

CENTENNIAL AIRPORT COMMUNITY NOISE ROUNDTABLE

AGENDA

May 7, 2025

6:30 p.m. – 8:30 p.m.

Centennial Airport, 7565 S. Peoria Street, Unit D9, Englewood, CO 80112

Chair: Chris Eubanks **Vice Chair:** Pam Thompson **Treasurer:** Andy Jones **Secretary:** Alison Biggs

**Members' Representatives and Alternate Representatives are requested to attend all meetings in person.
Members of the public may attend meetings in person, or virtually.**

CACNR Mission:

CACNR will bring together airport, community, FAA, and aviation industry representatives to collaboratively identify and discuss noise issues at Centennial Airport and recommend courses of action that could reduce noise over affected communities.

1. CALL TO ORDER AND DETERMINATION OF QUORUM:

<i>Arapahoe County:</i>	Rhonda Fields/Leroy Evans Sreenivasan Alakappan/Vacant	<i>Foxfield:</i>	Pam Thompson/Frank Lawrence
<i>Douglas County:</i>	Abe Laydon/Dan Avery Alison Biggs/Mark Adams	<i>Greenwood Village:</i>	Donna Johnston/John Jackson
<i>Aurora:</i>	Brad Pierce/Maurice Healy	<i>Highlands Ranch Metro Dist.</i>	Andy Jones/Renee Anderson
<i>Castle Pines:</i>	Chris Eubanks/Ron Cole	<i>Lone Tree:</i>	Mike Anderson/Chuck Darnell
<i>Castle Rock:</i>	Laura Cavey/Sandy Vossler	<i>Parker:</i>	Vacant/Bryce Matthews
<i>Centennial:</i>	Don Sheehan/Amy Tharp	<i>ACPAA:</i>	Michael Fronapfel/Zach Gabehart
<i>Cherry Hills Village</i>	Dave Heller/Doug Robinson	<i>AOPA:</i>	John Hirshman/Brad Schuster
		<i>CABA:</i>	Don Kuskie/Mike Straka
		<i>CDOT Aeronautics Div</i>	Todd Green/Vacant
		<i>Wings Over the Rockies:</i>	Bill Wasmund/Vacant

MOMENT OF SILENCE FOR BOB DOUBEK, FORMER CACNR REPRESENTATIVE AND ACPAA TREASURER AND BOARD MEMBER Celebration of Life, Thursday, June 5, 1:00 p.m. Horan & McConaty, 5303 E. County Line Road, Centennial, CO.

2. CONSENT AGENDA: (items here may be moved to Agenda Item #3, on the request of any CACNR Representative)

- A. DRAFT MINUTES, April 2, 2025 – Alison Biggs, Secretary
- B. TREASURER'S REPORT, April 2025 – Andy Jones, Treasurer, Zach Gabehart, ACPAA Staff
- C. NOISE REPORT, March 2025 – Zach Gabehart, ACPAA Staff
- D. PORTABLE NOISE MONITOR REPORT – Zach Gabehart, ACPAA Staff

3. ITEMS REMOVED FROM CONSENT AGENDA:

4. PUBLIC COMMENT: (3 minutes per person time limit; 30-minute overall time limit):

- A. RECEIVED BY CACNR
 - 1. Austin Wheeler, Tulsa Riverside Airport Noise Report Request
 - 2. Re "The Summit" at Meridian
 - 3. Re FAR 61.93 Solo Cross-Country Flight Requirements
- B. MEETING ATTENDEES /VIRTUAL ATTENDEES

5. CACNR STUDY GROUP COMMITTEE: Brad Pierce, Chris Eubanks, Mike Fronapfel

- A. STUDY GROUP UPDATE

6. PART 150 STUDY UPDATE/PROGRESS:

- A. PART 150 NOISE COMPATIBILITY STUDY ADVISORY COMMITTEE
 - 1. Report of meeting on Wednesday, April 9, 2025 – Kate Andrus, Mead & Hunt
- B. REPORT FROM PART 150 PUBLIC MEETING, April 9, 2025 – Kate Andrus, Mead & Hunt

7. EXECUTIVE COMMITTEE:

- A. ACPAA MEETINGS – April 2025 – Pam Thompson
- B. CACNR FEES – Andy Jones
- C. WEBMASTER – Chris Eubanks
- D. WORK PROGRAM – Alison Biggs

8. 1st QUARTER LAND USE REFERRALS: Zach Gabehart, ACPAA Staff

9. **REPRESENTATIVES' COMMENTS:**
10. **AIRPORT DIRECTOR:** Mike Fronapfel
 - A. DESTINATION OF CENTENNIAL FLIGHTS VIDEO – end of 2024
 - B. FLIGHT SCHOOL ACTIVITY
 - C. LEGISLATIVE/LOBBYING
 - D. AVIATION FUEL SALES
 - E. COMMUNITY RELATED ACTIVITY
 - F. OTHER
11. **OLD BUSINESS:**
12. **NEW BUSINESS:**
13. **PUBLIC COMMENT EXTENSION IF NEEDED:** (3 minutes per person time limit):
14. **FINAL REPRESENTATIVES' COMMENTS:**
15. **RECOMMENDATIONS TO ACPAA AND OTHERS TO POTENTIALLY REDUCE NOISE OVER AFFECTED COMMUNITIES:**
16. **NEXT MEETINGS:**
 - A. **CACNR** – June 4, 2025 6:30 p.m. 7565 South Peoria Street, Englewood, CO 80112
July 2, 2025 **NO JULY CACNR MEETING**
August 6, 2025 6:30 p.m. 7565 South Peoria Street, Englewood, CO 80112
Sept 3, 2025 6:30 p.m. 7565 South Peoria Street, Englewood, CO 80112
 - B. **ACPAA** – May 8, 2025 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
June 12, 2025 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
July 10, 2025 **NO JULY ACPAA MEETING**
August 14, 2025 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
Sept 11, 2025 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
 - C. **PART 150 MEETING** –
17. **ADJOURN:**



CENTENNIAL AIRPORT COMMUNITY NOISE ROUNDTABLE MINUTES

DRAFT

April 2, 2025

VISION – QUIETER SKIES FOR OUR COMMUNITIES

MISSION – CACNR WILL BRING TOGETHER AIRPORT, COMMUNITY, FAA, AND AVIATION INDUSTRY REPRESENTATIVES TO COLLABORATIVELY IDENTIFY AND DISCUSS NOISE ISSUES AT CENTENNIAL AIRPORT AND RECOMMEND COURSES OF ACTION THAT COULD REDUCE NOISE OVER AFFECTED COMMUNITIES.

Chair: Chis Eubanks **Vice Chair:** Pam Thompson **Treasurer:** Andy Jones **Secretary:** Alison Biggs

1. **CALL TO ORDER, ROLL CALL, and QUORUM:** The meeting was called to order at 6:30 p.m. by Chair Chris Eubanks. The following were in attendance, and a quorum was present:

Douglas County:	Dan Avery	Highlands Ranch:	Andy Jones
Douglas County:	Alison Biggs	Lone Tree:	Mike Anderson
Aurora:	Brad Pierce	ACPAA:	Mike Fronapfel
Castle Pines:	Chris Eubanks	AOPA:	John Hirshman
Centennial:	Don Sheehan	CABA:	Don Kuskie
Foxfield:	Pam Thompson	Wings Over the Rockies:	Bill Wasmund
Greenwood Village:	Donna Johnston		

Also present: Castle Pines Alternate Ron Cole; ACPAA Alternate Zach Gabehart; and ACPAA Staff Matt Frenette and Lauren Wiarda.

Absent: Arapahoe County:	Rhonda Fields/Leroy Evans	Cherry Hills Village:	Dave Heller/Doug Robinson
Arapahoe County:	Sreenivasan Alakappan/Vacant	Parker:	Vacant/Bryce Matthews
Castle Rock:	Laura Cavey/Sandy Vossler	CDOT Aeronautics Div:	Todd Green/Vacant

2. **CONSENT AGENDA:** The Consent Agenda included the Draft CACNR Minutes from March 5, 2025; a Treasurer's Report from March 28, 2025, showing a balance of \$34,317.13; and a Noise Report from February 2025. On the motion of Andy Jones, duly seconded, the Consent Agenda was approved.

The February 2025 Noise Report included the following information:

Noise Monitor #9 – Castle Pines- data was missing due to equipment outages; repair was in progress

February Local Operations:	11,277	February Total Operations:	23,186
Year to Date Local Operations:	22,476	Year to Date Total Operations:	46,716

23,186 Total Operations in February resulted in 656 complaints from 43 households.

