Centennial Airport
Monthly Noise Report

April 2023

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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.

Centennial Airport Noise Monitor Map
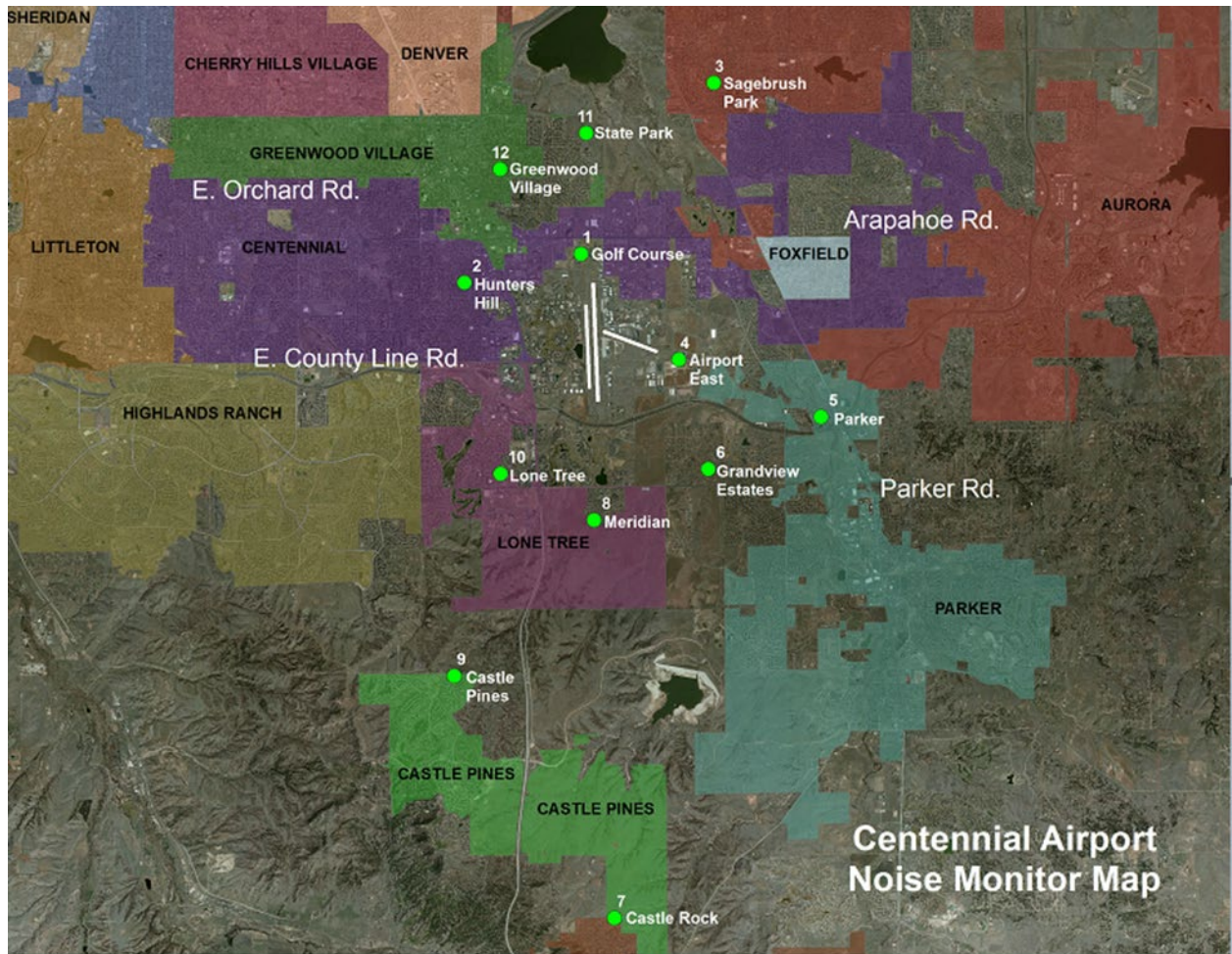
4 ABOUT WEBTRAK™

