



Centennial Airport Monthly Noise Report



March 2020

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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.

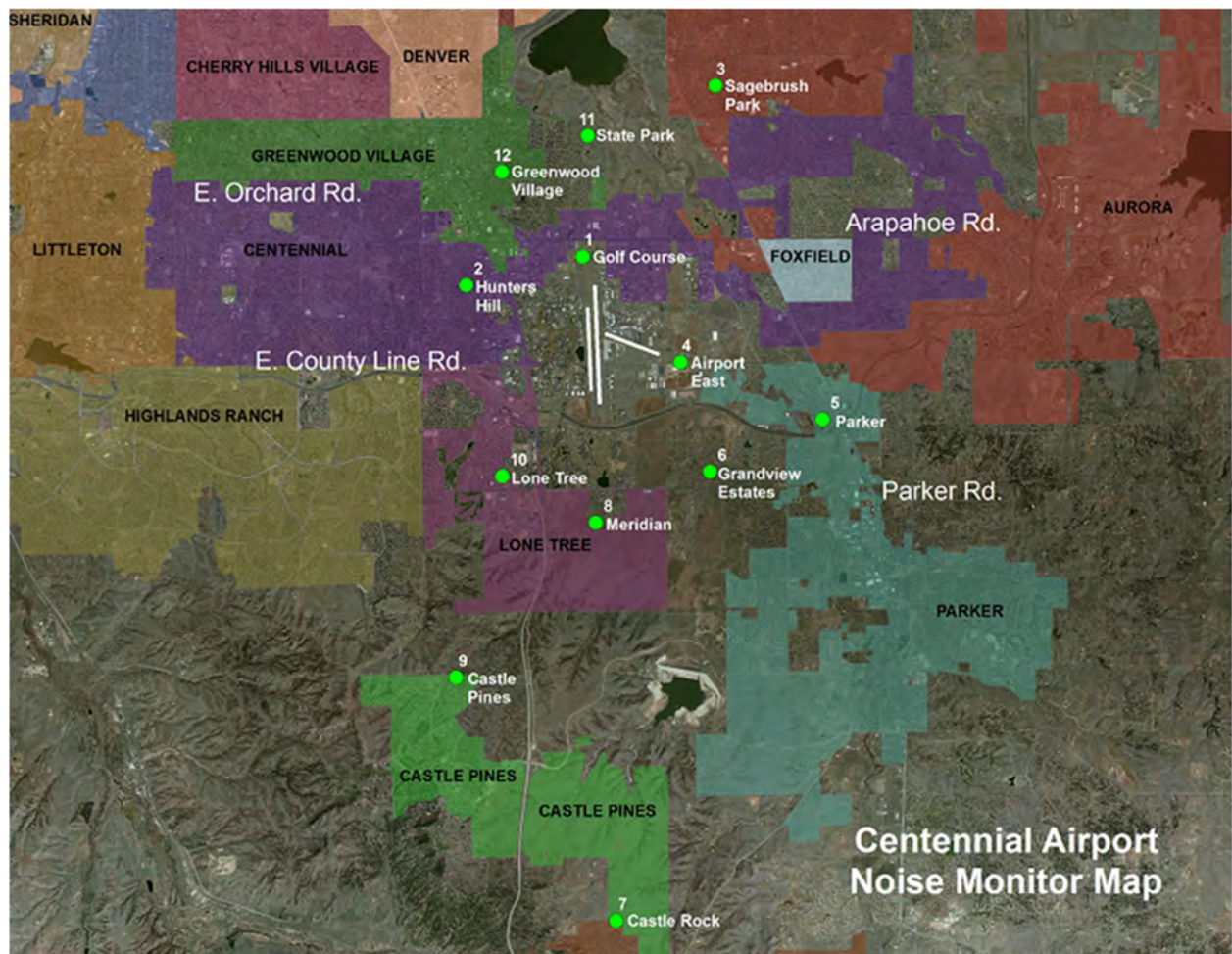
Visual Flight Rules (VFR) – A set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going. A flight plan is not required when the pilot is operating under Visual Flight Rules.

