



Centennial Airport Monthly Noise Report



December 2023 & YTD Statistics

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A-weighted Sound Level – A measure of sound level with weighted frequency characteristics that correspond to human subjective response to noise.

Arrival – The act of an aircraft approaching and landing at an airport.

Ambient Noise Level – The level of noise that is all-encompassing within a given environment for which a single source cannot be determined. It is usually a composite of sounds from many and varied sources near to and far from the noise monitor.

Community Noise Event Level (CNEL) – The average sound level over a 24-hour period, with a penalty of 10dB for nighttime hours between 10:00 PM and 7:00 AM.

Day Night Average Sound Level (DNL) – A measure of the average noise level over a 24-hour day. It is the 24-hour, logarithmic (or energy) average, A-weighted sound pressure level with a 10-decibel penalty applied to the nighttime event levels that occur between 10:00 PM and 7:00 AM.

Decibel (dB) – A logarithmic quantity reflecting the ratio of the sound pressure of the source to a reference pressure. This results in a sound pressure level of about 0 dB for the quietest sounds that we can detect and sound pressure levels of about 120 dB for the loudest sounds that can be heard without pain.

Departure – The act of an aircraft taking flight and leaving the airport.

Energy-Averaged Sound Pressure Level (Leq) – The value or level of a steady, non-fluctuating sound that represents the same sound energy as the actual time-varying sound evaluated over the same time period.

Flight Track – The path along the ground followed by an aircraft in flight.

Instrument Flight Rules (IFR) Rules and regulations established by the FAA to govern flight under conditions in which flight by outside visual reference is not safe. IFR flight depends upon flying by reference to instruments, and navigation is accomplished by reference to electronic signals. It is also a term used by pilots and controllers to indicate the type of flight plan an aircraft is flying, such as an IFR or VFR flight plan.

Local Operations – Operations in the local traffic pattern or within sight of the airport; flight in local practice areas within a 20 mile radius; execute simulated instrument approaches or low airport passes.

Maximum Noise Level (L_{max}) – The peak noise level for a single noise event.

Noise Exposure – The cumulative sound energy affecting a person over a specified period of time.

Overflight – Aircraft flight originating and terminating outside the area that transits the airspace without landing.

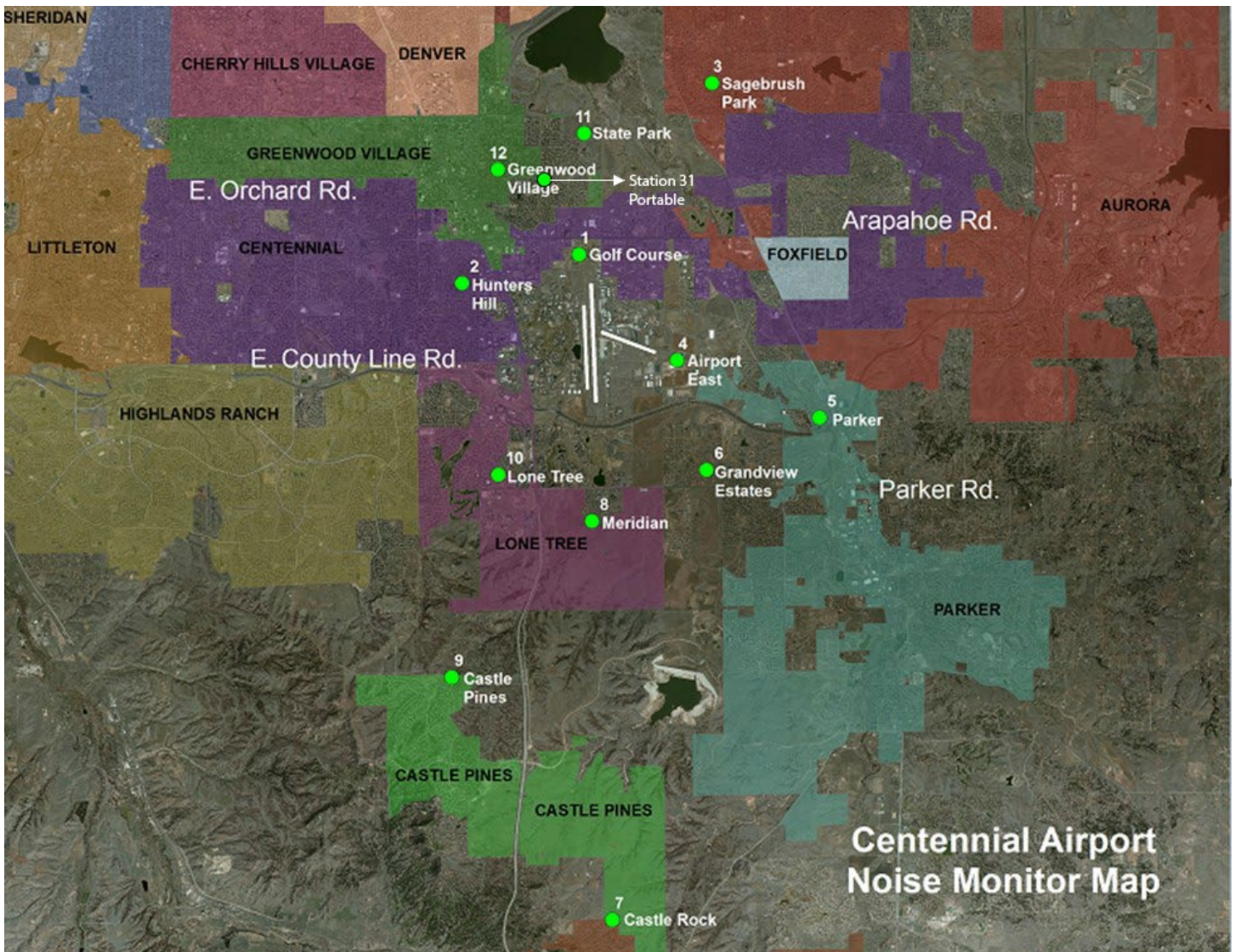
Visual Flight Rules (VFR) – A set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going. A flight plan is not required when the pilot is operating under Visual Flight Rules.

