



Centennial Airport Monthly Noise Report



18. December 2022 & YTD

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1 Definitions

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.

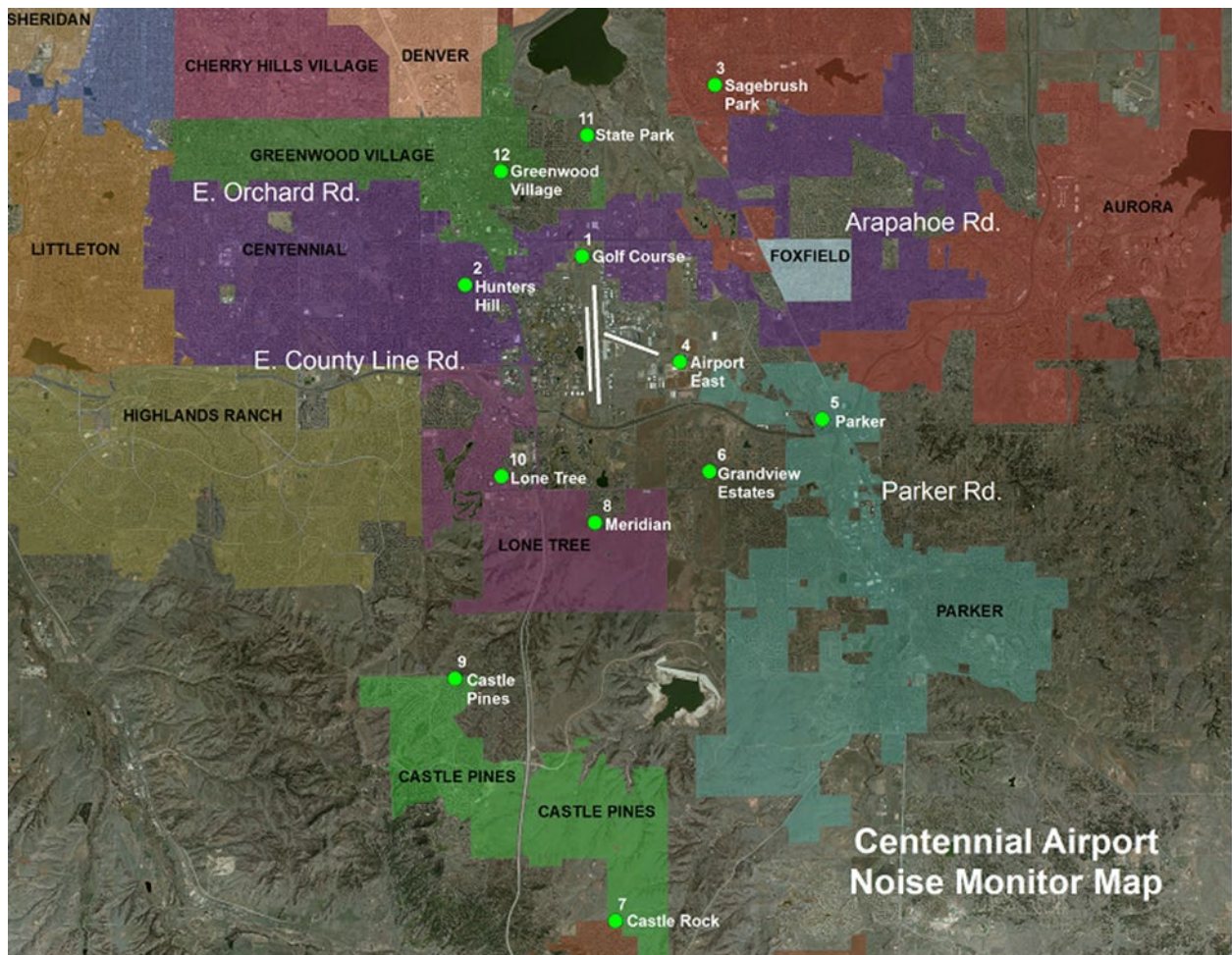
Visual Flight Rules (VFR) – A set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going. A flight plan is not required when the pilot is operating under Visual Flight Rules.