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

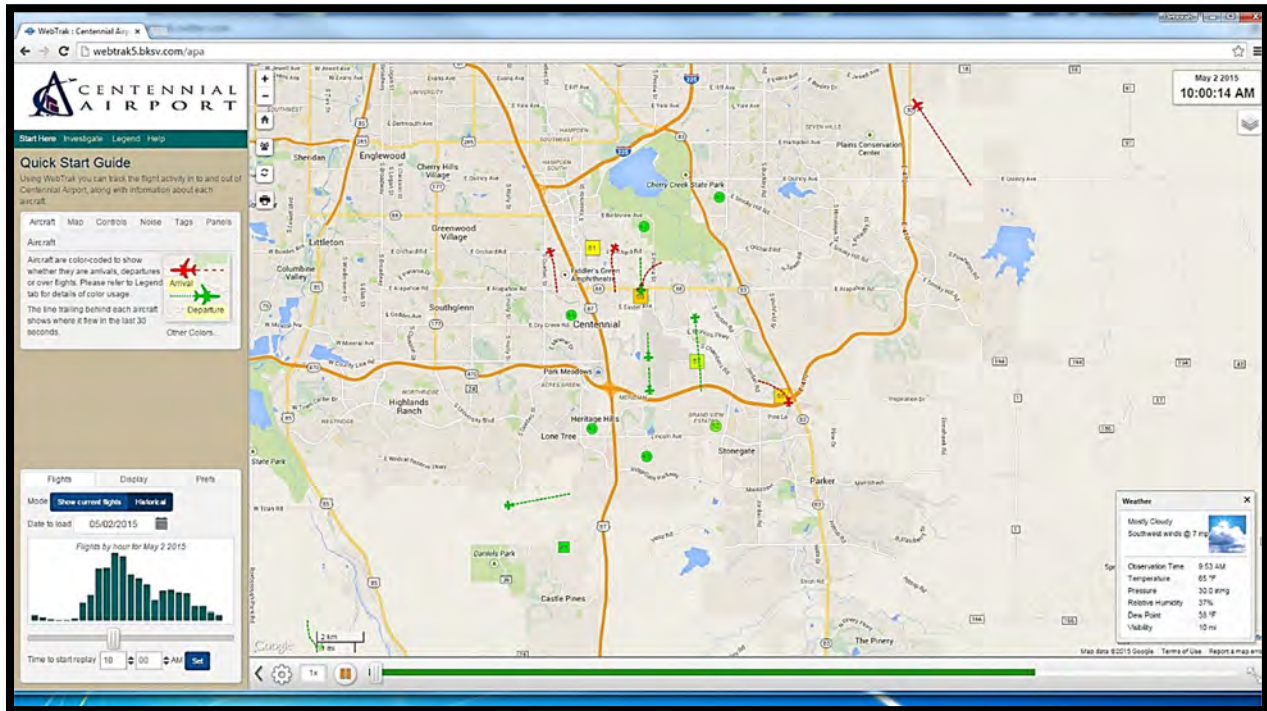
3 ABOUT APA'S NOISE MONITORING PROGRAM

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://complaint-us.emsbk.com/apa7>

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	2,258	3,326	173	5,757	528	8,585	116	9,229	14,386	52	14,438
February	2,280	2,969	109	5,358	384	6,097	99	6,580	10,383	61	10,444
March	1,896	2,457	83	4,436	359	6,933	90	7,382	14,465	35	14,500
April				0				0			0
May				0				0			0
June				0				0			0
July				0				0			0
August				0				0			0
September				0				0			0
October				0				0			0
November				0				0			0
December				0				0			0
Y-T-D Totals	6,434	8,752	365	15,551	1,271	21,615	305	23,191	39,234	148	39,382

	IFR OVERFLIGHTS				VFR OVERFLIGHTS				TOTAL OPERATIONS	
	AIR TAXI	G.A.	MILITARY	TOTAL INTINERANT	AIR TAXI	G.A.	MILITARY	TOTAL		
January	7	13	2	22	97	390	7	494	January	29,940
February	2	4	0	6	53	266	1	320	February	22,708
March	1	9	2	12	52	214	6	272	March	26,602
April				0				0	April	
May				0				0	May	
June				0				0	June	
July				0				0	July	
August				0				0	August	
September				0				0	September	
October				0				0	October	
November				0				0	November	
December				0				0	December	
Y-T-D Totals	10	26	4	40	202	870	14	1,086	Y-T-D Totals	79,250