Sound Exposure Level (SEL) – The total energy in the A-weighted sound level measured during a transient noise event. SEL accounts for both the duration and the loudness of a noise event.

Overview

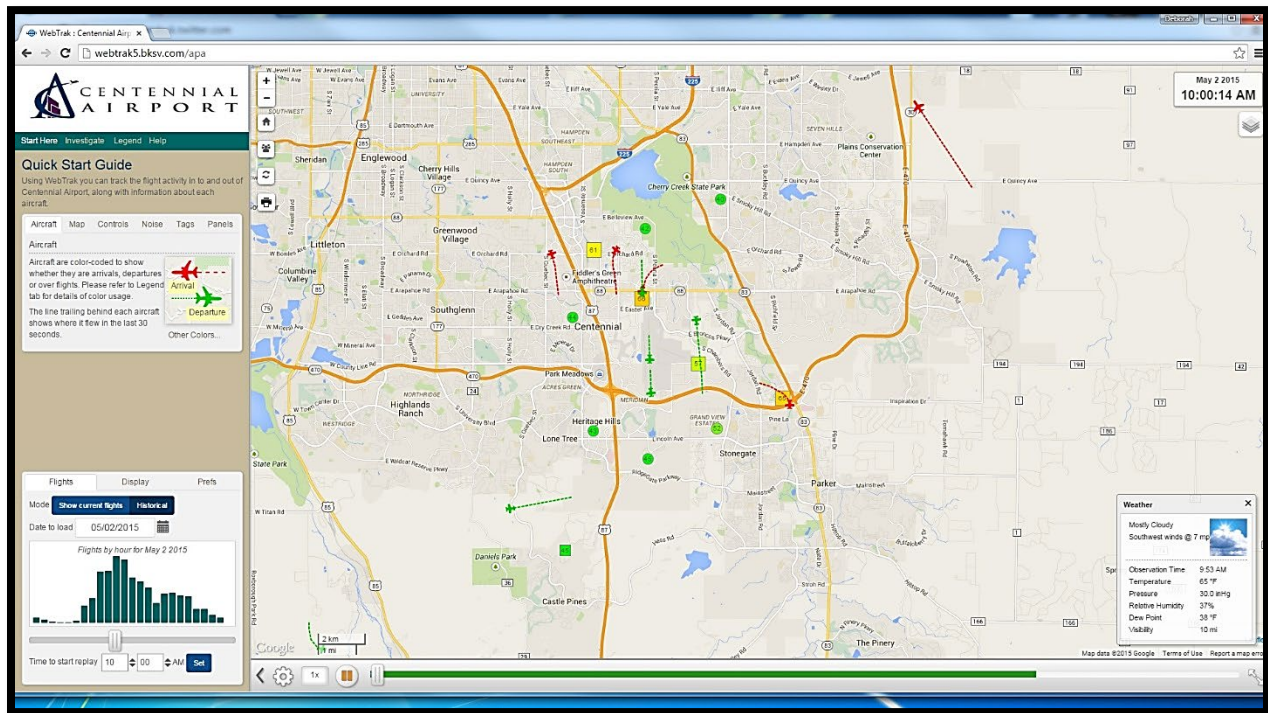
3 ABOUT APA'S NOISE MONITORING PROGRAM

Centennial Airport's (KAPA) Noise and Operations Monitoring System (ANOMS) is a new state of the art system that enables the Arapahoe County Public Airport Authority to monitor and better understand aircraft noise in the vicinity of Centennial Airport. This system is comprised of 12 fixed noise monitoring terminals in the community, as well as 2 portable monitors that are available for short term monitoring anywhere in the community.