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

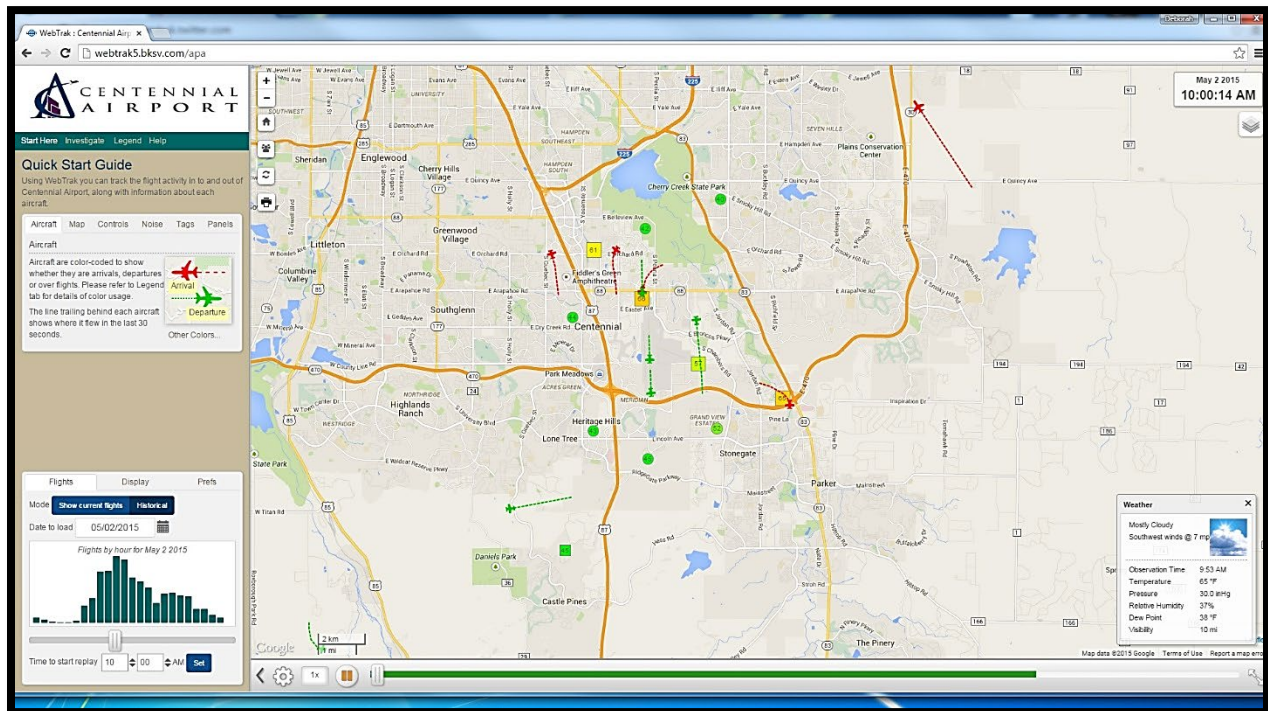
3 ABOUT APA'S NOISE MONITORING PROGRAM

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_ZTACOI1PF7ZSH8PPbBxORnnaidUUE

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 ININERANT				LOCAL		
	AIR TAXI	G.A.	MILITARY	TOTAL INTINERANT	AIR TAXI	G.A.	MILITARY	TOTAL	G.A.	MILITARY	TOTAL LOCAL
January	2,494	3,405	114	6,013	1,133	5,391	88	6,612	9,190	78	9,268
February	2,396	3,396	98	5,890	1,247	5,624	105	6,976	9,863	38	9,901
March	2,741	4,129	170	7,040	1,330	5,922	90	7,342	10,435	50	10,485
April	2,425	3,440	191	6,056	1,220	5,502	106	6,828	10,611	35	10,646
May	2,655	3,439	235	6,329	1,315	5,930	134	7,379	12,556	18	12,574
June	2,660	3,881	190	6,731	1,227	6,808	158	8,193	10,608	71	10,679
July	2,552	4,039	169	6,760	1,172	7,545	126	8,843	15,221	46	15,267
August	2,726	3,985	176	6,887	1,113	7,567	183	8,863	14,500	43	14,543
September	2,710	3,892	143	6,745	989	7,207	129	8,325	3,531	16	3,547
October	2,772	3,586	181	6,539	1,163	7,793	156	9,112	14,076	27	14,103
November	2,445	3,076	94	5,615	926	5,692	99	6,717	9,692	21	9,713
December	2,659	3,258	97	6,014	954	5,627	94	6,675	11,274	26	11,300
Y-T-D Totals	31,235	43,526	1,858	76,619	13,789	76,608	1,468	91,865	131,557	469	132,026