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

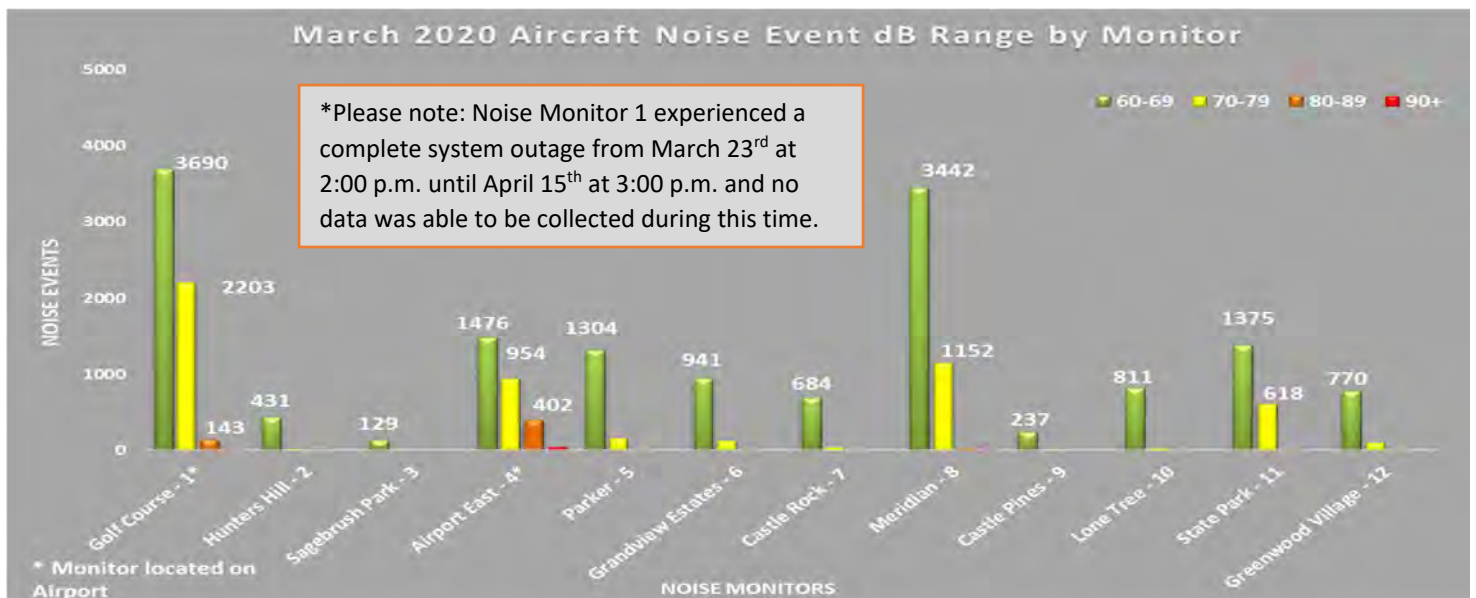
The following data displays the amount and associated decibel level of aircraft noise events at a given monitor. An aircraft noise event must contain the following characteristics:

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.

March 2020 Aircraft Noise Event Decibel Range By Monitor					
Monitor	60-69	70-79	80-89	90+	Totals
Golf Course - 1*	3690	2203	143	4	6040
Hunters Hill - 2	431	29	2	0	462
Sagebrush Park - 3	129	15	0	0	144
Airport East - 4*	1476	954	402	43	2875
Parker - 5	1304	160	5	0	1469
Grandview Estates - 6	941	131	5	0	1077
Castle Rock - 7	684	43	1	0	728
Meridian - 8	3442	1152	40	4	4638
Castle Pines - 9	237	16	0	0	253
Lone Tree - 10	811	41	3	0	855
State Park - 11	1375	618	21	0	2014
Greenwood Village - 12	770	115	1	0	886
Totals	15290	5477	623	51	21441

*Monitor located on Airport



7 MARCH 2020 NOISE COMPLAINTS

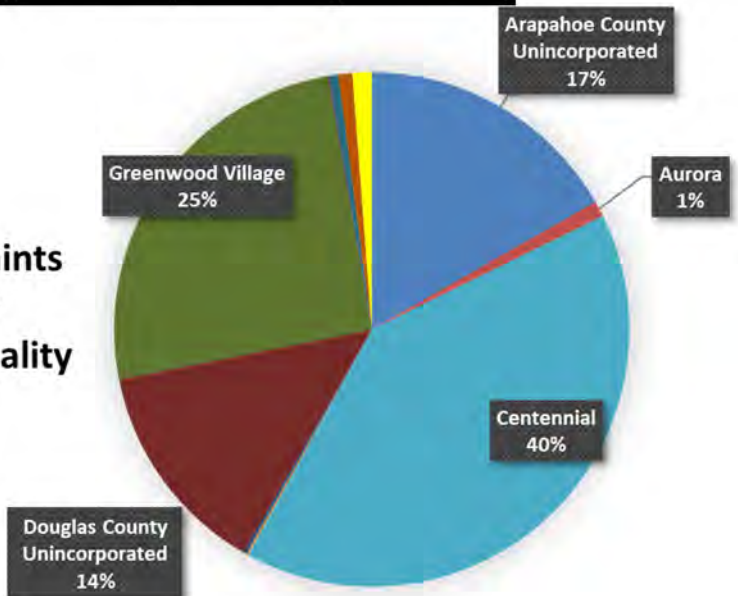
In March, Centennial Airport received 914 complaints from 41 households.