<u>February Total:</u>		<u>February 60 – 69 db:</u>		<u>February 70 – 79 db:</u>		<u>February 80 – 89 db:</u>	
Golf Course	9,650	Meridian	5,889	Golf Course	4,470	Golf Course	516
Meridian	7,504	Golf Course	4,660	Meridian	1,562	Airport East	424
Airport East	2,749	Parker	2,204	Airport East	835	Meridian	52
Parker	2,440	Airport East	1,433	State Park	488	Lone Tree	30
State Park	1,815	Portable Station	1,344	Portable Station	273	Portable Station	15
Portable Station	1,632	State Park	1,321	Lone Tree	258	State Park	6
Lone Tree	1,556	Lone Tree	1,267	Parker	232	Greenwood Village	4
Grandview Estates	1,332	Grandview Estates	1,165	Grandview Estates	166	Parker	4
Castle Rock	1,082	Castle Rock	1,027	Greenwood Village	117	Grandview Estates	1
Greenwood Village	882	Greenwood Village	761	Castle Rock	55	Hunters Hill	1
Hunters Hill	510	Hunters Hill	471	Hunters Hill	38	Castle Pines	0
Sagebrush Park	107	Sagebrush Park	100	Sagebrush Park	7	Castle Rock	0
Castle Pines	62	Castle Pines	57	Castle Pines	5	Sagebrush Park	0

February Noise events in the 90+ decibel range: Airport East – 57 Golf Course – 4 Lone Tree – 1 Meridian – 1

<u>February Noise Complaints and</u>		<u>Numbers of Households:</u>		<u>YTD Complaints and</u>		<u>Number of Households:</u>	
Unincorporated Arapahoe County	389 (59%)	UAC	14 (33%)	UAC	651 (56%)	UAC	20 (30%)
Unincorporated Douglas County	75 (11%)	UDC	8 (18.6%)	UDC	166 (14%)	UDC	10 (15%)
Centennial	63 (10%)	Greenwood Village	5 (11.6%)	Centennial	116 (10%)	GV	10 (15%)
Other	60 (9%)	Parker	4 (9%)	Other	99 (8%)	Other	7 (11%)
Greenwood Village	37 (6%)	Centennial	3 (7%)	GV	72 (6%)	Centennial	5 (8%)

Highlands Ranch	19	Denver	3	HR	39	Denver	3
Denver	6	Highlands Ranch	3	Denver	11	HR	3
Castle Rock	5	Aurora	1	Castle Rock	8	Lone Tree	3
Aurora	1	Castle Rock	1	Lone Tree	6	Aurora	2
Parker	1	Other	1	Aurora	2	Castle Rock	2
Castle Pines	0	Castle Pines	0	Parker	2	Parker	1
Cherry Hills Village	0	Cherry Hills Village	0	Castle Pines	0	Castle Pines	0
Lone Tree	0	Lone Tree	0	CHV	0	CHV	0

Year to Date, the top five households complaining were:

Household #1 283 (24%) Unincorporated Arapahoe County
Household #2 266 (23%) Unincorporated Arapahoe County
Household #3 108 (9%) Centennial

Household #4 92 (8%) Other

Household #5 52 (4%) Unincorporated Douglas County

In February, 159 responses were requested from 656 noise complaints, with 151 of those requests made by email and 4 made by telephone.

In February, of 1,172 complaints 1,107 complaints were made about **daytime flights** (7:00 a.m. – 9:59 p.m.) – 95%.
65 complaints were made about **nighttime flights** (10:00 p.m. – 6:59 a.m.) – 5%.

In February, props accounted for **88% of the complaints by aircraft type**; **jets** accounted for **10% of the complaints**, and **helicopters** caused **2%**.

In February, training was responsible for **43% of the complaints**, **departures** were responsible for **35% of the complaints**, and **arrivals** were responsible for **22% of the complaints**.

A graph was provided showing the **number of complaints by the hour** in which they were made, with a peak around 3:30 p.m., followed by a rather dramatic decrease by 6:00 p.m.

The map of household locations and numbers of complaints was included, as was February Radar Track Density Map.

3. **SPECIAL EDUCATION SESSION:**

Bill Wasmund presented an educational session on the various categories of airspace surrounding Centennial Airport. His slides were included in the mailing for this meeting; the narrative is provided here with some of his additional comments noted in italics:

AIRSPACE

The National Airspace System (NAS) is the network of United States airspace: air navigation facilities, equipment, services, airports, aeronautical charts, information/services, rules, regulations, and procedures. Divided into 2 categories

- **Regulatory airspace** - Regulatory airspace includes Class A, B, C, D and E airspace areas, restricted and prohibited areas
- **Non-regulatory airspace** - includes military operations areas (MOA), warning areas, alert areas, controlled firing areas (CFA), and national security areas (NSA) *Civilian pilots do not interact with this airspace.*

Airspace Types

- **Controlled Airspace**
 - Class A
 - Class B
 - Class C
 - Class D
 - Class E
- **Uncontrolled Airspace**
 - Class G
- **Special Use** - Warning areas, MOAs, alert areas,
- **Other** – TFRs, ADIZ

Class A Airspace *must have an instrument certificate to fly here*

- 18,000' MSL up to and including 60,000' MSL
- All operation in class A is conducted under IFR
- Altimeter set to 29.92

Class B Airspace *this is the airspace of Denver International Airport; called Bravo*

- Surface up to 10,000' MSL • Surrounds nations busiest airports
- Surface layer and two or more outer layers
- Two -way radio communications and ATC clearance required
- 4096 Transponder with mode C
- Student pilots require an endorsement from CFI

Class C Airspace *this is the airspace of Colorado Springs Airport, called Charlie*

- Surface up to 4000' AGL
- RADAR approach control
- Surface area with 5 nm radius
- Shelf area with 10 nm radius

- Two-way radio communications and ATC clearance required
- 4096 Transponder with mode C

Class D Airspace *this is the airspace of Centennial Airport, called Delta; this airspace is underneath DIA's Bravo airspace so pilots must take care not to encroach on Bravo*

- Surface up to 2,500' AGL
- Control tower
- Surface area with 5-8 nm radius
- Two-way radio communications and ATC clearance required
- Depicted on a sectional chart by a blue segmented circle

KAPA/KBKF Class D Airspace Redesign

- Configurations for both the KAPA and KBKF Class D airspaces have been expanded and reshaped
- The corridor between KBKF and KAPA airspaces has been eliminated. Pilots must now be in contact with ATC when transiting the airspace
- Aircraft must communicate with ATC over a wider area

Discussion and questions followed Wasmund's presentation. It was pointed out that the designations for "base level" and "ceiling level" altitudes within the airspace can sometimes be misinterpreted causing confusion about the amount of airspace available for training. It was noted again that the slides had been in the mailing for this meeting and the illustrations were available there.

There was discussion of how the designations for "base level" and "ceiling level" altitudes of the DIA Class Bravo airspace affect aircraft using the local training boxes. It was noted that each individual training box has a ceiling limitation based on the lower level of the Class Bravo airspace above it.

Wasmund was thanked very much for the information and his presentation.

4. **ITEM REMOVED FROM THE CONSENT AGENDA:** None

5. **PUBLIC COMMENT:**

A. RECEIVED BY CACNR – None

B. MEETING ATTENDEES /VIRTUAL ATTENDEES –

1. Mike Koscieiniak commented on the recent flight school meeting which had been attended by everyone desired except the FAA representatives, who had not been allowed to attend and were missed. Other than that, the room was packed, there was good discussion, the airport staff had done a fantastic job, and he deemed it the best meeting he had attended!

2. Randy Johnson from Louviers had recorded 364 planes, mostly training planes, and submitted 39 complaints. Some are still doing their turns and flying directly over his home; he has communicated with Gabehart about those. He had also submitted eight complaints to Rocky Mountain Airport. He did note one plane circling overhead today. As noted previously, there have been noticeable periods of quiet, which have been appreciated.

3. On-line, Brenda Dyche noted she was glad to hear that others were getting some peace and quiet from the planes flying over their homes, as she felt all of those planes were flying over her home. She asked if there was any movement for closing the Three Towers training box and the Elizabeth training because people in those areas were getting hammered with flights. She again asked if planes could be sent east where the elevation is lower and there is more space without population. She was also concerned about multiple times when there were two planes in the Three Towers training box, and at least once two were observed seeming to be chasing each other in circles. She further discussed the elevation of the homes in the area in relation to their designation as high density and the available airspace as presented earlier.

Dyche then expressed the feeling that those on CACNR had gotten noise away from their homes by sending it to places which do not have representation on the group, and the majority of CACNR does not care about those who do not have a seat at its table. She was waiting to see if the Elbert County Commissioners would agree to request membership on CACNR and would appoint her as their representative. In the meantime, she asked what CACNR was going to do about the Three Towers training box and all the noise that is going on in that area. She also felt someone needed to shake up the FAA to get something done as well.

There were no further individuals waiting to speak, so the public comment portion of the agenda was closed at 7:08 p.m.