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.
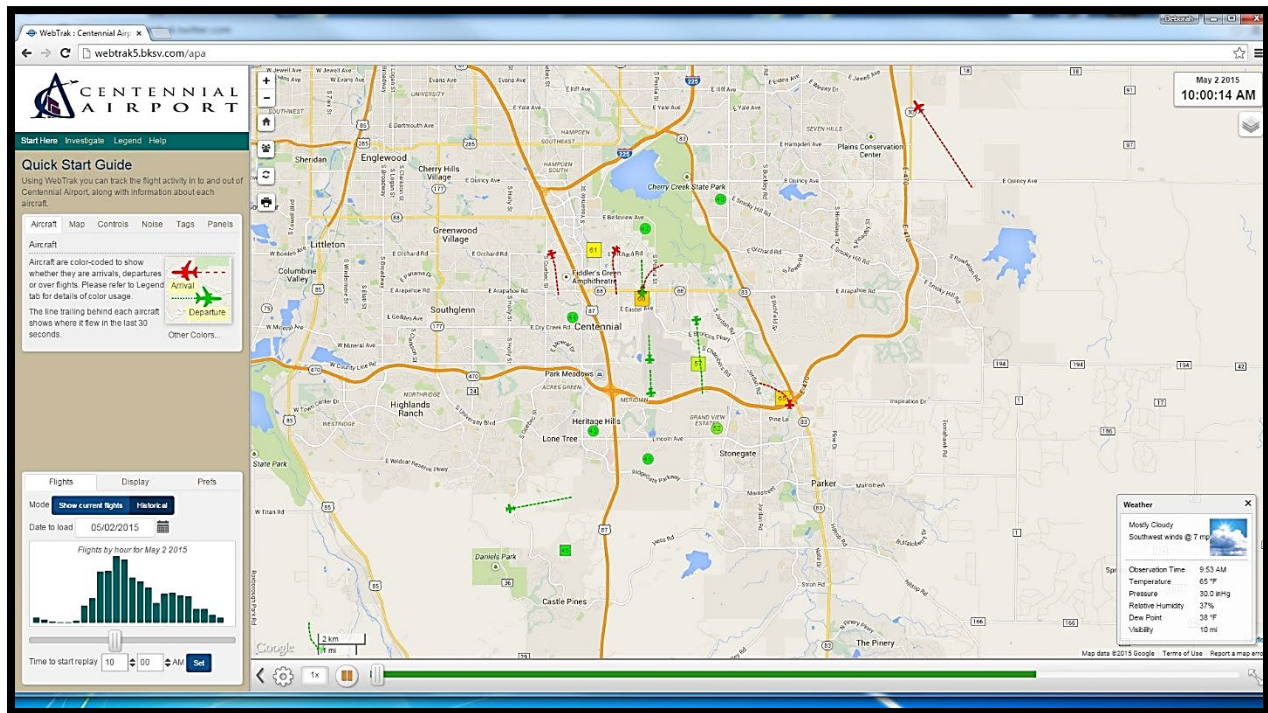
How to participate

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_szUAlHFtyYBNIZTACOI1PF7ZSH8PPbBxORnnaidUUE

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	2,304	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				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	9,148	11,891	553	21,592	5,113	22,674	391	28,178	56,291	105	56,396

	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				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	11	13	11	35	135	322	29	486		Y-T-D Totals	106,687

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.