March Noise Complaints			YTD		Population
Municipality	Complaints	Households	Complaints	Households	Census 2018
Arapahoe County Unincorporated	153	11	317	17	83,764
Aurora	9	1	65	2	374,114
Castle Pines	0	0	2	2	10,507
Castle Rock	0	0	0	0	64,827
Centennial	368	4	894	5	110,831
Cherry Hills Village	1	1	2	2	6,650
Denver	2	1	3	2	716,492
Douglas County Unincorporated	124	6	273	9	100,536*
Greenwood Village	232	9	747	16	15,801
Highlands Ranch	1	1	2	2	105,264
Lone Tree	5	2	14	5	14,653
Parker	11	1	69	3	55,636
Other	8	4	24	6	UNK
Total	914	41	2412	71	1,659,075

*Douglas County Unincorporated Population with Highlands Ranch Removed

Noise Complaints Response Requested	
Email	8
Phone	13
Total	21

Complaints per Municipality

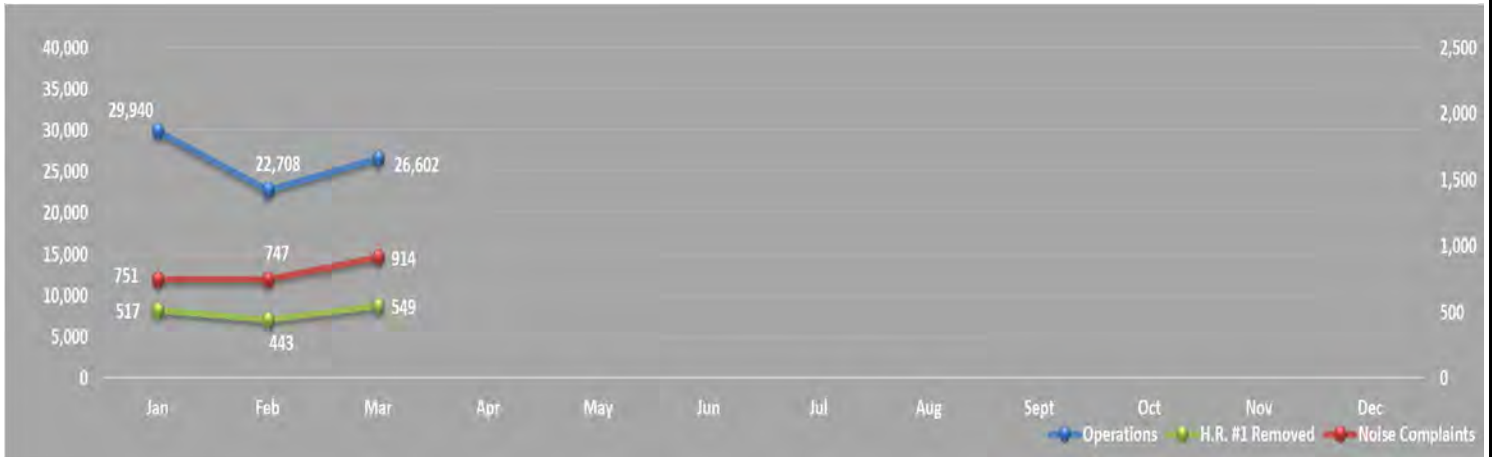


Time Complaint Received	Jan	Feb	Mar
Day Hours (7:00 am - 9:59pm)	700	700	865
Night Hours (10:00 pm - 6:59 am)	51	47	49
TOTAL	751*	747*	914