	IFR OVERFLIGHTS				VFR OVERFLIGHTS					TOTAL OPERATIONS
	AIR TAXI	G.A.	MILITARY	TOTAL INTINERANT	AIR TAXI	G.A.	MILITARY	TOTAL		
January	2	2	1	5	41	98	11	150	January	22,048
February	1	2	0	3	38	132	17	187	February	22,957
March	4	4	1	9	46	115	11	172	March	25,048
April	6	7	1	14	38	144	11	193	April	23,737
May	2	6	0	8	47	156	6	209	May	26,499
June	1	9	1	11	47	132	7	186	June	25,800
July	3	5	3	11	38	159	11	208	July	31,089
August	1	3	0	4	36	97	25	158	August	30,455
September	3	5	2	10	54	119	9	182	September	18,809
October	1	8	2	11	44	104	13	161	October	29,926
November	3	8	0	11	32	73	8	113	November	22,169
December	0	7	2	9	29	91	5	125	December	24,123
Y-T-D Totals	27	66	13	106	490	1,420	134	2,044	Y-T-D Totals	302,660

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:

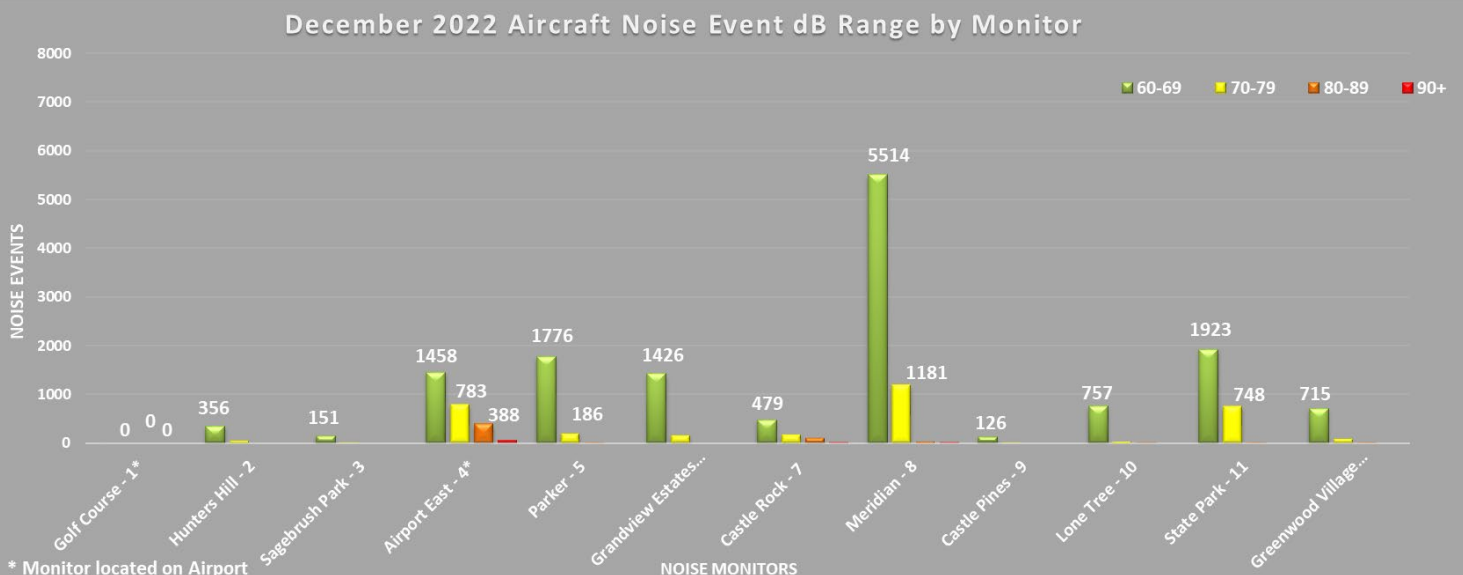
First, the noise event must exceed the ambient noise level. This number varies at every monitor, but is generally greater than 50-55db. Secondly, the noise event must last longer than 5 seconds. Lastly, using radar data, the system must correlate an aircraft with the noise event. This ensures that the 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 2022 Aircraft Noise Event Decibel Range By Monitor					
Monitor	60-69	70-79	80-89	90+	Totals
Golf Course- 1*	0	0	0	0	0
Hunters Hill- 2	356	42	0	0	398
Sagebrush Park- 3	151	14	0	0	165
Airport East- 4*	1458	783	388	49	2678
Parker- 5	1776	186	3	0	1965
Grandview Estates- 6	1426	154	0	0	1580
Castle Rock- 7	479	168	103	14	764
Meridian- 8	5514	1181	38	3	6736
Castle Pines- 9	126	8	0	0	134
Lone Tree- 10	757	32	1	0	790
State Park- 11	1923	748	10	0	2681
Greenwood Village- 12	715	84	3	0	802
Totals	14681	3400	546	66	18693