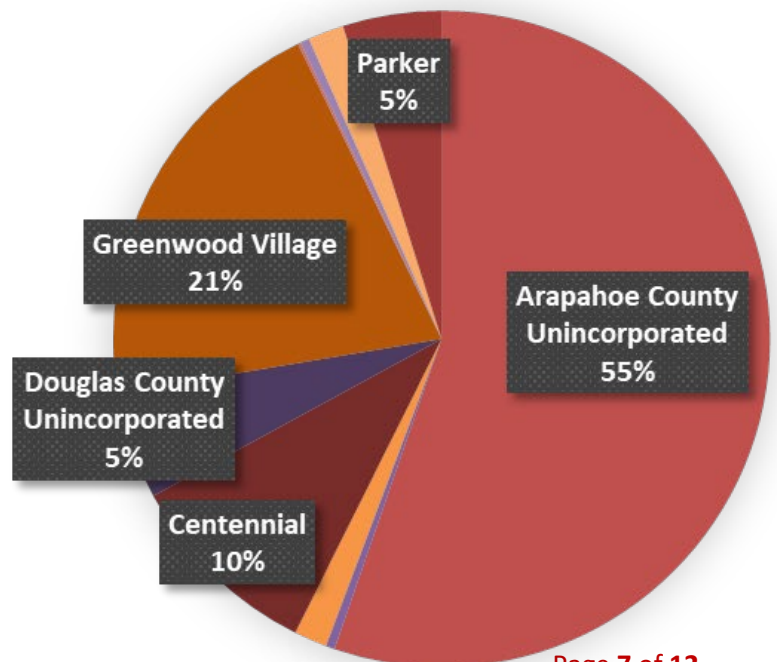| April 2023 Aircraft Noise Event Decibel Range By Monitor					
Monitor	**60-69**	**70-79**	**80-89**	**90+**	**Totals**
Golf Course- 1*	5616	3802	269	14	9701
Hunters Hill- 2	377	42	2	0	421
Sagebrush Park- 3	113	6	1	0	120
Airport East- 4*	2165	1815	1063	70	5113
Parker- 5	1434	184	0	0	1618
Grandview Estates- 6	1515	151	7	0	1673
Castle Rock- 7	838	31	1	18	888
Meridian- 8	5774	1248	39	4	7065
Castle Pines- 9	107	7	0	0	114
Lone Tree- 10	988	53	8	4	1053
State Park- 11	1618	558	10	0	2186
Greenwood Village- 12	902	133	6	0	1041
Totals	21447	8030	1406	110	30993

*Monitor located on Airport
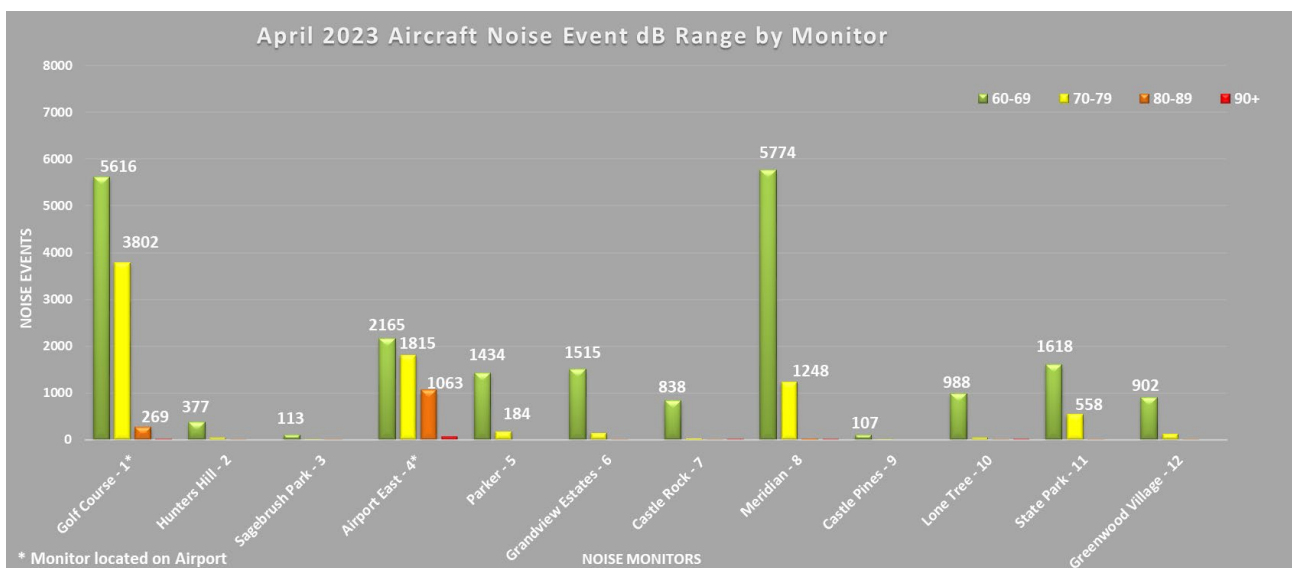
7   APRIL 2023 NOISE COMPLAINT STATISTICS