4 ABOUT WEBTRAK™

As part of an ongoing program, Centennial Airport now offers an online tracking system for the movement of flights and air traffic patterns within the Denver Metro area. **WebTrak** Flight Tracking and Noise Information System allows concerned individuals to research data about flights to and from Centennial Airport, Denver International Airport, Rocky Mountain Metropolitan Airport, Front Range Airport and Buckley Air Force Base, as well as any transitional air traffic through the region.



How to participate

The general public may use **WebTrak** to investigate a noise or flight that occurred near their location. The system also simplifies the process of filing a noise complaint, offering an easy, online option for residents to register concerns regarding noise levels at the following web addresses:

APA WebTrak:

https://webtrak.emsbk.com/apa?fbclid=IwAR1xnXwQ2sVwisSZ_szUAIHFtyYBNI_ZTACO1PF7ZSH8PPbBxORnnaidUUE

Centennial Airport Website: <http://www.centennialairport.com>

In addition, noise complaints can also be submitted on our noise hotline:

APA Noise Hotline:

303-790-4709

5 OPERATIONS STATISTICS

	IFR ITINERANT				VFR ITINERANT				LOCAL		
	AIR TAXI	G.A.	MILITARY	TOTAL ITINERANT	AIR TAXI	G.A.	MILITARY	TOTAL	G.A.	MILITARY	TOTAL LOCAL
January	2,304	3,055	99	5,458	896	5,213	69	6,178	11,936	25	11,961
February	2,180	2,883	123	5,186	1,046	5,388	85	6,519	12,426	20	12,446
March	2,512	3,260	187	5,959	1,555	5,523	100	7,178	14,989	20	15,009
April	2,152	2,693	144	4,989	1,616	6,550	137	8,303	16,940	40	16,980
May	2,556	3,026	175	5,757	1,542	5,734	116	7,392	17,833	21	17,854
June	2,584	3,338	165	6,087	1,544	6,277	159	7,980	16,101	31	16,132
July	2,524	3,341	189	6,054	1,999	8,004	131	10,134	18,733	53	18,786
August	2,536	3,434	245	6,215	2,283	8,727	118	11,128	21,173	29	21,202
September	2,718	3,332	198	6,248	2,293	8,159	87	10,539	17,465	43	17,508
October	2,655	3,229	202	6,086	2,238	7,472	111	9,821	14,216	44	14,260
November	2,506	2,811	182	5,499	1,911	6,055	109	8,075	15,878	23	15,901
December	2,553	2,845	152	5,550	1,967	5,742	95	7,804	12,471	18	12,489
Y-T-D Totals	29,780	37,247	2,061	69,088	20,890	78,844	1,317	101,051	190,161	367	190,528

	IFR OVERFLIGHTS				VFR OVERFLIGHTS				TOTAL OPERATIONS	
	AIR TAXI	G.A.	MILITARY	TOTAL INTINERANT	AIR TAXI	G.A.	MILITARY	TOTAL		
January	2	4	4	10	43	73	11	127	January	23,734
February	6	4	2	12	31	80	1	112	February	24,275
March	0	0	3	3	24	90	4	118	March	28,267
April	3	5	2	10	37	79	13	129	April	30,411
May	1	5	0	6	32	120	8	160	May	31,169
June	2	9	1	12	29	87	6	122	June	30,333
July	6	12	3	21	28	138	7	173	July	35,168
August	8	12	5	25	32	86	7	125	August	38,695
September	3	4	1	8	53	109	4	166	September	34,469
October	3	8	2	13	35	80	8	123	October	30,303
November	1	7	12	20	31	87	11	129	November	29,624
December	5	6	1	12	42	56	6	104	December	25,959
Y-T-D Totals	40	76	36	152	417	1,085	86	1,588	Y-T-D Totals	362,407

Definitions

Air Taxi – A company that operates aircraft that carry cargo or mail, or passengers on an on demand or charter basis.

General Aviation (G.A.) – All civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire.