NMT 1 missing data due to battery damage

*Monitor located on Airport



7 DECEMBER 2022 NOISE COMPLAINT STATISTICS

In December, Centennial Airport received 590 complaints from 45 households.

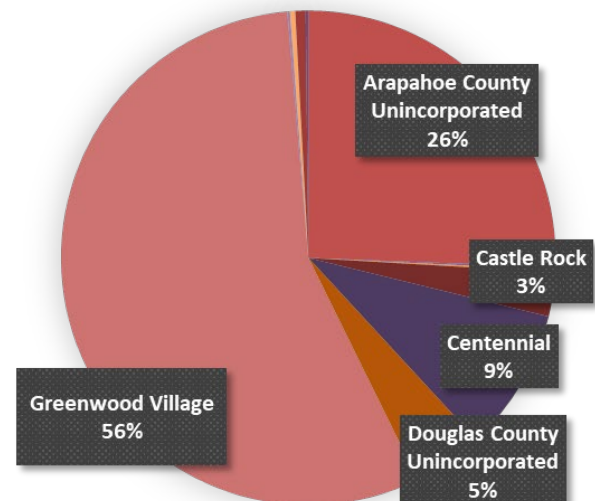
In 2022, Centennial Airport received 5,710 complaints from 160 households.

December Noise Complaints			YTD		Population
Municipality	Complaints	Households	Complaints	Households	Census 2018
Arapahoe County Unincorporated	151	16	1211	74	83,764
Aurora	1	1	139	7	374,114
Castle Pines	1	1	21	4	10,507
Castle Rock	17	2	641	6	64,827
Centennial	55	2	1278	12	110,831
Cherry Hills Village	0	0	2	1	6,650
Denver	0	0	34	10	716,492
Douglas County Unincorporated	27	2	292	22	100,536*
Greenwood Village	330	15	1709	50	15,801
Highlands Ranch	1	1	79	5	105,264
Lone Tree	2	2	52	17	14,653
Parker	1	1	30	8	55,636
Other	4	2	222	27	UNK
Total	590	45	5710	243	1,659,075

*Douglas County Unincorporated Population with Highlands Ranch Removed

Time Complaint Received	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	2022 YTD
Day Hours (7:00 am - 9:59pm)	312	361	474	289	484	458	611	574	373	411	468	554	5,369
Night Hours (10:00 pm - 6:59 am)	11	10	43	6	28	44	30	44	23	29	37	36	341
TOTAL	323	371	517	295	512	502	641	618	396	440	505	590	5,710