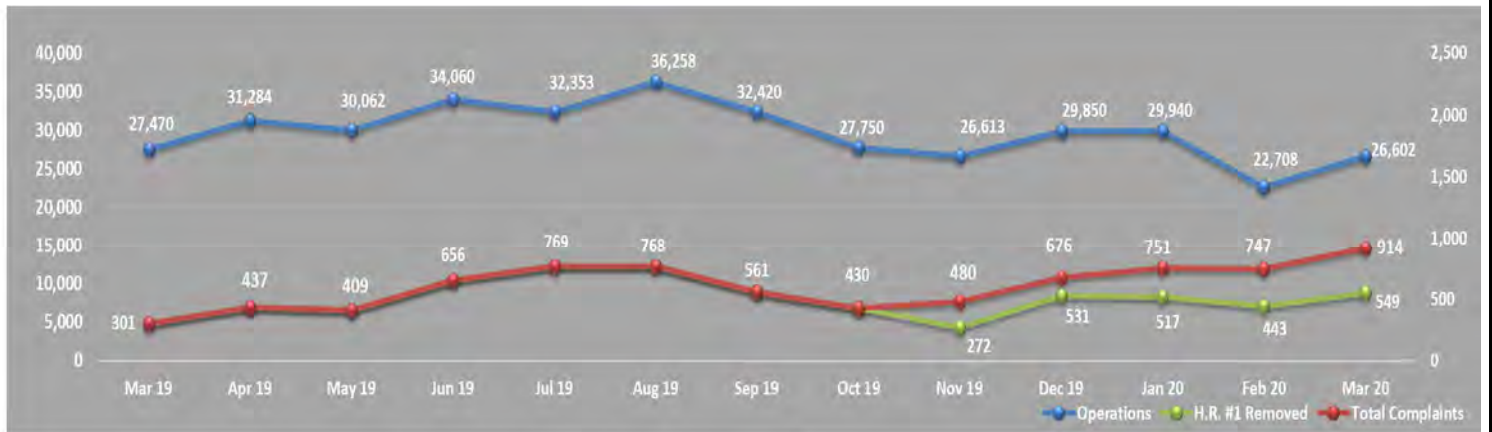
*Retroactively received 12 additional complaints from Greenwood Village in January

* 52 web complaints in February did not process into system and needed to be manually entered