In April, Centennial Airport received __680__ complaints from __60__ households.

April Noise Complaints			YTD		Population
Municipality	Complaints	Households	Complaints	Households	Census 2018
Arapahoe County Unincorporated	376	30	1194	72	83,764
Aurora	3	1	14	3	374,114
Castle Pines	0	0	2	2	10,507
Castle Rock	11	2	63	4	64,827
Centennial	66	1	241	5	110,831
Cherry Hills Village	0	0	0	0	6,650
Denver	0	0	0	0	716,492
Douglas County Unincorporated	36	4	95	6	100,536*
Greenwood Village	139	11	829	34	15,801
Highlands Ranch	1	1	7	3	105,264
Lone Tree	3	2	6	4	14,653
Parker	33	2	38	6	55,636
Other	12	6	49	12	UNK
Total	**680**	**60**	**2538**	**149**	**1,659,075**

*Douglas County Unincorporated Population with Highlands Ranch Removed

April 2023 Noise Complaint Responses Completed	
Email	27
Phone	7
Total	34

Time Complaint Received	Apr
Day Hours (7:00 am - 9:59pm)	627
Night Hours (10:00 pm - 6:59 am)	53
TOTAL	680

Complaints per Municipality

Parker 5%
Greenwood Village 21%
Douglas County Unincorporated 5%
Arapahoe County Unincorporated 55%
Centennial 10%

Current 12 Month Trend

Operations: Jan 23,734 | Feb 24,275 | Mar 28,267 | Apr 30,411

Noise Complaints: Jan 774 | Feb 451 | Mar 633 | Apr 680

H.R. #1 Removed: Jan 500 | Feb 346 | Mar 491 | Apr 547

Legend: Operations — H.R. #1 Removed — Noise Complaints
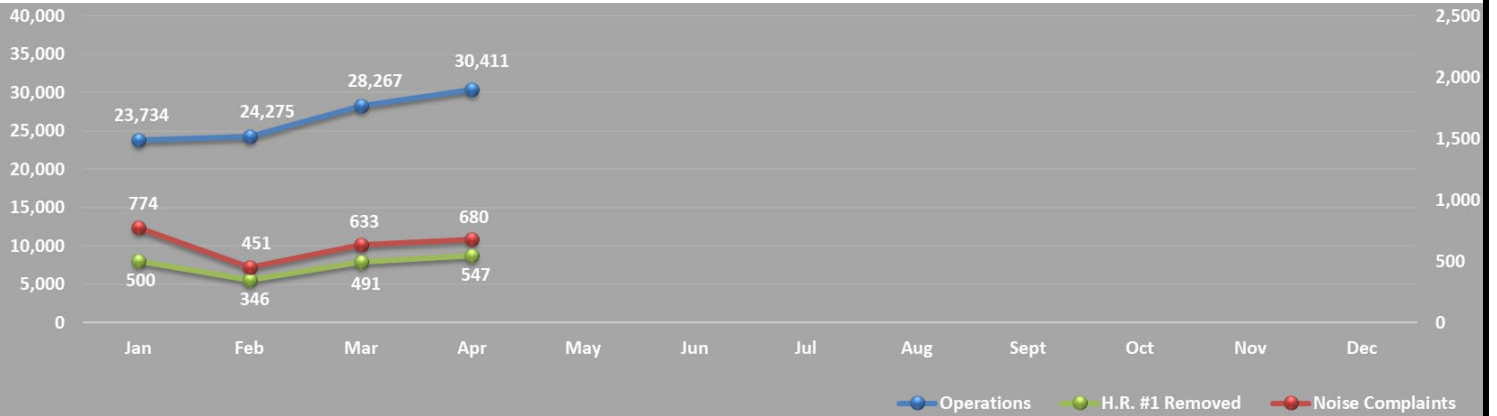
Previous Year 13 Month Trend