Complaints per Municipality



December 2022 Noise Complaint Responses Completed	
Email	36
Phone	10
Total	46

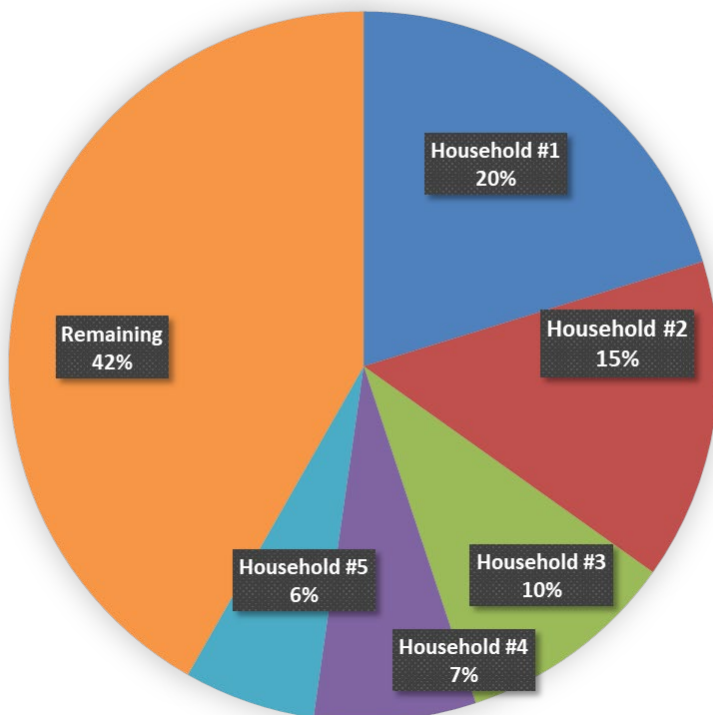
Current 12 Month Trend



Previous Year 13 Month Trend

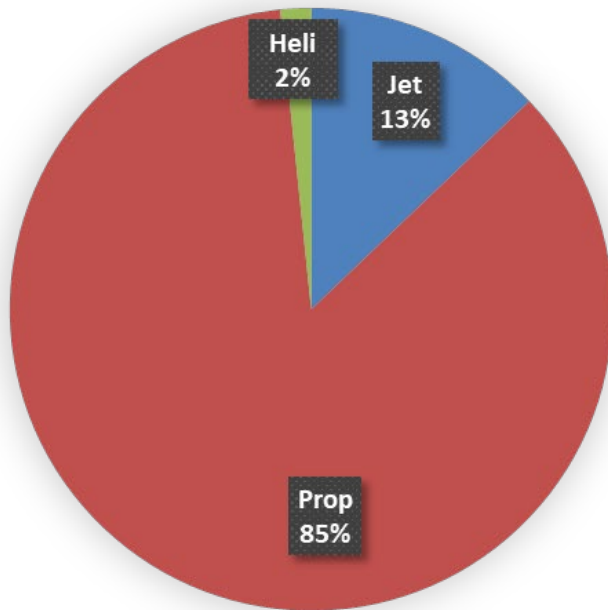


Top 5 Household Complaints YTD

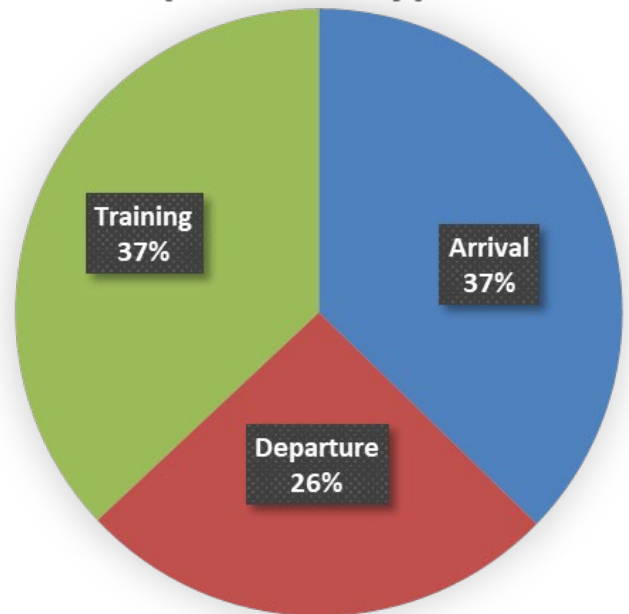


Top 5 Household Complaints YTD		
Household	Complaints	Households
Household #1	1,155	Centennial
Household #2	835	Greenwood Village
Household #3	573	Castle Rock
Household #4	421	Arapahoe County Unincorporated
Household #5	342	Greenwood Village
Remaining	2,384	
Total	5,710	