6. **CACNR STUDY GROUP COMMITTEE:** Brad Pierce, Chris Eubanks, Mike Fronapfel

Brad Pierce indicated the group was discussing the dashboard being created, so there can be recognition of the good and bad actors. The needed equipment will be on top of the control tower (Matt and Zach get kudos for working on/with it). The parameters/framework of what the dashboard will contain and look like is a main focus of the study group, and that information will be provided for the contract with the company so all are working together.

Question was asked when the next quarterly report would be available. Response was probably May or June.

7. **REPORT OF UC DAVIS NOISE SYMPOSIUM:** Bil Wasmund and Chris Eubanks

The following report was presented by Bill Wasmund and entered into the minutes at the request of Chris Eubanks -
2025 UC Davis Aviation Noise and Emissions Symposium Report March 11-12 Las Vegas Bill Wasmund

Key Note – R. John Hansman, MIT

- Generation of noise irritation due to volume increase
- Airport Noise and Capacity Act 1990 (ANCA) and Part 161 In many cases, FAA reporting Finding of No Significant Impact (FONSI)

Aviation Emissions and Health

- Low Frequency Noise LFN (20-50 Hz) transmission
- Noise Monitors do not capture LFN? This is false.
- Discussion of Day-Night Average Sound Level (DNL) 65dB vs 55dB
- Sustainable Aviation Fuels (SAF) – Ultra-Fine Particle Emission improvement over Jet-A
- The Absence of Runway Protection Zones? and nearby land development

FAA Noise Policy Review and FAA Aircraft Noise Advisory Committee (ANAC)

- FAA not present
- ANAC – 24 FAA members appointed for a 2 year term
- Deployment of aircraft flaps/speed break/landing gear, and noise generation
- Airport Council International North America ACI-NA - ensure that legislation and regulations are enacted in Washington, D.C.
- Delta airlines and possibly others, employ aeronautical engineers that evaluate fleet for noise
- Number Above vs DNL discussion (Yaplee) The number of aircraft noise events that exceed a certain decibel level, like 60dB(A), 65dB(A), or 70dB(A), within a 24-hour period as opposed to the total accumulation of **all** sound energy, but spread out uniformly over a 24-hour period.. Same presentation as last year

Assessing Noise Impacts

- Education/Income and aircraft noise exposure study. Study does not apply to KAPA
- Use of Aviation Environmental Design Tool (AEDT)
- Metroplex Overflight Noise Analysis (MONA) System
- Same presentation and presenter as last year. Alonso - Stanford

21st Century Noise Report and Noise Office

- California only
- NA – Noise or Number Above
- NA-A Noise or Number Above plus surrounding ambient noise
- L-90 - 65dB exceeded 90% of time
- TNI – Total Noise Index
- Uses CNEL Community Noise Equivalent Level (CNEL) used only in California is similar to DNL but adds two off hour penalties to aircraft operations: a 5dB between 7 – 10PM and a 10dB penalty between 10PM and 7AM for increased noise sensitivity at night.
- Aircraft Noise Event Extraction Methodology (ANEEM) Envirosuite's proprietary algorithm that accurately measures aircraft noise exposure in the community and determines the contribution made by your airport
- Study of the deployment of aircraft flaps/speed break/landing gear and noise generation

Unleaded Fuel

- Swift UL-94 to be discontinued at UND Experienced exhaust valve seating issues
- Swift UL-100R (restricted fuel) I being tested by American Society for Testing Materials (ASTM) Distribution in progress
- Supplemental Type Certificate (STL) to allow aircraft to use UL-94/100R
- UL-94/100R is subsidized
- Improvement to environment studies under way

NASA Quesst and Advanced Air Mobility AAM Missions

- Speed limit vs Noise limit – Test the effects of supersonic flight over land
- Psycho-Acoustic Testing – human noise response
- Sonic Boom mitigation and alternate sound using X-59 aircraft
- No mention of Boom XB-1 aircraft design, research, and recent successful supersonic testing over continental US (FAR 91.817)

Flight Schools Challenges and Opportunities

- Zach
- Emery Riddle: Flight training presents very little hazard
- ANOMS and 1200.Aero applications
- Noise Roundtable creation, purpose and input
- Flight training - night and day, practice area development
- Compatible land management and Grant Assurances
- Zoning and Planning authorities
- Master plans and Part 150 noise compatibility studies NEM and NCP

Other:

- FAA was scheduled to present but was absent
- The UC Davis Aviation Noise and Emissions Symposium has signed a 5- year contract with the Las Vegas Renaissance Hotel.
- All questions submitted electronically (SLIDO) to facilitate order.

Matt Frenette and Zach Gabehart had also attended the symposium, and there had been a separate meeting for airport noise officers. They discussed some of the challenges and solutions being seen and done. Las Vegas was troubled by people using artificial intelligence bots to jam noise lines with enough noise complaints to overload the system so it could not be used by legitimate callers. Matt and Zach had discussed some of the data collection done here and showed how it could be applied elsewhere. They indicated they had learned some things which they could find beneficial here, and hoped they had shared some things of benefit to others.

During discussion, it was noted the FAA could not appear at the event, but notes from the FAA were read. Other areas of particular attention included:

- The keynoter focused most on the generation of noise irritation due to volume increase; the common FAA response to his studies and reporting would be FONSI (standing for Finding of No Significant Impact).
- Low frequency noise tends to penetrate more than high frequency; there was mention the noise monitors do not capture low-frequency noise, but that was disputed.
- There was exploration of the pilot shortage that has occurred, and how flight training has affected noise, specifically close to airports.
- There had been discussion of lowering the FAA's 65 DNL to 55; this had been a constant topic for several years.
- Sustainable aviation fuels were mentioned - fuels that are being produced which contain fewer ultrafine particles than those generated from jet fuel. There had been improvement in that production.
- There was some discussion about the presence or absence of runway protection zones, and residential land development close to an airport which was becoming more prevalent.
- The FAA has an Aircraft Noise Advisory Committee, composed of 24 FAA members, appointed for a two-year term. The purpose is to study noise and its effects on the general public.
- Delta Airlines reported its evaluation of its fleet for noise generation, on an ongoing basis.
- There was discussion about recording the number of aircraft noise events that exceeded a named decibel level in a 24-hour period above a particular site, as opposed to DNL which is the total number of aircraft noise events spread out over a 24-hour period. The former was considered a more accurate measurement of sound impact.
- Assessing noise impacts related to education and income; residences closer to airports were considered less expensive because of noise, and the education level was lower accordingly; this did not seem to apply to Centennial Airport.
- The FAA has developed an Aviation Environmental Design Tool (AEDT) which measures noise as it compares to the aircraft type, speed, weather, etc. There is also a Metroplex Overflight Noise Analysis which is similar to AEDT; Stanford had been using this tool for a number of years.
- It was noted that there has been much data collection about noise, but as yet there have been no reports of the findings from all of that data collection.
- There was discussion of the development and use of the various unleaded fuels being developed.
- NASA has a project called Quest, it also has Advanced Air Mobility. It has a test aircraft the X-59. There is testing of supersonic and subsonic flight over the continental United States, doing psychoanalysis/psychoacoustic testing for human noise response based on supersonic flight.
- There was no mention of the Boom aircraft XB-1 and all of the testing involved with it. It seemed like an information gap.
- Zach Gabehart had participated on a panel discussing flight school challenges and opportunities, and his presentation had later been marked by multiple attendees as being the best of the conference. Congratulations Zach!
- Gabehart had noted the emphasis here on being a good neighbor. A representative from Emory Riddle, a national flight school, stated that flight training presented very little hazard, but did not discuss hazard to what or whom.
- There had been a whole session on the creation of a model on noise
- There had also been a session on the effects of noise and emissions based on ethnicity. It had seemed an odd perspective that perhaps needed to be defined differently, as there were so many other factors which would effect its focus.

Question was asked about the FAA Aircraft Noise Advisory Committee. It apparently had not been formed yet. It came out of the FAA noise policy review and the reauthorization legislation but had been put on hold because of the current administration. There have been no members appointed, but the charter for the group is being developed for whenever (if ever) it will be allowed to proceed.

It was noted this year's symposium had fewer presentations which had seemed to be "commercials" to buy software or some other product, and although the lack of presentations of findings had been noted, it was a good symposium. There would always be room for more focus on general aviation airports.

8. **PART 150 STUDY UPDATE/PROGRESS:** The meeting of the Part 150 Study Group Advisory Committee would be held here on April 9th, 10:00 a.m. – 12:00 noon. That would be followed by the Public Meeting from 4:30 – 6:30 p.m. at the Greenwood Village Maintenance Facility. The draft noise contours would be available, and the operations forecast that had been approved by the FAA should also be available. With this information, staff anticipated being able to look at potential alternatives that could be explored during the Part 150 study, looking at different solutions to be included in the study.