Local – Operations are performed by aircraft which operate in the local traffic pattern or within sight of the airport; flight in local practice areas located within a 20-mile radius of the airport; execute simulated instrument approaches or low passes at the airport.

IFR Itinerant – Operations other than local operations conducted under Instrument Flight Rules.

VFR Itinerant – Operations other than local operations conducted under Visual Flight Rules.

Overflight – Operation performed by aircraft that transit the area and did not originate or did not terminate within the airspace.

6 NOISE MONITOR REPORTS

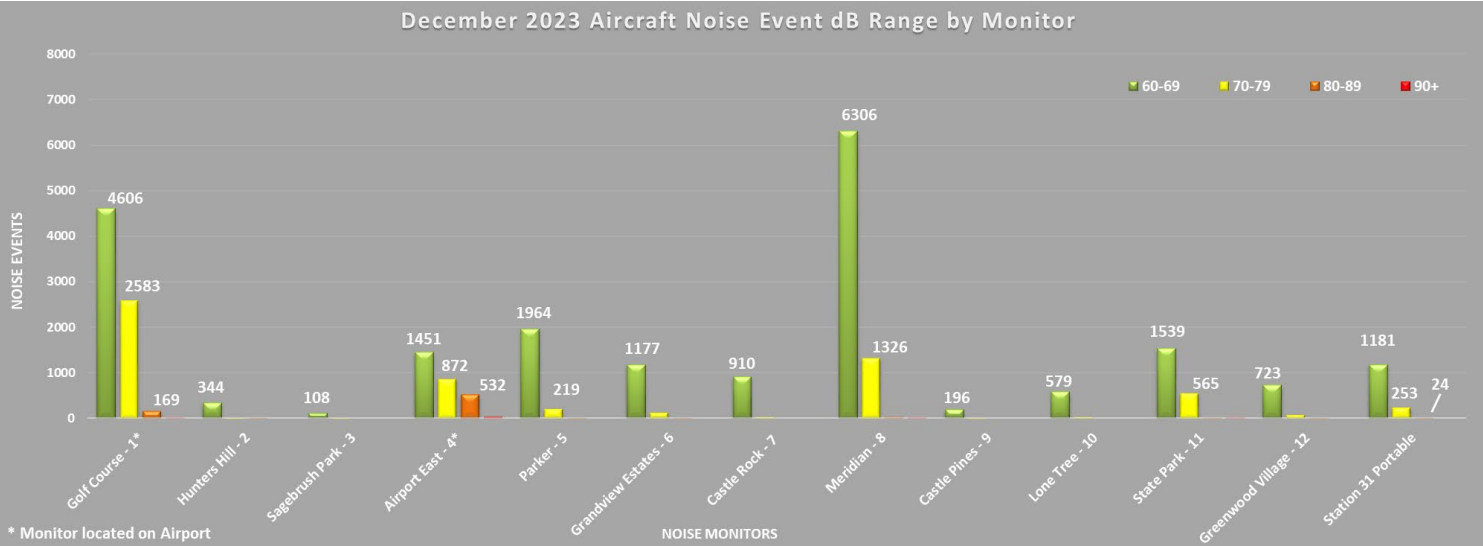
The following data displays the amount and associated decibel level of aircraft noise events at a given monitor. An aircraft noise event must contain the following characteristics:

First, the noise event must exceed the ambient noise level. This number varies at every monitor, but is generally greater than 50-55db. Secondly, the noise event must last longer than 5 seconds. Lastly, using radar data, the system must correlate an aircraft with the noise event. This ensures that the sound is not associated with a 'community noise event' such as a lawn mowers or emergency sirens.

The information below reflects only aircraft noise events as described above.

December 2023 Aircraft Noise Event Decibel Range By Monitor					
Monitor	60-69	70-79	80-89	90+	Totals
Golf Course- 1*	4606	2583	169	5	7363
Hunters Hill- 2	344	22	2	0	368
Sagebrush Park- 3	108	12	0	0	120
Airport East- 4*	1451	872	532	40	2895
Parker- 5	1964	219	5	0	2188
Grandview Estates- 6	1177	135	3	0	1315
Castle Rock- 7	910	38	0	0	948
Meridian- 8	6306	1326	43	3	7678
Castle Pines- 9	196	17	0	0	213
Lone Tree- 10	579	36	0	0	615
State Park- 11	1539	565	4	1	2109
Greenwood Village- 12	723	81	1	0	805
South Metro Station 31 (Portable)	1181	253	24	0	1458
Totals	21084	6159	783	49	28075

*Monitor located on Airport



7 DECEMBER 2023 NOISE COMPLAINT STATISTICS

In December, Centennial Airport received **638** complaints from **42** households.