Operations: Apr 22 23,737 | May 22 26,499 | Jun 22 25,800 | Jul 22 31,089 | Aug 22 30,455 | Sep 22 18,809 | Oct 22 29,926 | Nov 22 22,169 | Dec 22 24,123 | Jan 23 23,734 | Feb 23 24,275 | Mar 23 28,267 | Apr 23 30,411

Total Complaints: Apr 22 295 | May 22 512 | Jun 22 502 | Jul 22 641 | Aug 22 618 | Sep 22 396 | Oct 22 440 | Nov 22 505 | Dec 22 590 | Jan 23 774 | Feb 23 451 | Mar 23 633 | Apr 23 680

H.R. #1 Removed: Apr 22 230 | May 22 380 | Jun 22 389 | Jul 22 504 | Aug 22 503 | Sep 22 244 | Oct 22 334 | Nov 22 345 | Dec 22 365 | Jan 23 500 | Feb 23 346 | Mar 23 491 | Apr 23 547

Legend: Operations — H.R. #1 Removed — Total Complaints

Top 5 Household Complaints YTD

Pie chart:
- Household #1 — 21%
- Household #2 — 13%
- Household #3 — 9%
- Household #4 — 6%
- Household #5 — 3%
- Remaining — 48%

Top 5 Household Complaints		
Household	Complaints	Households
Household #1	538	Greenwood Village
Household #2	327	Arapahoe County
Household #3	235	Centennial
Household #4	151	Arapahoe County
Household #5	80	Arapahoe County
Remaining	1,207	
Total	**2,538**	