Question was asked if there would be any kind of handouts at the poster session. Assumption was it would just be posters with someone standing there talking. Response was it would be a similar format, with things subsequently posted on the study website; staff would get hard copies for CACNR. The approved operations forecast had already been posted on the study website.

Agenda item 7.C. could not be considered, as CACNR had no knowledge of what information was going to be available on April 9th. It was noted that at one time in the past, at least the members of the advisory committee received the materials in advance, and there was question of why even have an advisory committee if it is not given the information in enough time to study it and formulate questions or comments or provide advice. Something may be posted on the website but not everyone has time to constantly check the website to see if anything is or is not available there. The consulting group would be asked if materials could be available in advance for the future.

It was noted there would also be additional meetings and opportunity for comments. There was observation that the poster sessions were not the most useful for some, as there was no opportunity to hear what others were thinking or questioning. A different format might occasionally be more useful. The consultants would be on the May CACNR agenda with a summary of the April 9th poster sessions.

9. **EXECUTIVE COMMITTEE:**

A. ACPAA MEETINGS – Pam Thompson continued to represent CACNR at these meetings. She had attended the Elbert County Commissioner's meeting where a resident requested the commissioners consider joining CACNR. She had provided information about CACNR, and had then informed the ACPAA as to what had transpired at the Elbert meeting.

B. CACNR ATTENDANCE THROUGH MARCH 2025 – The full year's attendance had been provided. Thompson indicated those whose attendance was highlighted in yellow had not met the attendance standard called for in the CACNR Bylaws. Their Member jurisdictions would be contacted to see if they wished to appoint different Representatives/Alternate Representatives who might be better able to meet the called for standard.

C. CACNR FEES – Andy Jones indicated there were still four jurisdictions which had not submitted their fees: Castle Rock, Cherry Hills Village, Foxfield and Parker. He continued to try to contact those Representatives to get the situations resolved. There was discussion of getting an up-to-date roster sent to everyone; Representatives continued to prefer it be sent to just Representatives and Alternate Representatives, rather than the larger mailing list.

D. WEBMASTER - Chris Eubanks had met with Trish Coberly to learn how to keep the web site up to date. The Executive Committee had agreed a new webmaster would be sought to redesign the site as well as maintain it.

E. WORK PROGRAM- Chris Eubanks noted the need for volunteers to serve on this group. Alison Biggs indicated, per the wishes of the few who had attended an initial meeting, she would be asking specific members to address particular portions of the project so that work could begin. It had appeared a basic design might be most acceptable at this time. Even those who could not be part of the work were invited to share any ideas they might have for consideration.

10. **REPRESENTATIVES' COMMENTS:**

Zach Gabehart and Matt Frenette were thanked for everything they do to assist CACNR and its efforts.

Bill Wasmund was thanked for all the work he had done to present twice during this meeting,

Brad Pierce noted the Aurora City Luncheon would be on June 24. It is a Rotary Club sponsored event featuring Mayor Coffman, at the Hyatt Regency Conference Center on Colfax and 225.

Mike Anderson noted he felt the redesigned Noise Report was more easily used. He noted the Lone Tree website did publish information about the Part 150 meeting next week, and hoped others had done similarly in their jurisdictions. The Lone Tree Director of Economic Development on the Part 150 Advisory Committee would be participating earlier in the day as well. Anderson further noted Lone Tree is at the end of the runway and there had been concern from time to time about the frequency of flights over that area. It was having its State of the City address coming up on the 22nd of April at the Lone Tree Arts Center, 7:30 a.m. and free to the public. The new mayor, Marissa Harmon, would speak about the happenings in Lone Tree, including the expansion in Ridgeway.

Dan Avery expressed similar gratitude to airport staff for helping him understand some of the limitations and height limits that may affect certain land in Meridian as Douglas County reviews any economic development proposal in that area.

Don Kuskie expressed concern about his attendance record, thinking he had been present more than reflected. The lack of a meeting in November was noted as well.

11. **AIRPORT DIRECTOR'S REPORT:** The following information was provided by Mike Fronapfel:

A. Recognition was given to staff members Zach Gabehart, Matt Frenette and Lauren Wiarda. It was Gabehart's first anniversary in his position and of being introduced to CACNR, so that anniversary was noted with appreciation. Frenette had been on board for about 13 months, and Wiarda had been with ACPAA for roughly 15 years, more recently working as director of planning development and overseeing the noise environmental office. One of the new interns, Ethan Nason was introduced.

B. The flight school meeting held on March 26th was the first mandatory meeting following the change in the airport's Minimum Standards. There were 28 in attendance, including Commissioners Campbell from Arapahoe County and Laydon from Douglas County.

With the new administration, they've really pulled back on the FAA being at public meetings in regards to noise and environmental matters, so the FAA had not been allowed to attend this meeting to provide its usual safety briefing up front. However, the meeting had included robust discussions on both sides, and one participant said it was like a town hall meeting and was the best meeting in a long time.

Some time had been spent reviewing the latest report of the Study Group Committee, which did show some improvements. Year over year, there were about 5,000 less overflights over the study area than prior. Progress has been shown so far, but there was still much to be done. Work was continuing on the dashboard, which was hoped to be available by the end of summer.

The FAA's participation with the Study Group had been curtailed by the current administration in Washington, D.C. and it was hoped that blockage would not last long.

Question was asked if there had been any discussion about the Three Towers training area. The airport had requested the flight schools adopt policies and practices that avoid any sort of ground reference maneuver or any low level maneuver in the Three Towers and the Elizabeth Box. The flight schools seemed receptive to the idea of limiting that activity as much as possible in those two boxes. It was something that would continue to be looked at. The schools had been presented with a heat map showing the intensity of how frequently the two boxes closest to the airport were being used versus the other six that are further north and east of those two. So that topic was considered pretty extensively.

Question was asked if there was any flexibility with the 25-mile requirement that seemed to prevent more extensive use of the other training boxes. It was unclear how the 25 mile distance was measured, and the FAA's guidance was very vague.

Question was asked if changing the airport's airspace shape or form would allow any flexibility with the 25 mile limitation. In theory yes, but it's a standard that had been in place for a long time and is widely used, so doubtful if the FAA would carve out our traffic specifically.

It was noted that pilots now use an electronic mapping system called ForeFlight, rather than paper such as the Noise Abatement Guidelines we used to provide with holes punched for the lap boards which used to be in use. ForeFlight allows layers to be created which can show a variety of whatever pilots desire, such as showing our noise sensitive areas or the training boxes which have been designated. It was further noted neither the airport nor the Colorado Pilots Association created the training boxes, or have any direct control of them. While there is no direct control, the tenants at this airport want to be good neighbors and so there can be a kind of influence. One thing might be to include a related criteria in the dashboard which could be a very useful tool to have, working with the pilots' association to create a layer for the flight schools to utilize. It was further noted there were lots of things that came out of meeting last week but now that pilot mapping is done electronically, ForeFlight is one of the tools which can be very useful.

C. ACPAA, along with Greenwood Village and Arapahoe County, had contracted with the Normandy Group to help lobby both at the national and the state levels on noise and environmental issues. Mike Fronapfel had been in Washington DC and the Normandy Group had set up five different meetings for him. He met with the staffs for Hickenlooper, Bennett Crowe, Negus, and the new Representative to the south, Bobert. Several different talking points were presented; one asking that the FAA get back to the table, both at the Part 150 study and the Study Group as it is important for them to be at the table as part of the process. The FAA has been a great partner over the last 18 to 24 months. The staffs were receptive to that and wanted to be updated if there continued to be issues with the FA not being able to engage. Also, they were provided a copy of the Q4 2024 Study Group report and Fronapfel briefly went over some of the updates and trend lines. They were pleased to see there has been some improvement in that regard.

D. In addition, the legislative staffs had received an update on unleaded fuel and the airport waiting for a national 100R or 100 octane unleaded fuel to come out that would be more broadly usable than the UL-94 which can only be used by about 65% of the fleet. FAA and ASTM certification are needed before that is starting to be produced and rolled out. There was another product on the market as well, G100UL, however, the makers of G100UL were not going through the ASTM process, and as a result, it may not be welcomed or used by the industry because of liability concerns. (The ASTM certification verifies the product's compatibility with seals, gaskets, hoses, all kinds of different transport trucks, fuel farms, all the different things that the fuel touches through the process before it even gets to the aircraft.)

E. In California, there are a few jurisdictions where they say as soon as there is a market or a fuel on the market that is viable and available, they are mandating that the airports must transition immediately to that new fuel. Some are arguing and have been successful in resisting that. There have been some lawsuits and judges have cited that it's not considered a viable replacement yet. It is obviously something ACPAA will be watching. So far, none of the Centennial Airport's FBOs would be willing to use it because of the liability issues. Of the 850 or so tenants at the airport, only one has requested that the airport gets that fuel, but no one else is willing to put it in their aircraft either. ACPAA hopes to be in the forefront of the transition to the 100R.