In 2023, Centennial Airport received **11,798** complaints from **422** households.

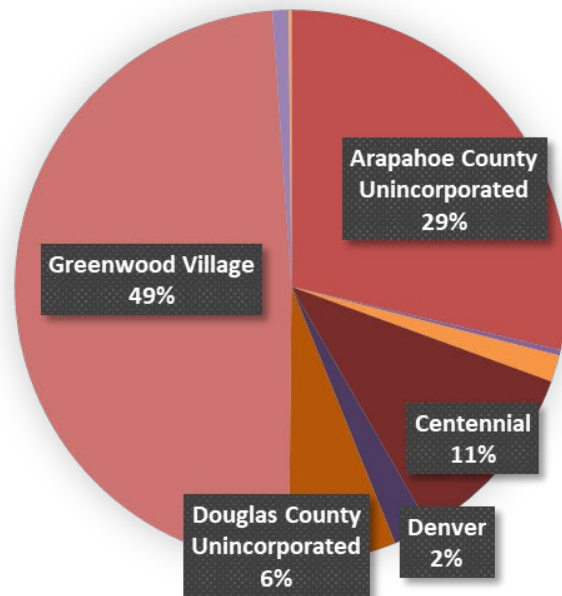
December Noise Complaints			YTD		Population	% of Population that Submitted a Complaint in 2023
Municipality	Complaints	Households	Complaints	Households		=YTD Households / Population
Arapahoe County Unincorporated	183	16	4,461	170	98,066	0.17%
Aurora	2	1	70	11	399,913	0.00%
Castle Pines	0	0	10	5	14,000	0.04%
Castle Rock	10	3	438	10	82,000	0.01%
Centennial	71	2	1,006	23	108,422	0.02%
Cherry Hills Village	0	0	4	1	6,442	0.02%
Denver	14	1	177	4	715,522	0.00%
Douglas County Unincorporated	40	6	487	20	276,493*	0.00%
Greenwood Village	311	9	3,697	100	15,691	0.64%
Highlands Ranch	0	0	51	12	103,444	0.01%
Lone Tree	0	0	51	14	14,253	0.10%
Parker	1	1	1,221	20	68,000	0.03%
Other	6	3	125	32	UNK	UNK
Total	638	42	11,798	422	1,867,296	0.02%

*Douglas County Unincorporated Population with Highlands Ranch Removed

Time Complaint Received	Dec
Day Hours (7:00 am - 9:59pm)	609
Night Hours (10:00 pm - 6:59 am)	29
TOTAL	638