Complaints by Aircraft Type

Heli
1%

Jet
6%

Prop
93%
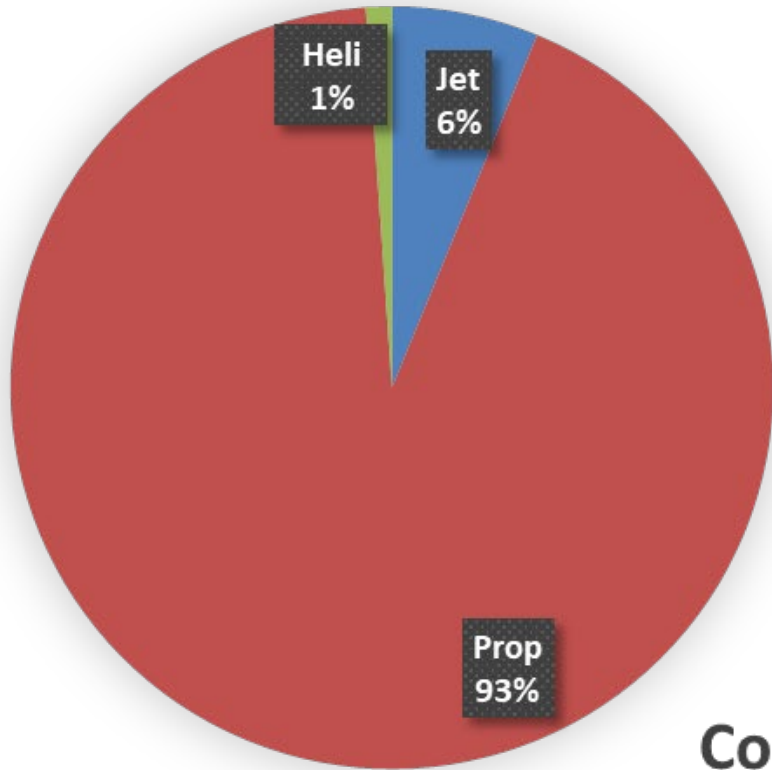
*#1
Household
Removed

Complaints by Operation Type

Arrival
13%

Departure
26%

Training
61%
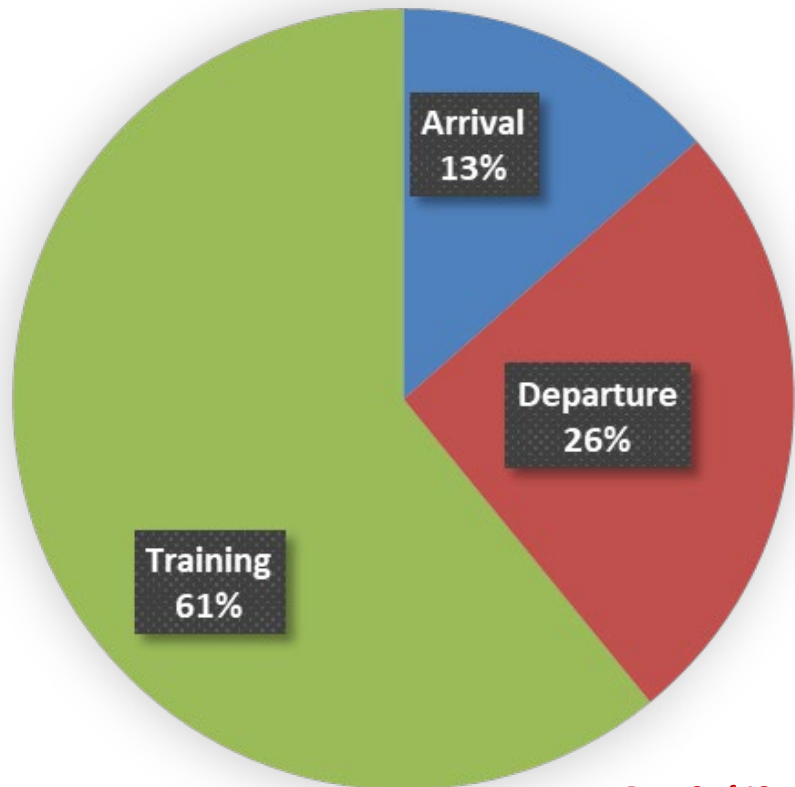
8 CENTENNIAL AIRPORT COMPLAINT MAP