3. There are a couple airports in California that only sell unleaded, one of which is Reed Hillview as the main one. It was interesting now with the new administration, the FAA may be going after those airports because of them breaking their grant assurances. However, Reed Hillview has stopped taking grants, so that's not a weakness in a sense for them, but some of the other airports that are considering that could be in jeopardy of losing their funding if they ban 100 low lead altogether.

4. Many airports across the country are concerned about staffing of their towers, and Centennial Airport is short-staffed as well. Many of the controllers are working longer hours and reducing services and not being able to do pattern work. When there is not enough staffing to do pattern work, it can be a better and quieter outcome for the community, but from a safety standpoint, the towers do need to be fully staffed.

5. Centennial received an \$8 million grant, and work will begin on the existing tower this summer. Conversations are starting with elected officials now to try to find a way to get the FAA to build and fund a new tower here.

6. The hotel was getting closer to opening, with an anticipated date of April 24th. All county permits have been granted and all inspections have been done. There is a refurbished meeting space which CACNR may wish to consider using in order to be more of a true roundtable.

7. The Runway 54K would be held of June 7th and all were invited to come. Last year there were 1,000 participants and raised \$65K for the Centennial Airport Foundation. So far this year there are over 1,100 registrations and it is being capped at 1,500, hoping to raise \$70,000. Donations are made to the Tuskegee Airmen, and local aviation programs and the high school and college levels. We've set up three scholarships, one for airport management in memory of former airport director Robert Olislagers, a scholarship for pilots and another for aircraft mechanics. The scholarships are for \$10K each.

8. Finally, recognition was given to Bob Doubek who had been on the ACPAA Board for 20 years and at 97 was leaving that position. He still maintained a plane at Centennial and occasionally still flew it with a safety pilot on board. His petroleum engineering background had been utilized by the board over the years, and he had also served as the AOPA representative on CACNR for many years. ACPAA had had a celebration for him the week prior.

12. **OLD BUSINESS** – None

13. **NEW BUSINESS** – None

14. **PUBLIC COMMENT:** Completed.

15. **ADDITIONAL REPRESENTATIVES' COMMENTS:** Pam Thompson asked Mike Fronapfel if he could share the destinations of Centennial flights with CACNR. Response was yes, that could be done in May. The Division of Aeronautics did an economic impact study, and as part of that, they looked at the IFR flights in and out of all the airports in Colorado. For Centennial Airport, it showed that all 50 states had been reached by about mid-January with flights to and from. Internationally, there were over 1,600 different destinations in 41 different countries, double the destinations going through Denver.

16. **RECOMMENDATIONS TO ACPAA & OTHERS TO POTENTIALLY REDUCE NOISE OVER AFFECTED COMMUNITIES:** Alison Biggs noted this was one of the things in the work program that never got talked about so was on the agenda to remind us that one of the charges that we have is to make recommendations to the airport board or anybody else to potentially reduce noise. The Study Group does, and we talk about what that group does, but are there other thoughts that anyone has that might develop into recommendations?

17. **NEXT MEETINGS:**

A, CACNR –	May 7, 2025	6:30 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
	June 4, 2025	6:30 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
	July 2, 2025	NO JULY CACNR MEETING	
	August 6, 2025	6:30 p.m.	7565 South Peoria Street, Englewood, CO 80112
B. ACPAA –	April 10, 2025	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
	May 8, 2025	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
	June 12, 2025	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
	July 10, 2025	NO JULY ACPAA MEETING	
	August 14, 2025	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR

C. PART 150 MEETING – April 9, 2025 4:30 – 6:30, Greenwood Village Maintenance Facility, Mr. Elbert Room, 10001 E. Costilla Avenue, Greenwood Village, CO 80112

18. **ADJOURNMENT:** The meeting was adjourned at 8:28 p.m.

Alison Biggs, Secretary

CENTENNIAL AIRPORT COMMUNITY NOISE ROUNDTABLE 2025 BUDGET - Approved October 2, 2024; Updated as of 05/02/2025				
		BUDGET	ACTUAL	
INCOME:			as of 05/02/2025	NOTES
CARRY OVER FROM PRIOR YEAR	\$ 24,000.00	\$24,448.97		Carry over from 2024
ACPAA	\$ 10,000.00	\$10,000.00		
CACNR REGULAR MEMBERS	\$ 7,000.00	\$6,000.00		12 Regular Members to be invoiced at 1/2 past regular amount (\$500 for Cities and Towns; \$1,000 for Counties)
TOTAL INCOME:	\$ 41,000.00	\$40,448.97		
EXPENDITURES:				
WORK PROGRAM:				
TEAM EXPENDITURES	\$ 10,000			Community Outreach; Incentive Program(s); Fly Quiet; Practice Areas; Noise Monitors; Legislative/Governmental Affairs
WEBSITE	\$ 2,100	\$325.00		Webmaster; Website maintenance and update
EXECUTIVE/WORK PLAN	\$ 500			Annual Report
CONFERENCES:				
2 Reps to UC Davis Symposium	\$ 5,000	\$4,806.84		** Estimate based on prior symposiums
2 Reps to 2 N.O.I.S.E. Conferences	\$ 4,000			** Estimate based on prior years when conferences were held
CONSULTATION/EDUCATION:	\$ 4,000			Projects with consultants for entire Roundtable
MEMBERSHIP DUES:	\$ 1,000			N.O.I.S.E.
	\$ 325			CML
ADMINISTRATIVE:	\$ 2,000			Consultation on Work Plan
	\$ 3,000			Legal
ADMINISTRATIVE	\$ 1,650			Meeting Space
	\$ 1,500			Recorder
RESERVE	\$ 2,000.00	\$500.00		for presently unidentified and unanticipated expenses and/or CACNR activities consistent with the approved Work Plan.
TOTAL EXPENDITURES:	\$ 37,075.00	(\$5,631.84)		
CARRY OVER TO 2025	\$ 3,925.00	\$34,817.13		Actual to be determined at the end of 2025
** Usually includes registration, travel, ground transportation, lodging, meals.				
FRAME OF REFERENCE: The MOU Funding Structure adopted 12/13/2018 called for an initial two-year funding mechanism. "Thereafter, CACNR will provide ACPAA and each Regular Member with a report on the previous year's expenditures, and an annual invoice accompanied by a proposed budget indicating how the requested funds would be utilized, so that funds could be appropriated for the coming year."				



CENTENNIAL
AIRPORT®

CENTENNIAL AIRPORT

MARCH 2025 NOISE REPORT



Visit Our Website

centennialairport.com

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2. 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.

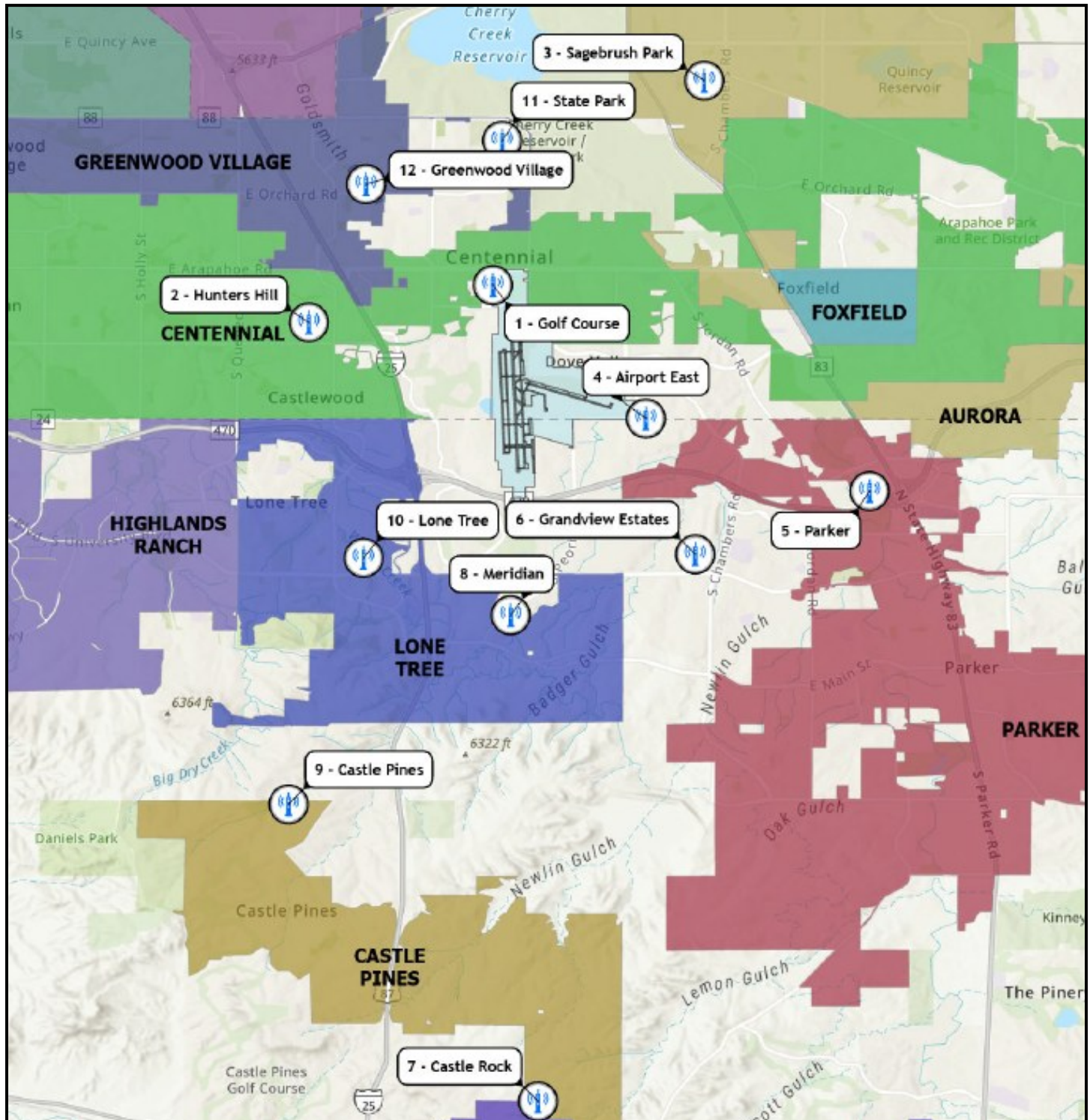
Overflight – Aircraft flight originating and terminating outside the area that transits the airspace without landing.