December 2023 Noise Complaint Responses Completed	
Email	20
Phone	4
Total	24

Complaints per Municipality



Current 12 Month Trend



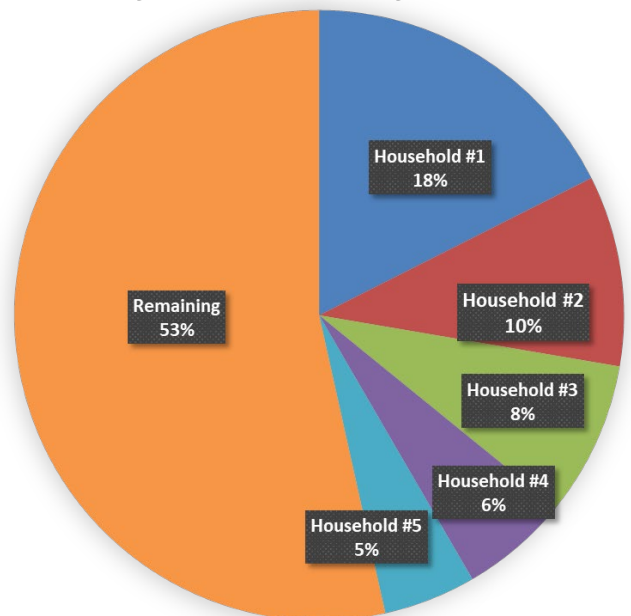
Previous Year 13 Month Trend



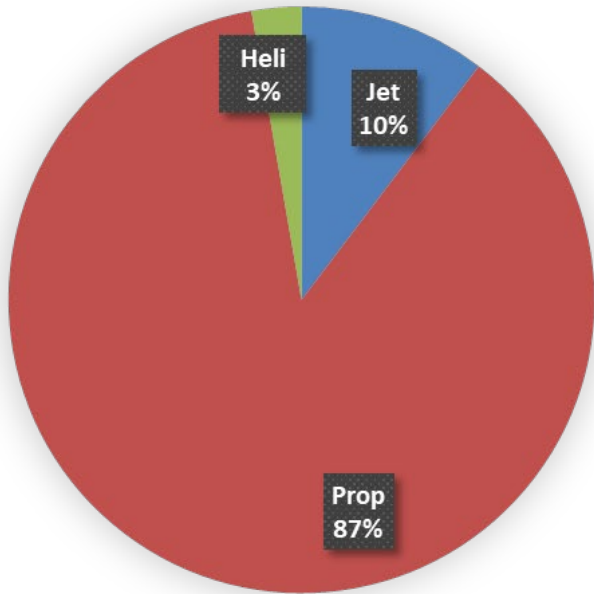
Top 5 Household Complaints YTD

Household	Complaints	Households
Household #1	2,073	Greenwood Village
Household #2	1,193	Parker
Household #3	964	Centennial
Household #4	680	Arapahoe County
Household #5	578	Arapahoe County
Remaining	6,310	
Total	11,798	

