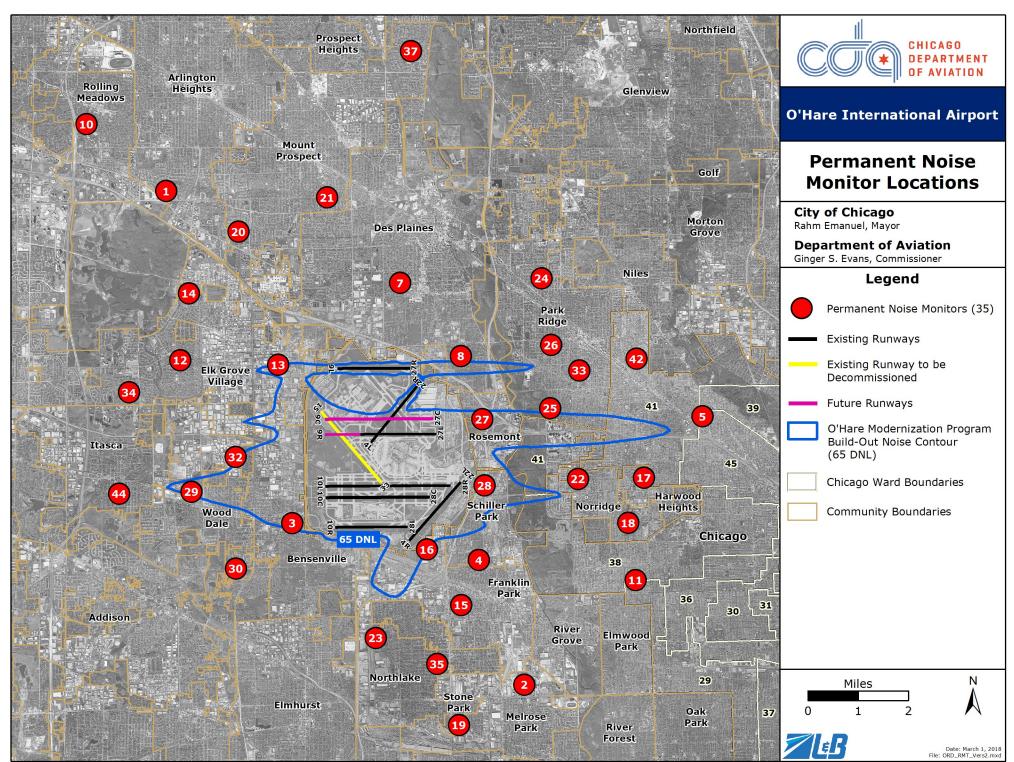








Purple denotes Fly Quiet preferential departure and arrival runways.