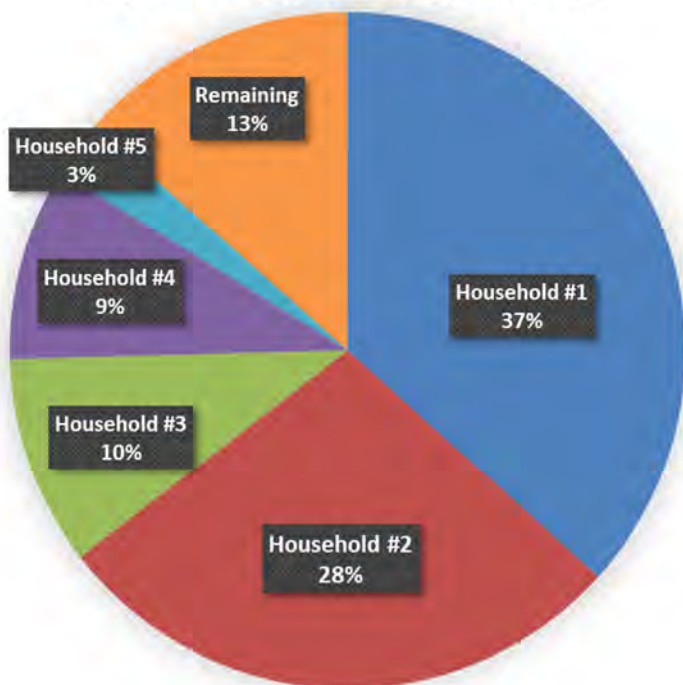
Current 12 Month Trend



Previous Year 13 Month Trend



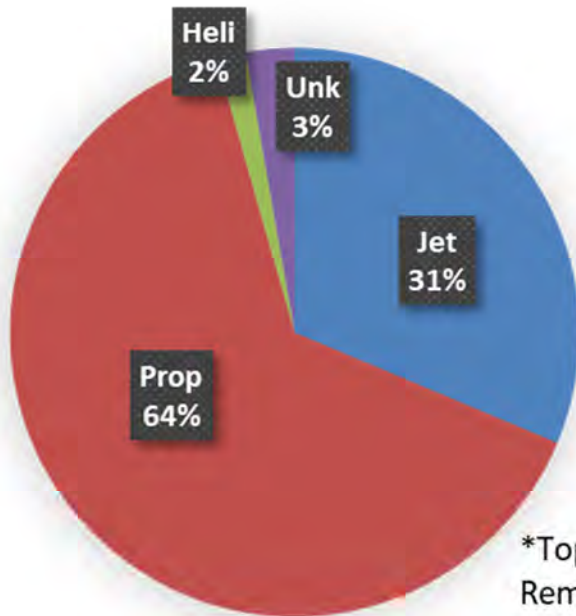
Top 5 Household Complaints YTD



Top 5 Household Complaints YTD

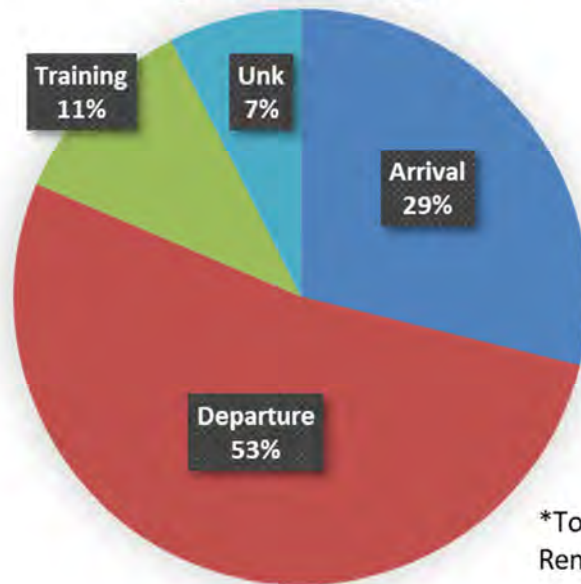
Household	Complaints	Households
Household #1	885	Centennial
Household #2	671	Greenwood Village
Household #3	243	Douglas County Unincorporated
Household #4	224	Arapahoe County Unincorporated
Household #5	65	Parker
Remaining		324
Total		2,412