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.

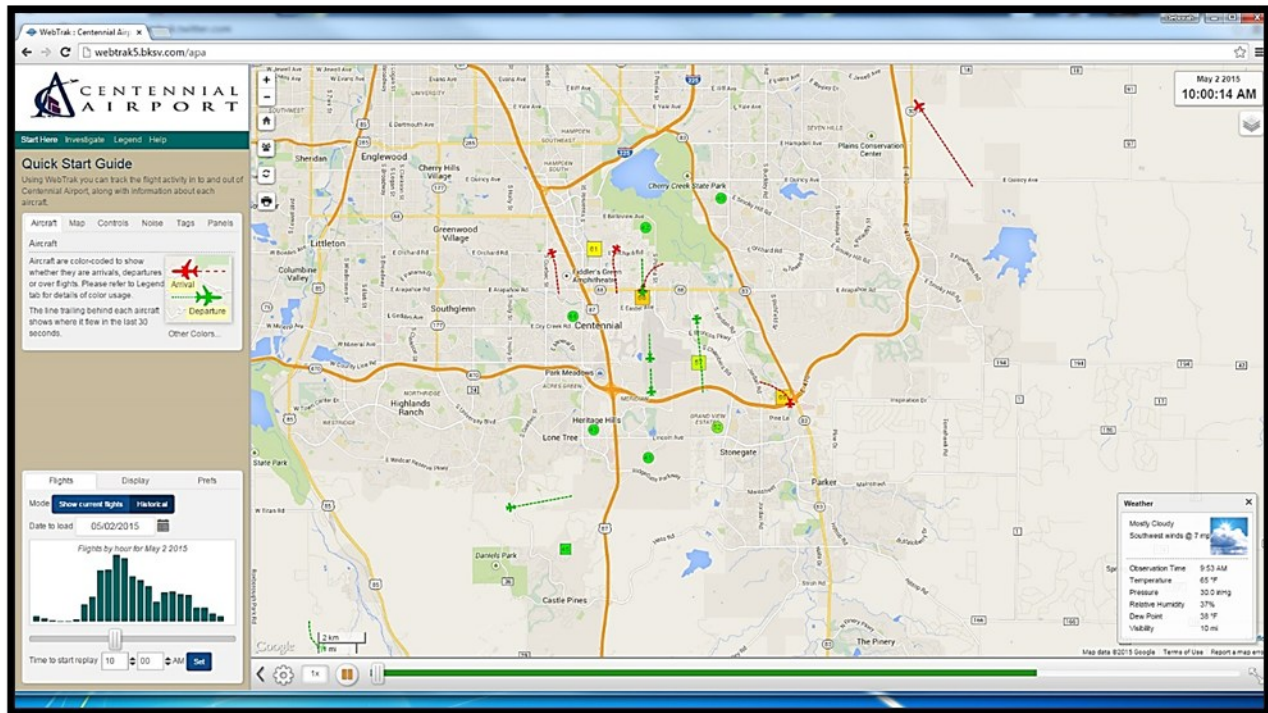
3. ABOUT APA's NOISE MONITORING PROGRAM

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 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, Colorado Air & Space Port and Buckley Space 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;

WebTrak: <https://webtrak.emsbk.com/apa>

Additional Noise Information: <https://centennialairport.com/track-and-report-noise>

Scan here to view Centennial Airport's
Voluntary Noise Abatement Information



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	2,634	2,546	131	5,311	1,559	5,291	77	6,927	11,197	2	11,199
February	2,509	2,499	134	5,142	1,488	5,097	84	6,669	11,271	6	11,277
March	2,682	2,896	124	5,702	1,731	5,897	83	7,711	13,120	15	13,135
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	7,825	7,941	389	16,155	4,778	16,285	244	21,307	35,588	23	35,611

	IFR OVERFLIGHTS				VFR OVERFLIGHTS				TOTAL OPERATIONS
	AIR TAXI	G.A.	MILITARY	TOTAL INTINERANT	AIR TAXI	G.A.	MILITARY	TOTAL	
January	6	3	2	11	31	49	2	82	23,530
February	0	3	1	4	35	53	6	94	23,186
March	7	6	1	14	29	53	3	85	26,647
April				0				0	
May				0				0	
June				0				0	
July				0				0	
August				0				0	
September				0				0	
October				0				0	
November				0				0	
December				0				0	
Y-T-D Totals	13	12	4	29	95	155	11	261	73,363

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.

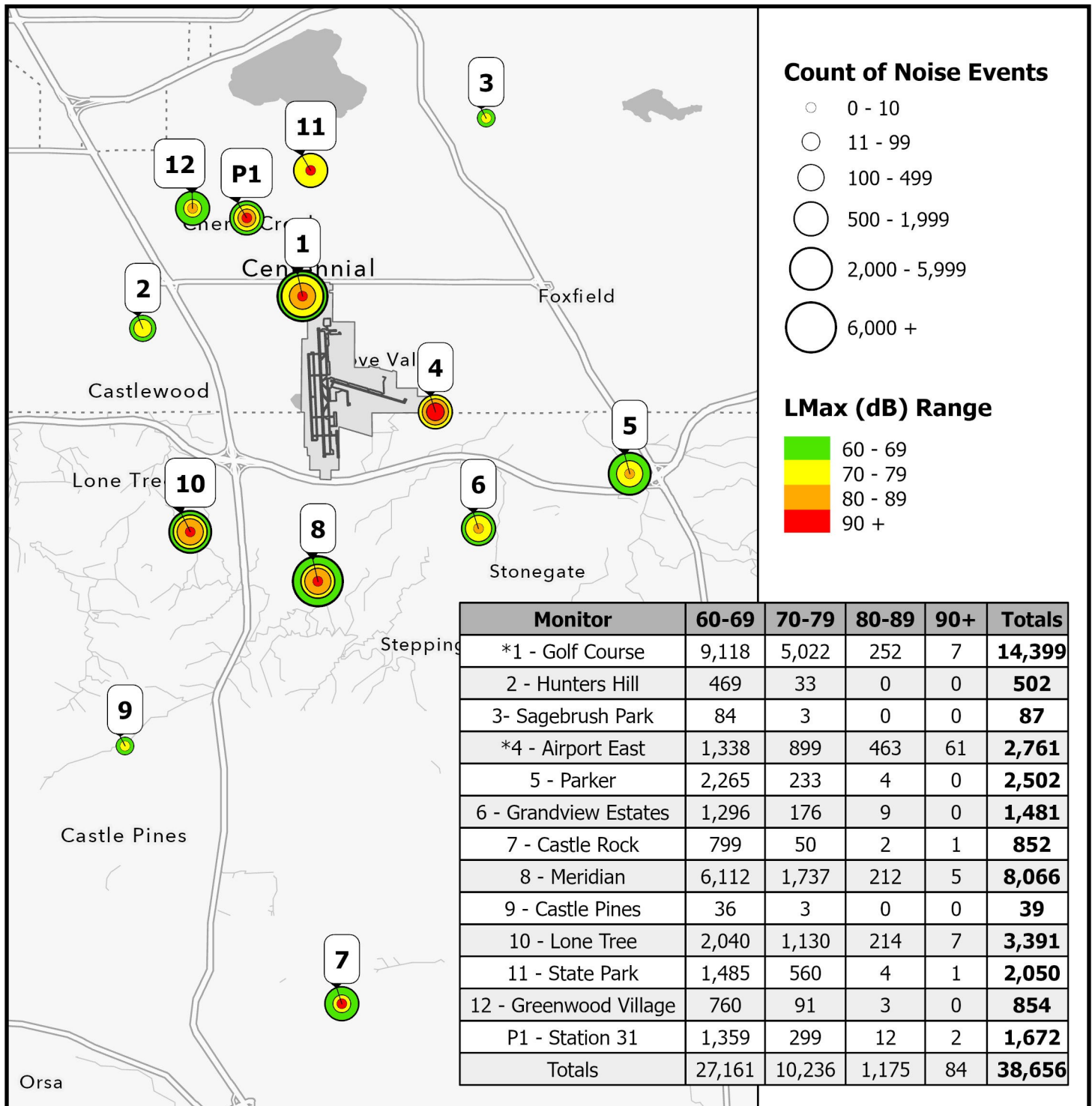
VFR Itinerant – Operations other than local operations conducted under Visual Flight Rules.