#### Aircraft Noise Report (1 of 2)

Chicago O'Hare International Airport

Period: February 2018 Metric: Aircraft DNL



Site	Community			ı	Last 12	Month	s of Mo	nitore	d Noise	Levels	5			Last	12 Month	Modeled	Modeled	Modeled
#	,	<i>Mar</i> <b>17</b>	Apr <b>17</b>	<i>May</i> <b>17</b>	Jun <b>17</b>	Jul <b>17</b>	Aug <b>17</b>	Sep <b>17</b>	Oct <b>17</b>	<i>Nov</i> <b>17</b>	<i>Dec</i> <b>17</b>	Jan <b>18</b>	Feb <sup>1</sup> 18	Feb 17	Average	1997 Values	2000 Values	OMP Build-Out Values
		1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	10	10	17	vs 1997 <sup>2</sup>	values	values	values
1	Arlington Heights	57.2	59.6	55.8	53.7	58.6	54.4	50.7	59.3	55.2	53.4	58.3	57.4	54.0	56.9	63.0	63.0	50.5
2	Melrose Park	57.3	57.6	63.0	62.1	64.4	58.5	59.4	61.9	58.5	57.2	58.0	60.4	53.9	60.5	63.4	61.0	50.3
3	Bensenville	63.4	64.2	64.2	65.0	64.0	64.6	64.8	64.4	65.0	64.7	64.4	66.1	63.7	64.6	71.3	67.3	64.9
4	Schiller Park	56.9	58.1	57.8	58.5	57.7	57.7	56.5	56.8	57.9	55.0	55.6	56.7	55.8	57.2	62.6	62.6	58.8
5	Chicago	60.9	61.8	61.3	62.1	61.8	61.5	60.2	60.4	59.9	59.3	59.2	58.7	59.1	60.7	60.8	59.8	61.9
7	Des Plaines	51.5	51.7	52.8	51.3	53.3	52.3	51.6	50.6	52.0	53.5	50.6	51.6	49.7	52.0	65.4	62.0	48.5
8	Des Plaines	55.8	59.0	59.6	58.9	60.5	60.7	60.4	59.7	57.1	55.8	56.5	56.7	54.6	58.8	70.0	68.8	60.8
10	Rolling Meadows	53.5	56.7	58.7	55.6	55.9	54.0	54.2	54.6	51.9	50.2	46.6	46.3	52.8	54.4	59.0	60.8	48.9
11	Chicago	54.9	55.5	55.8	54.8	58.4	55.8	54.9	54.3	53.7	51.6	52.1	52.2	52.9	54.9	60.9	60.7	50.3
12	Elk Grove Village	62.4	64.6	61.9	59.3	61.0	57.4	55.9	59.9	60.0	57.8	58.6	58.4	60.4	60.4	66.7	62.1	57.6
13	Elk Grove Village	67.1	67.3	67.3	66.3	68.5	66.0	65.1	65.2	65.5	63.8	62.4	62.9	64.5	66.0	80.0	77.6	64.6
14	Elk Grove Village	60.1	60.3	58.5		60.5	56.8	53.0	57.0	57.4	58.0	58.0	55.5	58.8	58.2	67.6	65.7	54.5
15	Franklin Park	53.5	54.1	54.4	52.4	53.3	52.1	51.7	52.1	52.8	51.2	50.4	51.8	50.3	52.6	64.1	62.6	53.6
16	Franklin Park	61.6	62.2	63.0	64.3	63.1	64.5	63.4	64.6	65.6	66.3	65.1	63.2	62.3	64.1	72.2	72.1	63.4
17	Harwood Heights	63.2	64.6	63.2	63.9	64.3	63.6	62.8	63.6	63.8	62.9	62.2	61.6	62.6	63.4	66.4	65.4	57.9
18	Norridge											57.4	57.7			n/a	n/a	n/a
19	Stone Park	52.6	53.7	54.2	53.6	54.2	54.9	52.5	54.5	56.0	54.9	54.4	53.2	54.4	54.2	64.7	61.7	51.6

<sup>--</sup> Data unavailable.

n/a - Not Applicable

<sup>1.</sup> Red represents an increase of 1 dB or more from the same month of the previous year (6 monitors). Green represents a decrease of 1dB or more from the same month of the previous year (5 monitors).

<sup>2.</sup> Red represents an increase of 1 dB or more from the modeled 1997 noise contour level (0 monitors). Green represents a decrease of 1dB or more from the modeled 1997 noise contour level (16 monitors).

<sup>3.</sup> The following 3 monitor-days were excluded due to high community noise values: Site 1 (20); Site 3 (22); Site 14 (25).

<sup>4.</sup> The following 2 monitor-days were not available due to malfunction: Site 3 (7, 9).

<sup>5.</sup> Data is included for all days where data is collected for greater than 90% of the day.