Top 5 Household Complaints YTD

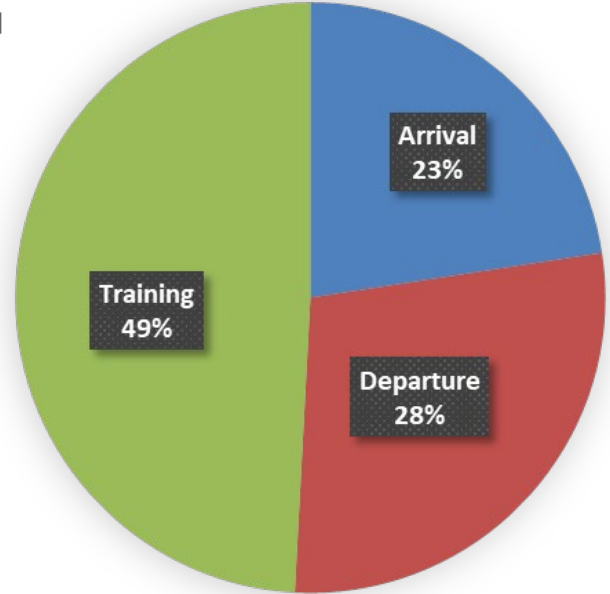


Complaints by Aircraft Type

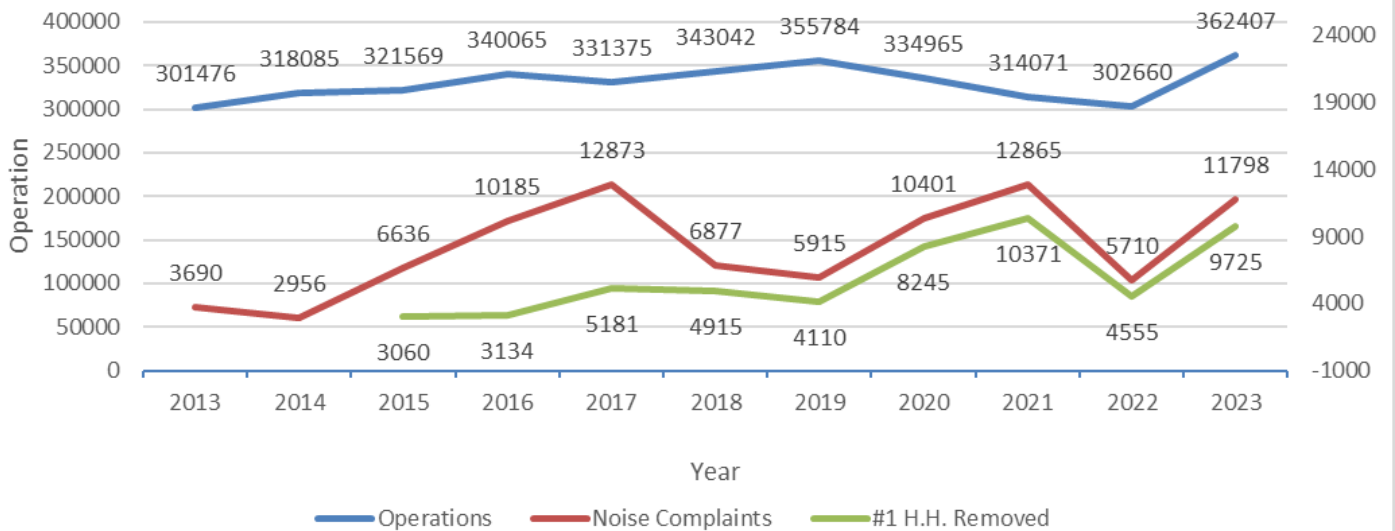


*#1 Household Removed

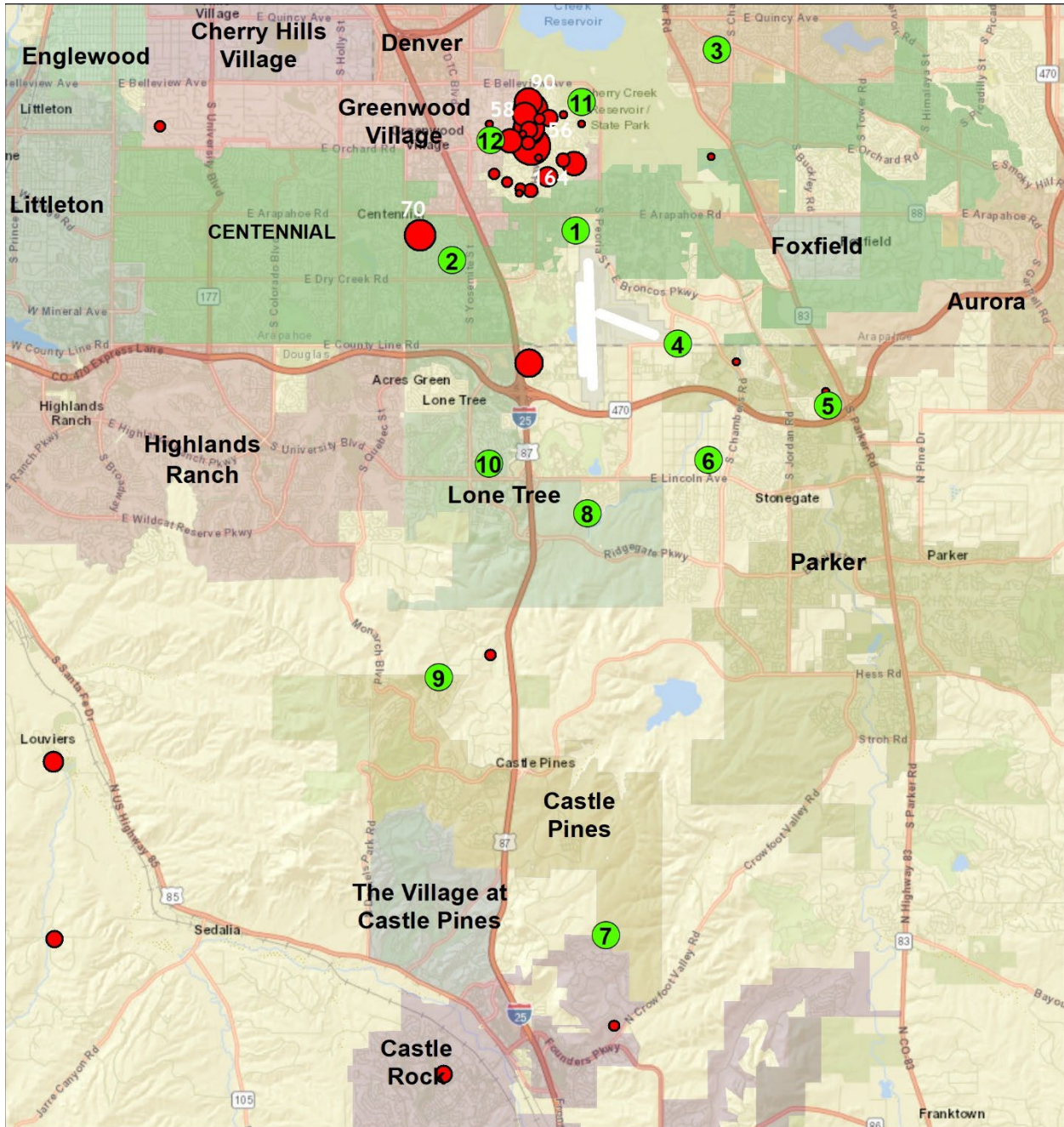
Complaints by Operation Type



10 Year Operations vs. Complaints 2013-2023



8 CENTENNIAL AIRPORT COMPLAINT MAP



December 2023 Complaints

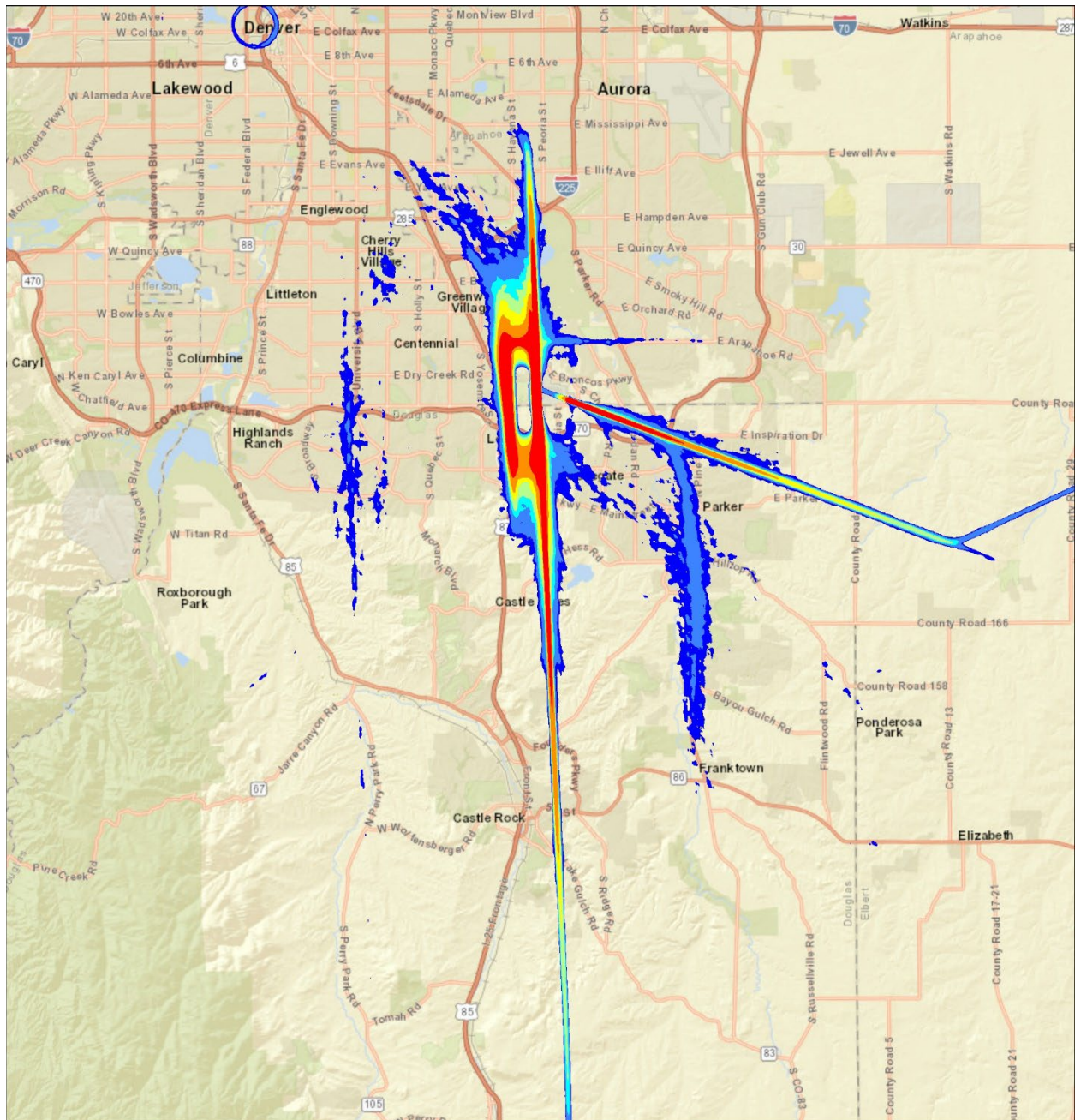


*Larger dots equate to more complaints for that particular households

9 CENTENNIAL AIRPORT RADAR TRACK DENSITY MAP

The following maps take all of the flight track data for the given time period and create a line density plot. This enables everyone to have a better understanding of where the flight tracks are at, while allowing for historical comparisons. Dark red in the middle of the picture shows the highest density of flight tracks over the runways. The colors gradually move out to blue as the least dense.

December 2023 Flight Tracks associated with Centennial Airport



10 NOTES AND DISCLAIMER

This report is for informational use only. Every effort has been made to ensure the accuracy of this data; however, the material may be altered as new information is added or updated in the system.

Centennial Airport disclaims any responsibility or liability for any direct or indirect damages resulting from the use of this data. We hope this information provides you with a valuable tool in which to review noise data and characteristics in your area. If you have questions or concerns, please contact the Centennial Airport Noise office at **303-790-0598**.



Noise Hotline: 303-790-4709

www.centennialairport.com