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

6. NOISE MONITOR REPORT

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.

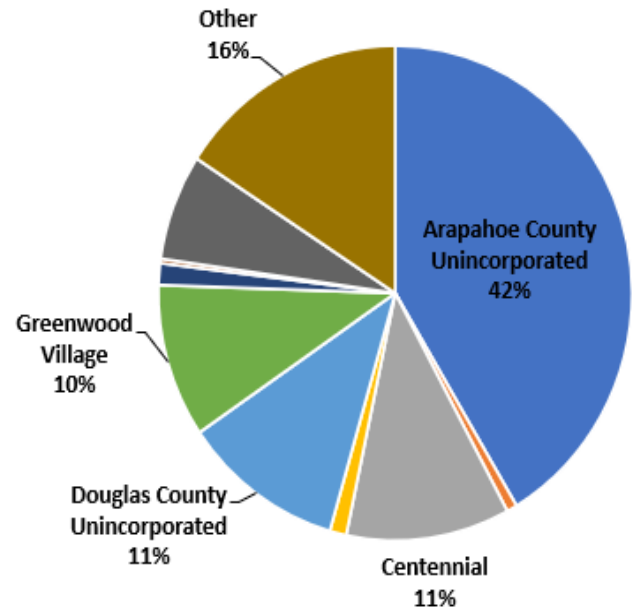


NMT 9 Missing Data due to equipment outages. Repair is in progress.

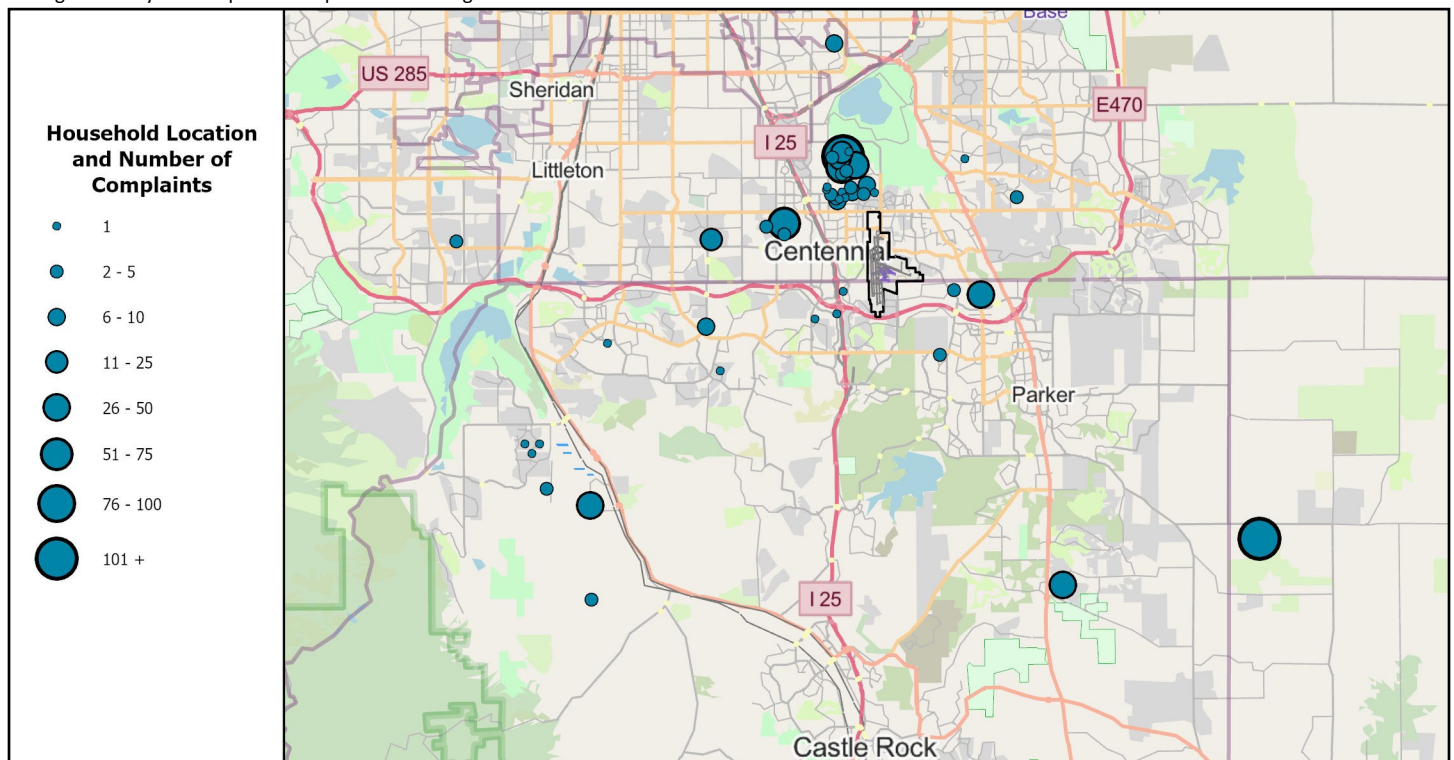
7. MARCH 2025 NOISE COMPLAINT STATISTICS

Municipality	Complaints	Households	Population
Arapahoe County Unincorporated	293	15	98,066
Aurora	5	1	399,913
Castle Pines	0	0	14,000
Castle Rock	0	0	86,000
Centennial	79	5	108,422
Cherry Hills Village	0	0	6,442
Denver	8	1	715,522
Douglas County Unincorporated	78	10	276,493*
Greenwood Village	71	7	15,691
Highlands Ranch	10	3	103,444
Lone Tree	2	2	14,253
Parker	49	1	68,000
Other	112	5	-
Total	707	50	1,906,246