Complaints by Aircraft Type

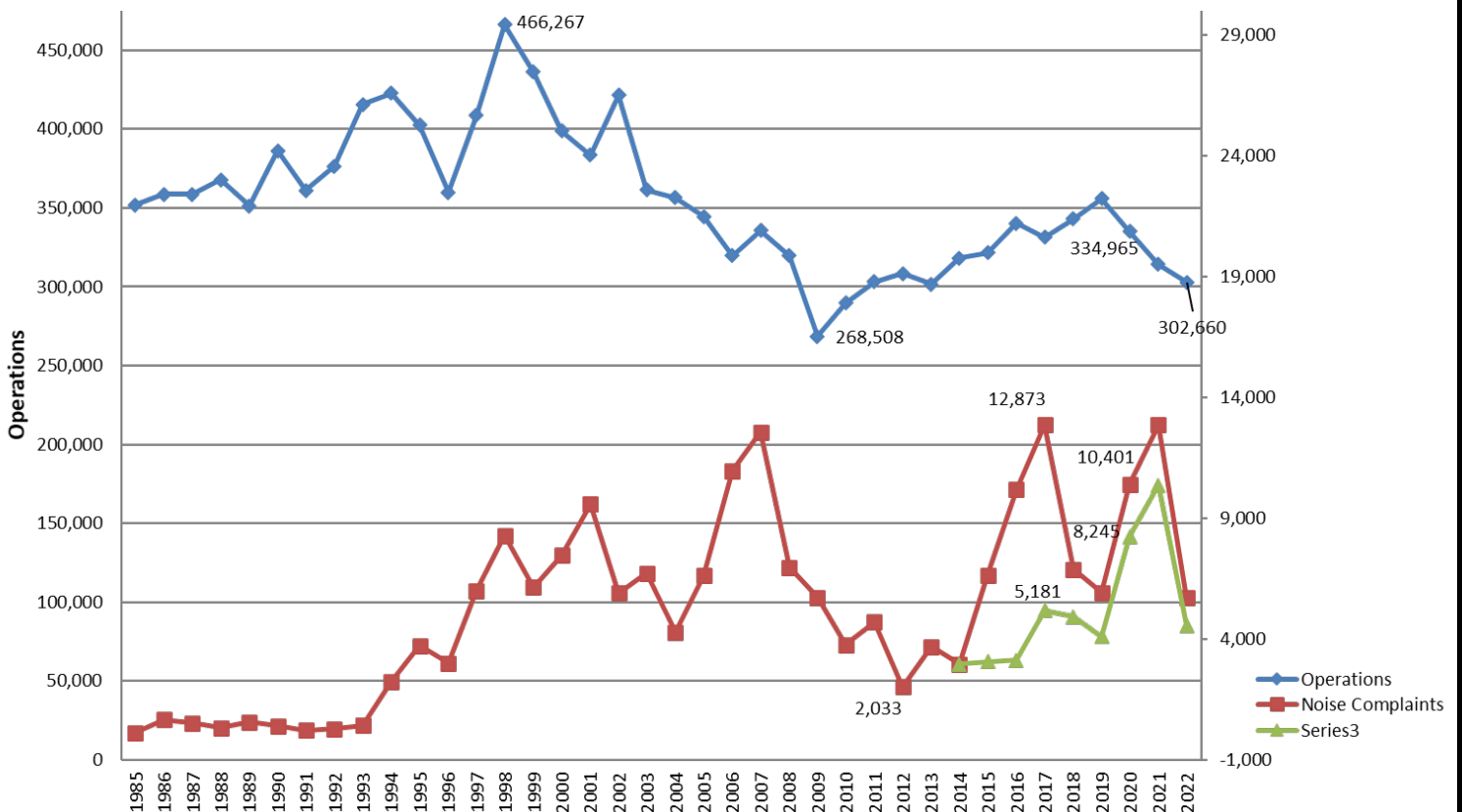


Complaints by Operation Type

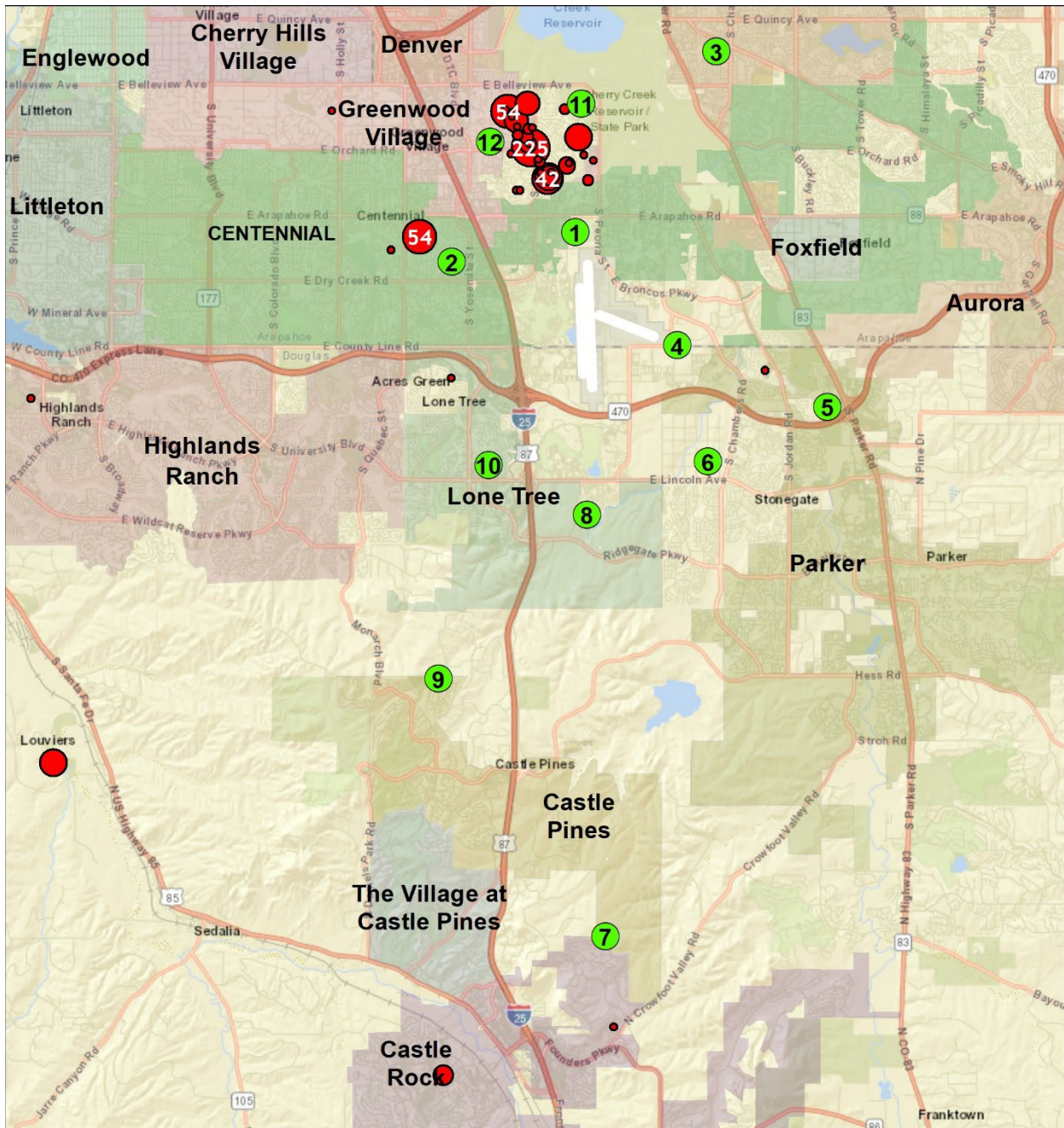


*#1 Household Removed

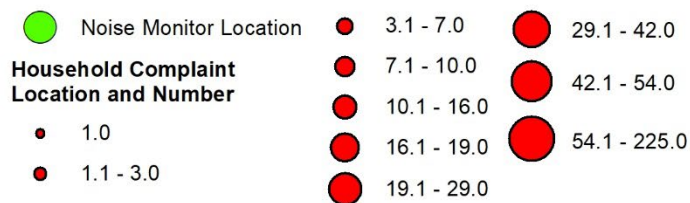
Previous 38 Year Operations Vs. Noise Complaints 1985-2022