Complaints by Aircraft Type



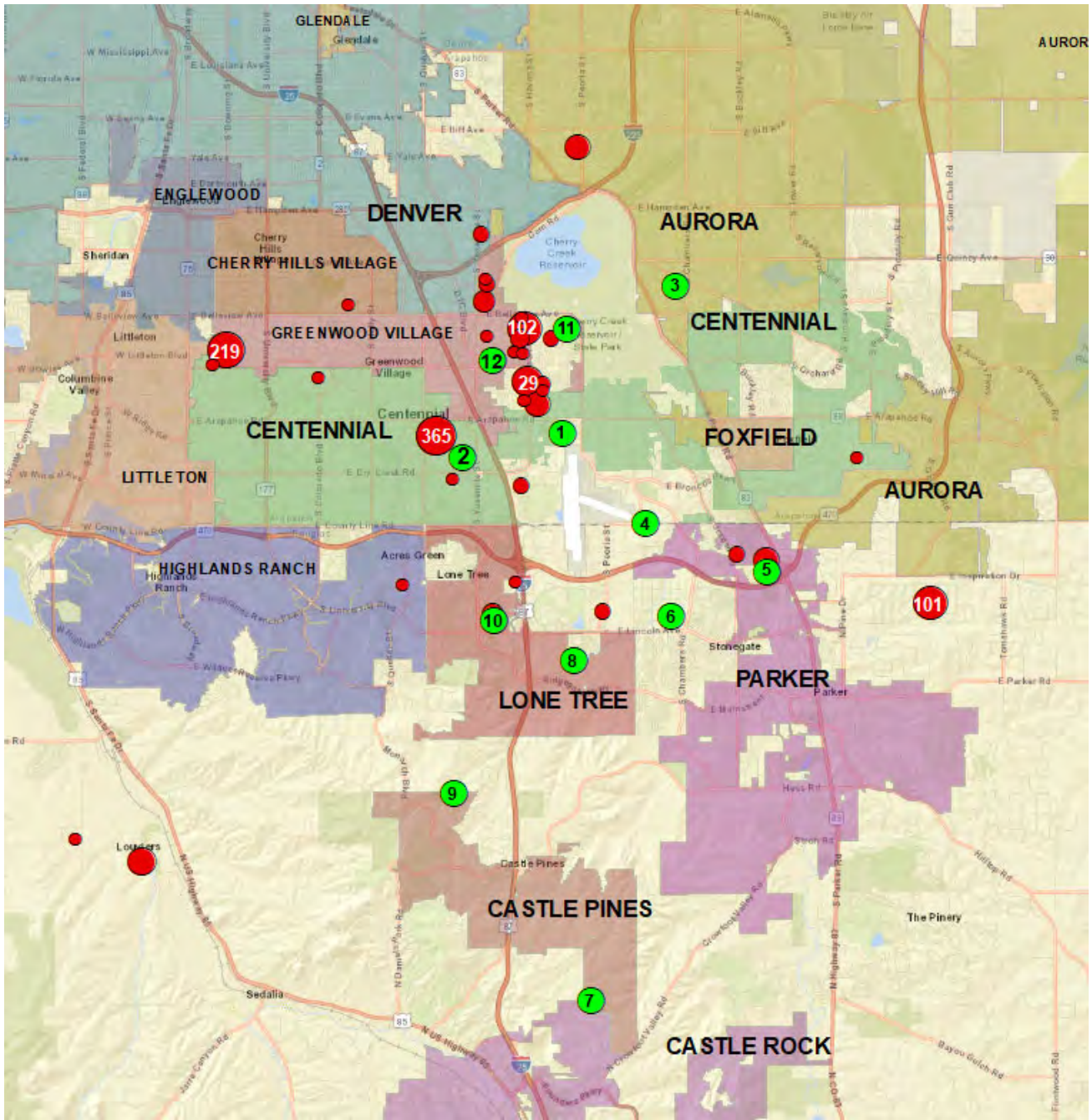
*Top Household Removed

Complaints by Operation Type



*Top Household Removed

8 COMPLAINT MAP



March 2020 Complaints

MAP LEGEND:

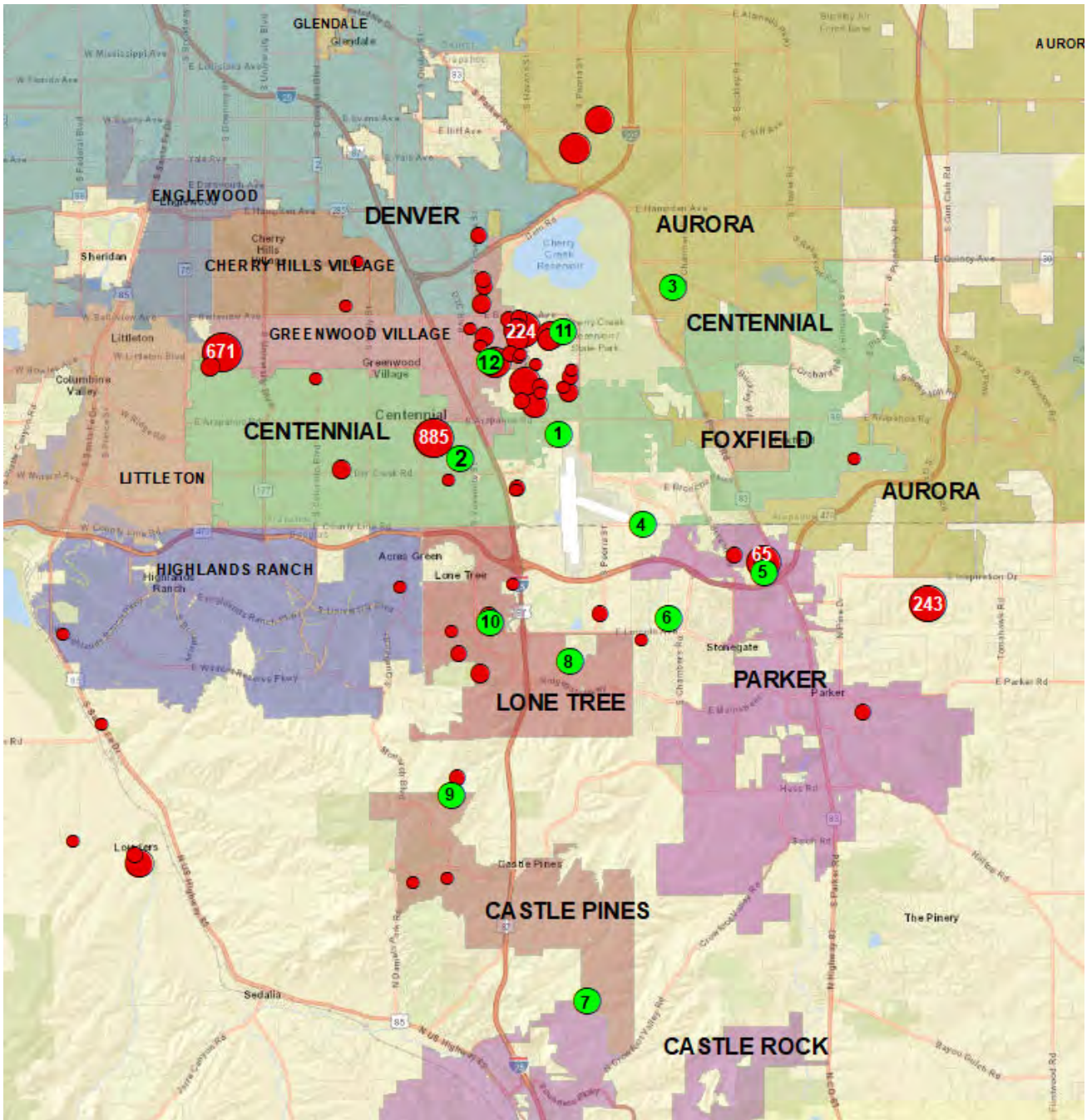
*5 households are located outside the map area

Green = Noise Monitor Locations

Red = Household Complaint Locations.