April 2023 Complaints

- ● Noise Monitor Location
- **Household Complaint Location and Number**
  - ● 1.0
  - ● 1.1 - 3.0
- ● 3.1 - 6.0
- ● 6.1 - 10.0
- ● 10.1 - 13.0
- ● 13.1 - 20.0
- ● 20.1 - 33.0
- ● 33.1 - 43.0
- ● 43.1 - 73.0
- ● 73.1 - 133.0
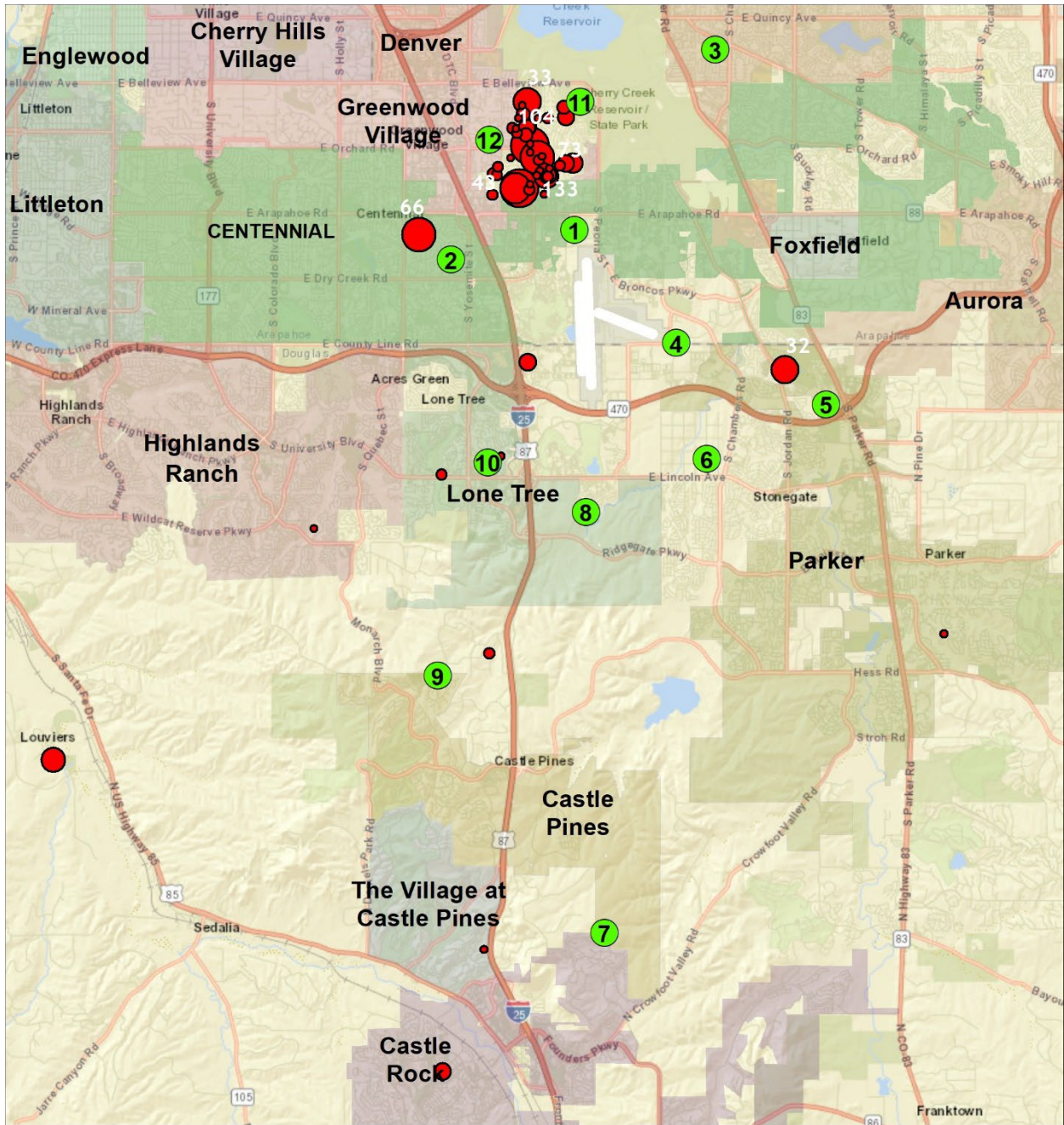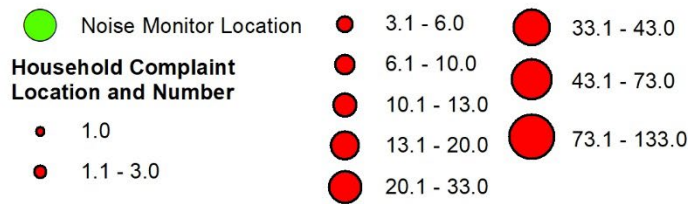
**Larger dots equate to more complaints for that particular households

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.