### Aircraft Noise Report (2 of 2)

Chicago O'Hare International Airport

Period: February 2018 Metric: Aircraft DNL



Site Community				Last 12	Month	s of Mo	nitore	d Noise	Levels	3			Last	12 Month	Modeled	Modeled	Modeled
#	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb <sup>1</sup>	Feb	Average	1997	2000	OMP Build-Out
	17	17	17	17	17	17	17	17	17	17	18	18	17	vs 1997 <sup>2</sup>	Values	Values	Values
20 Mount Prospect	52.5	53.7	53.1	52.2	53.1	52.5	49.5	47.2	52.3	55.8	55.7	56.1	51.4	53.4	63.5	62.4	49.1
21 Mount Prospect	49.1	53.3	52.3	53.4	53.7	50.7	49.9	50.0	54.5	52.3	48.3	49.1	49.6	51.8	59.6	58.6	53.6
22 Norridge	66.0	66.9	66.4	66.2	67.3	66.3	65.4	66.4	65.9	64.5	64.0	63.7	64.6	65.9	69.2	67.7	59.2
23 Northlake	61.3	61.9	62.2	63.8	63.4	65.0	64.0	63.4	63.4	63.8	62.8	62.4	62.0	63.2	73.5	69.1	59.6
24 Park Ridge	54.4	56.5	57.1	53.6	56.6	56.3	54.5	55.4	52.2	49.8	49.3	49.1	50.9	54.5	60.3	58.8	50.6
25 Park Ridge	63.5	64.4	63.9	61.6	63.9	63.7	62.4	63.1	62.8	59.1	60.6	60.4	60.8	62.7	69.1	61.8	66.7
26 Park Ridge	58.8	59.6	59.9	57.5	60.0	58.9	57.0	58.5	58.5	56.0	55.8	55.7	55.8	58.3	64.0	61.2	59.5
27 Rosemont	70.2	70.7	70.6	68.6	70.1	69.6	69.3	69.3	69.3	66.2	67.2	67.9	67.4	69.3	73.0	67.6	70.2
28 Schiller Park	75.3	75.8	75.2	74.8	75.6	74.7	73.7	75.2	75.0	74.3	73.9	73.2	74.0	74.8	79.6	78.7	67.9
29 Wood Dale	67.9	67.8	68.0	66.9	67.8	67.2	67.2	67.4	66.0	64.1	63.7	65.2	64.9	66.8	n/a	n/a	65.1
30 Wood Dale	58.2	58.1	57.7	58.8	58.2	57.9	57.4	57.9	58.7	58.1	57.5	57.4	58.9	58.0	n/a	n/a	58.5
32 Wood Dale	63.7	64.6	64.8	66.6	65.6	66.3	66.0	67.4	66.4	66.1	65.7	65.4	65.4	65.8	71.2	66.4	63.8
33 Park Ridge	61.6	62.5	63.6	63.7	63.5	63.8	62.2	63.8	63.6	62.9	62.4	61.8	61.4	63.0	n/a	n/a	61.9
34 Elk Grove Village	56.9	58.1	58.6	60.8	58.6	59.5	57.5	59.9	59.1	57.9	57.2	57.3	57.7	58.6	66.3	61.2	61.4
35 Unincorporated Cook	57.0	57.5	58.1	58.5	58.5	59.5	57.0	59.1	59.6	58.7	57.6	57.5	57.5	58.3	70.8	65.4	54.7
37 Mount Prospect	47.3	50.4	54.4	52.6	55.9	55.8	55.6	52.0	52.1	46.9	47.6	48.8	46.9	52.7	55.1	57.0	50.5
42 Chicago	58.0	58.7	59.5	59.4	60.0	59.9	59.2	59.9	60.2	58.5	59.4	57.9	57.9	59.3	n/a	n/a	n/a
44 Itasca											60.4	62.3			n/a	n/a	n/a

<sup>--</sup> Data unavailable.

n/a - Not Applicable

<sup>1.</sup> Red represents an increase of 1 dB or more from the same month of the previous year (2 monitors). Green represents a decrease of 1dB or more from the same month of the previous year (2 monitors).

<sup>2.</sup> Red represents an increase of 1 dB or more from the modeled 1997 noise contour level (0 monitors). Green represents a decrease of 1dB or more from the modeled 1997 noise contour level (13 monitors).

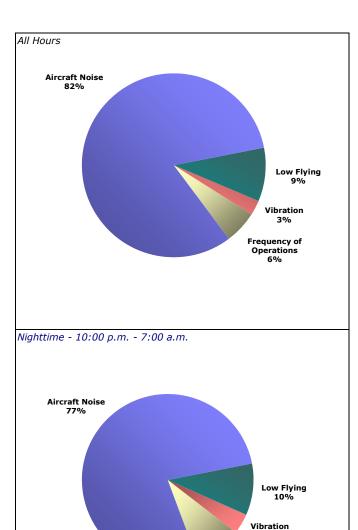
<sup>3.</sup> Data is included for all days where data is collected for greater than 90% of the day.