**Larger dots equate to more complaints for that particular household

9 YEAR TO DATE COMPLAINT MAP



Year to Date 2020 Complaints

MAP LEGEND: *7 households are located outside the map area

Green = Noise Monitor Locations

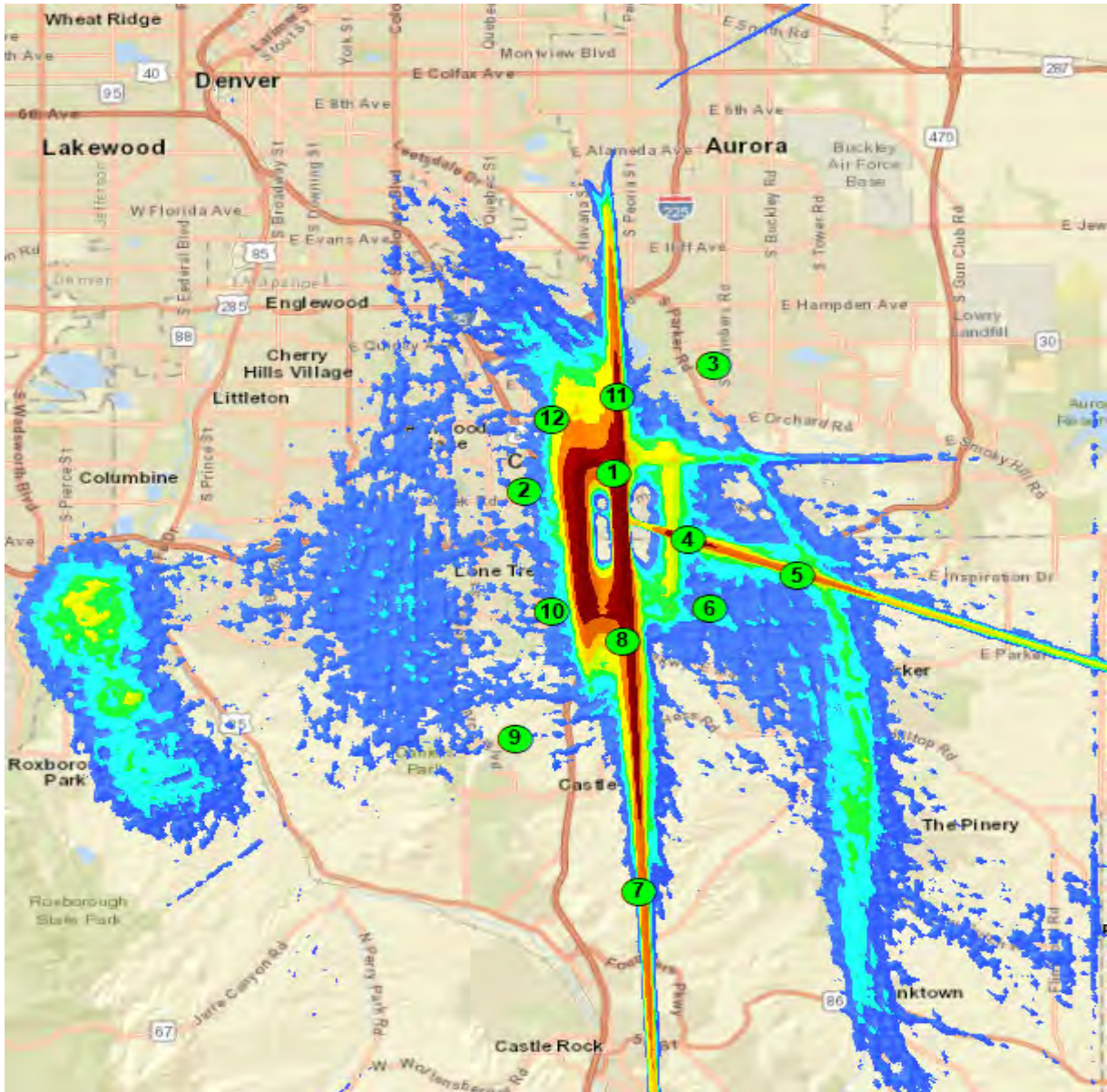
Red = Household Complaint Locations.

**Larger dots equate to more complaints for that particular household

10 RADAR TRACK DENSITY MAP

The following map takes all of the flight track data for the given time period and creates 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.

March 2020 Flight Tracks into Centennial Airport



Lower Density Traffic

Higher Density Traffic

11 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