April 2023 Flight Tracks associated with Centennial Airport

Lower Density Traffic   Higher Density Traffic
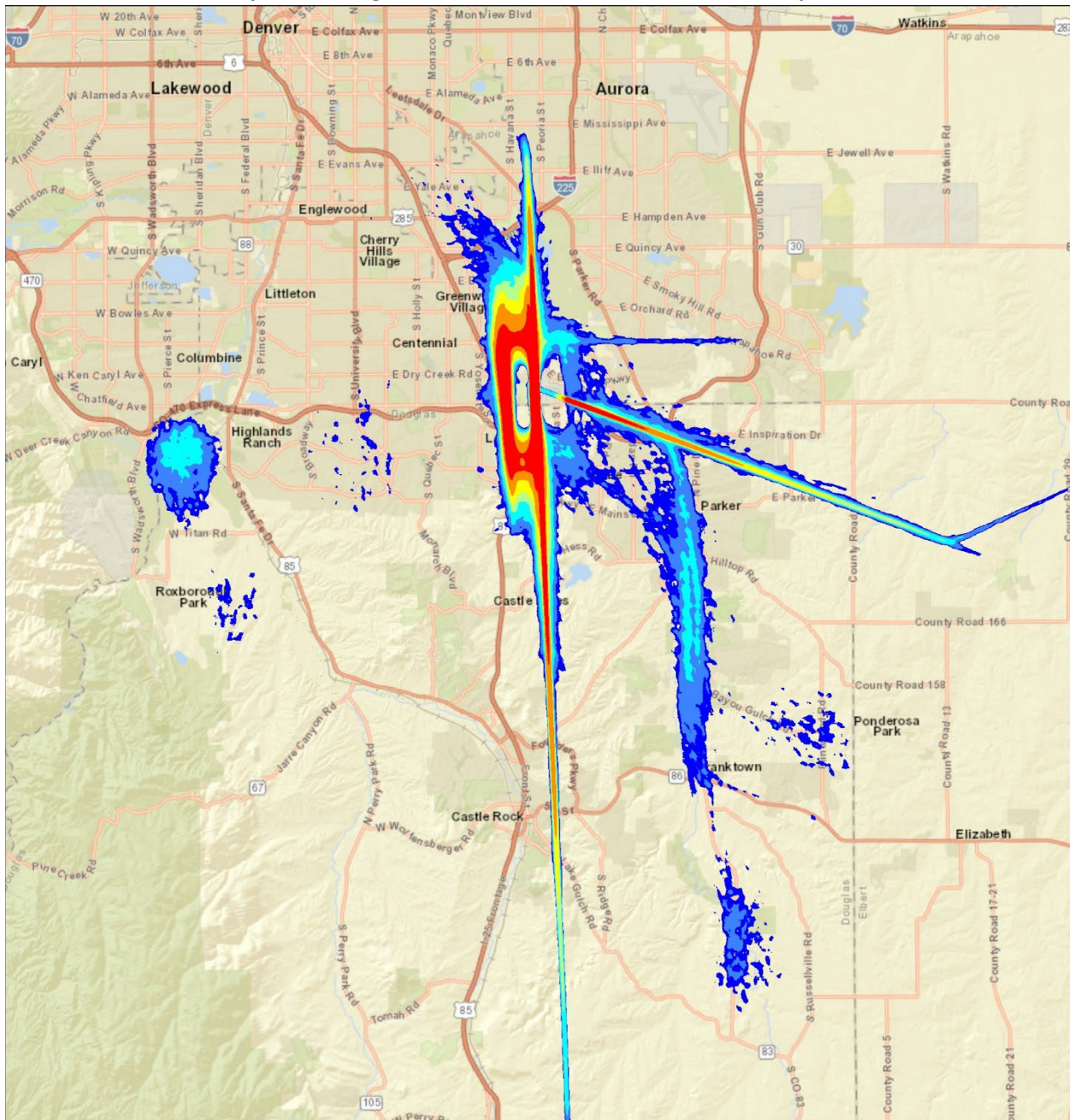
10   NOTES AND DISCLAIMER

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.**

CENTENNIAL AIRPORT

Noise Hotline: 303-790-4709

www.centennialairport.com