# Monthly Complaints by Community<sup>1</sup>

Community		Comp	laints	_[	Complainants				
Community	Al	l Hours	Nighttime		All Hours	Nighttime			
Addison		18	2	7	2	1			
Arlington Heights		487	165		3	3			
Bartlett		51	2		1	1			
Bensenville		31 1,756	145		7	3			
	-	•	_						
Berkeley		2	2		2	2			
Bloomingdale		29	2		4	2			
Buffalo Grove		3			1				
Carol Stream		19			2				
Chicago	1	0,689	1,955		631	228			
Ward 38		366	43		16	8			
Ward 39		3,628	570		40	25			
Ward 40		351	51		11	7			
Ward 41	4	4,023	636		74	43			
Ward 45		475	287		20	19			
Ward Other		1,405	263		29	21			
Ward Unknown		441	105		441	105			
Des Plaines		71	11		5	3			
Downers Grove		197	33		2	2			
Elgin		2	1		2	1			
Eigin Elk Grove Village	-    .	2 5,275	625		1,231 <sup>2</sup>	236			
Elmhurst		22	5		1,231	4			
			_						
Evanston	-	1,029	119		1	1			
Frankfort		20			1				
Geneva		1,910	240		1,910³	240			
Gilberts		777	30		1	1			
Glen Ellyn		8	8		1	1			
Glenview		134	48		8	5			
Hampshire		1			1				
Hanover Park		676	70		2	2			
Harwood Heights		58	12		1	1			
Hillside		4	2		1	1			
Inverness		3	2		1	1			
Itasca		64	34		3	2			
Lincolnwood		622	42		4	2			
Lombard		1			1				
Medinah		73	54		3	3			
Mount Prospect		6	2		2	2			
Niles		205	14		3	1			
Norridge		133	101		6	5			
Palatine		4	2		2	2			
Park Ridge	-    -	3,762	383		1,955⁴	23			
Prospect Heights		1			1				
River Forest		1	1		1	1			
Rolling Meadows		1			1				
Roselle		10	1		10	1			
Rosemont		1			1				
Schaumburg		319	43		30	24			
Schiller Park		122	89		6	5			
Skokie		140	20		1	1			
South Barrington		5	2		1	1			
South Elgin		30			1				
St. Charles		4			1				
Unincorporated Cook		135	80		1	1			
Wayne		22	6		1	1			
West Chicago		2			1				
		2 8	3		1				
Western Springs			8			1 8			
Winnetka		69	-		53				
Winnetka		1			1				
Wood Dale	'	4,516	503		1,632	143			
Community Unknown	ᆜᄔ	1		_	1				
February 2018 Total	3	3,499	4,867	7	7,555	966			
Previous Month Total		52,878	58,808		95,409	26,881			

#### **Nature of Noise Complaints**



## **Method of Noise Complaint**

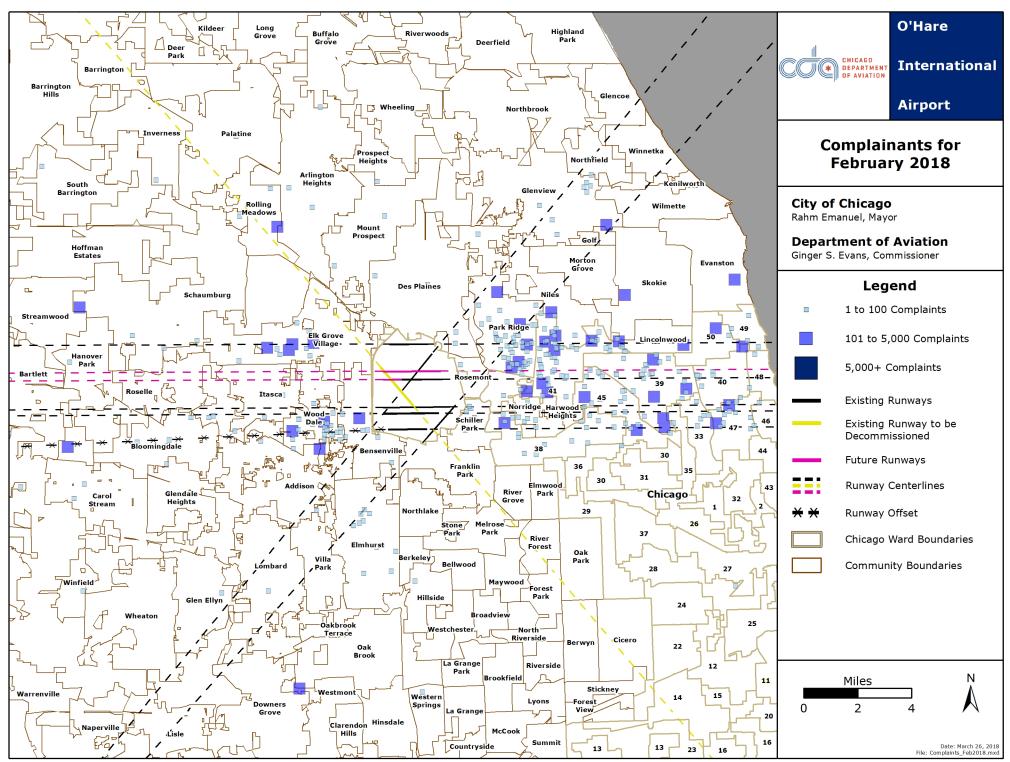
Phone	0.2%
Internet	99.8%
Total	100%

#### Notes:

- 1. Complaints made within the State of Illinois.
- 2. 1,219 of 1,231 complainants in Elk Grove Village are anonymous.

Frequency of Operations 9%

- 3. 1,910 of 1,910 complainants in Geneva are anonymous.
- 4. 1,903 of 1,955 complainants in Park Ridge are anonymous.
- 5. 1,607 of 1,632 complainants in Wood Dale are anonymous.





O'Hare Noise Hotline: 1-800-435-9569 <u>www.flychicago.com/ORDNoise</u>