8 CENTENNIAL AIRPORT COMPLAINT MAP



December 2022 Complaints

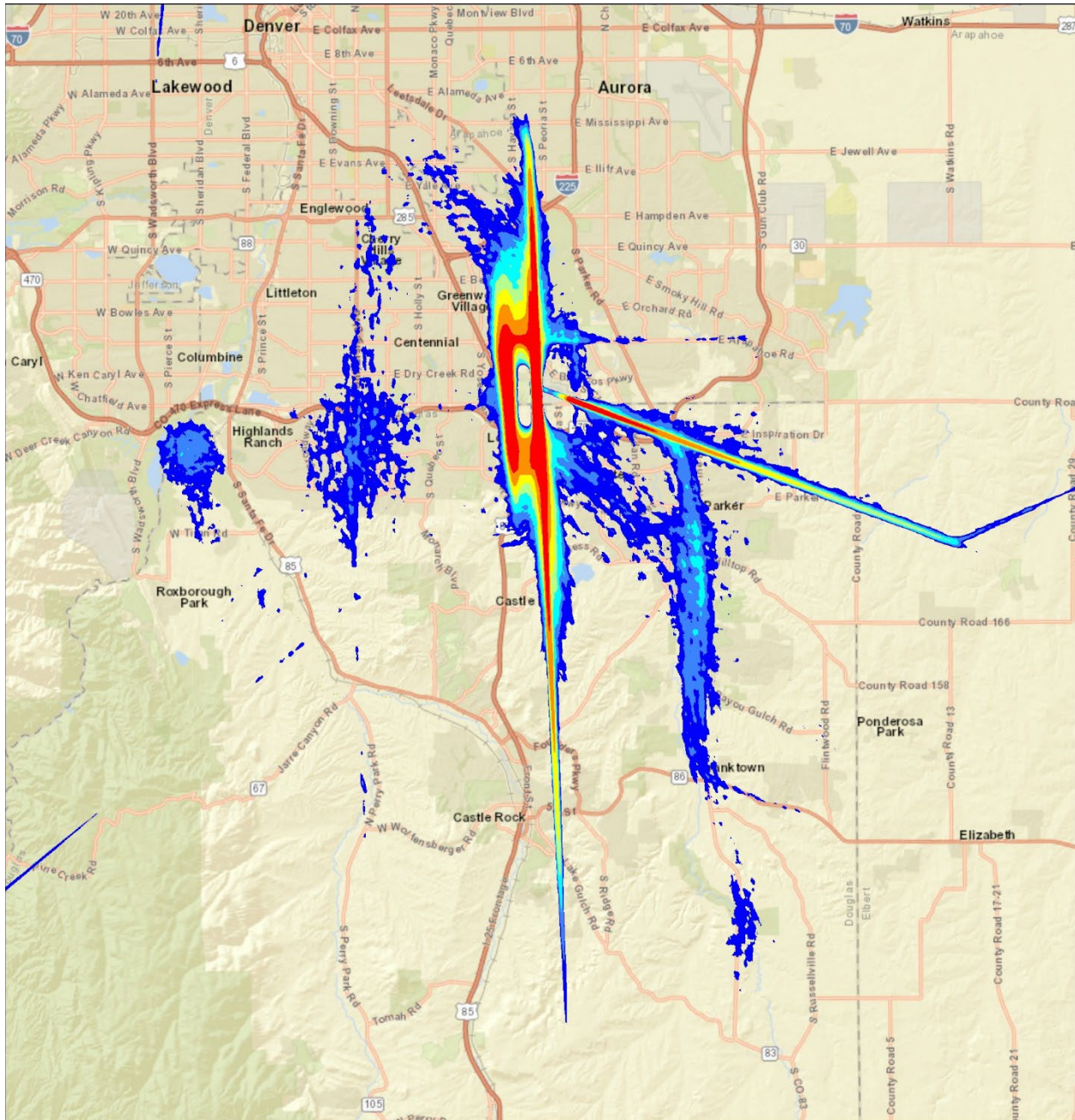


*Larger dots equate to more complaints for that particular households

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 2022 Flight Tracks associated with Centennial Airport



Lower Density Traffic

Higher Density Traffic

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