Complaints per Municipality



*Douglas County Unincorporated Population with Highlands Ranch Removed



*3 Households Not Shown

7. MARCH 2025 NOISE COMPLAINT STATISTICS CONT'D.

Complaint by Aircraft Type



Propeller 93%



Jet 6%



Helicopter 1%

*#1 Household Removed

Complaint by Operation Type



Departures 26%



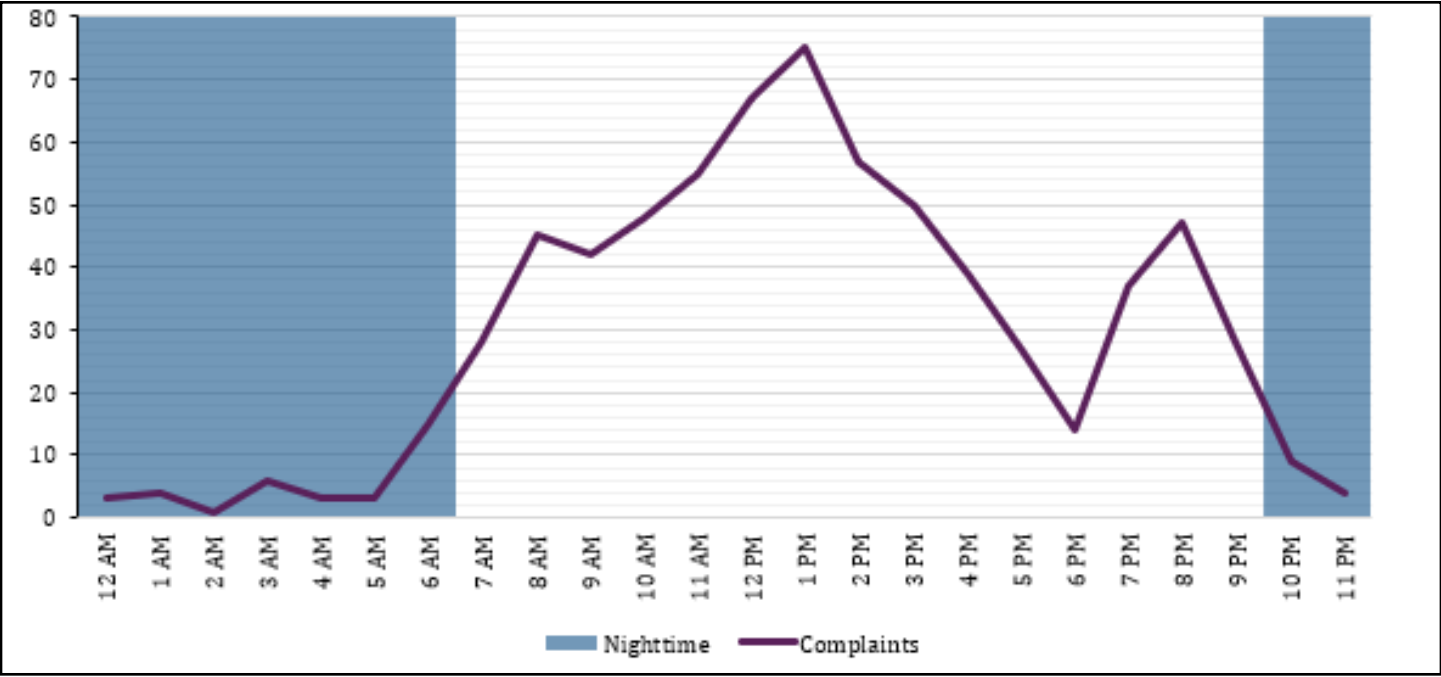
Arrivals 21%



Training 53%

*#1 Household Removed

Complaints by Hour



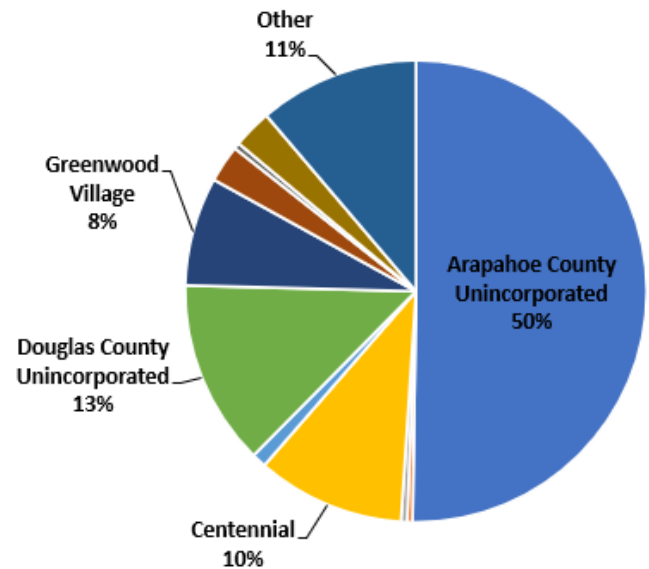
Noise Complaint Responses Completed	
Email	96
Phone	2
Total	98

Time Complaint Received	
Day (7:00 AM—9:59 PM)	659
Night (10:00 PM—6:59 AM)	48
Total	707

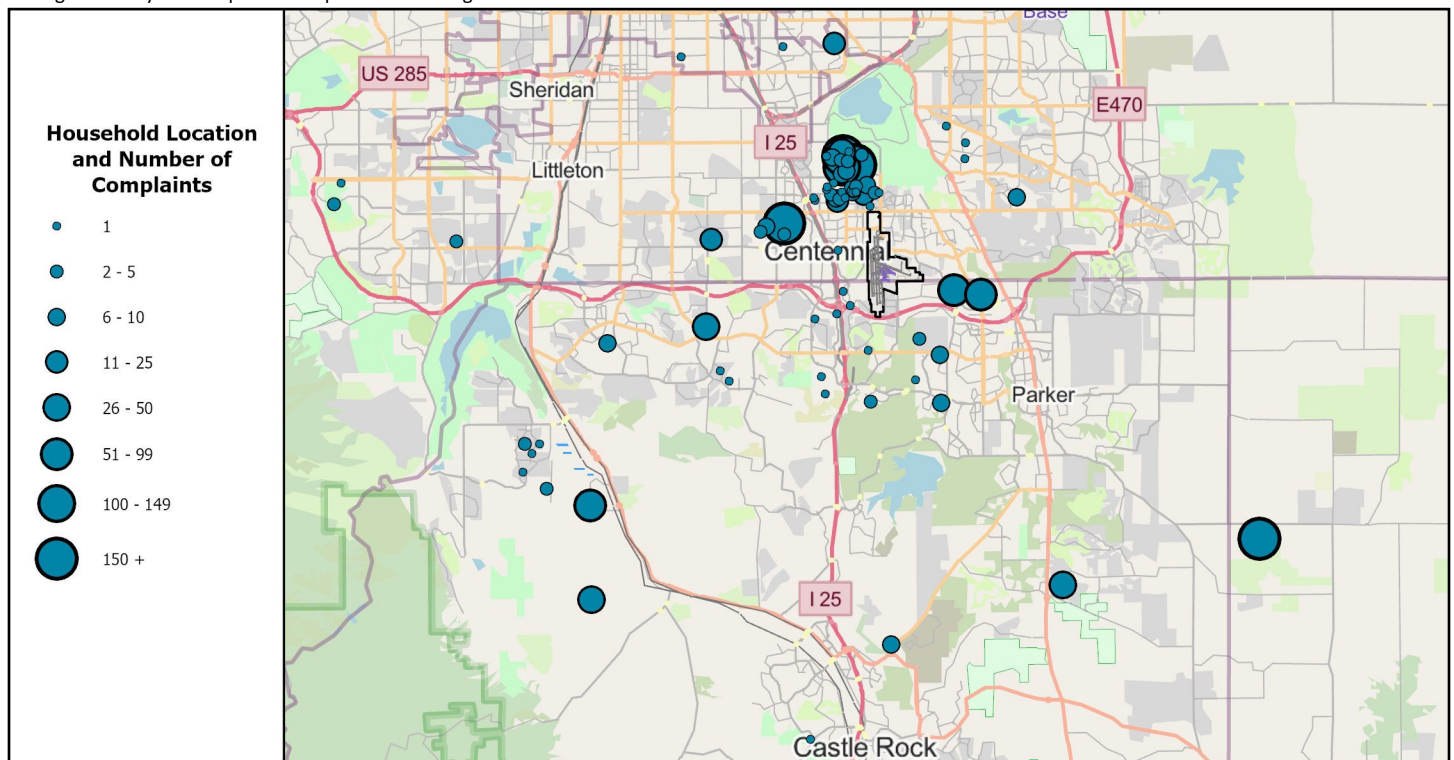
8. YEAR-TO-DATE 2025 NOISE COMPLAINT STATISTICS

Municipality	Complaints	Households	Population
Arapahoe County Unincorporated	944	24	98,066
Aurora	7	2	399,913
Castle Pines	0	0	14,000
Castle Rock	8	2	86,000
Centennial	195	7	108,422
Cherry Hills Village	0	0	6,442
Denver	19	3	715,522
Douglas County Unincorporated	244	15	276,493*
Greenwood Village	143	12	15,691
Highlands Ranch	49	4	103,444
Lone Tree	8	5	14,253
Parker	51	1	68,000
Other	211	9	-
Total	1,879	84	1,906,246

Complaints per Municipality



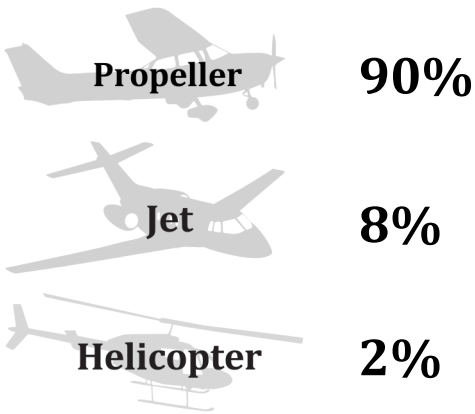
*Douglas County Unincorporated Population with Highlands Ranch Removed



*4 Households Not Shown

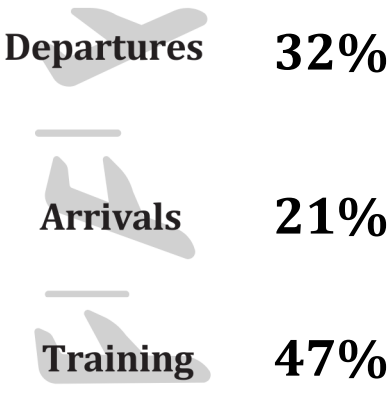
8. YEAR-TO-DATE 2025 NOISE COMPLAINT STATISTICS

Complaint by Aircraft Type



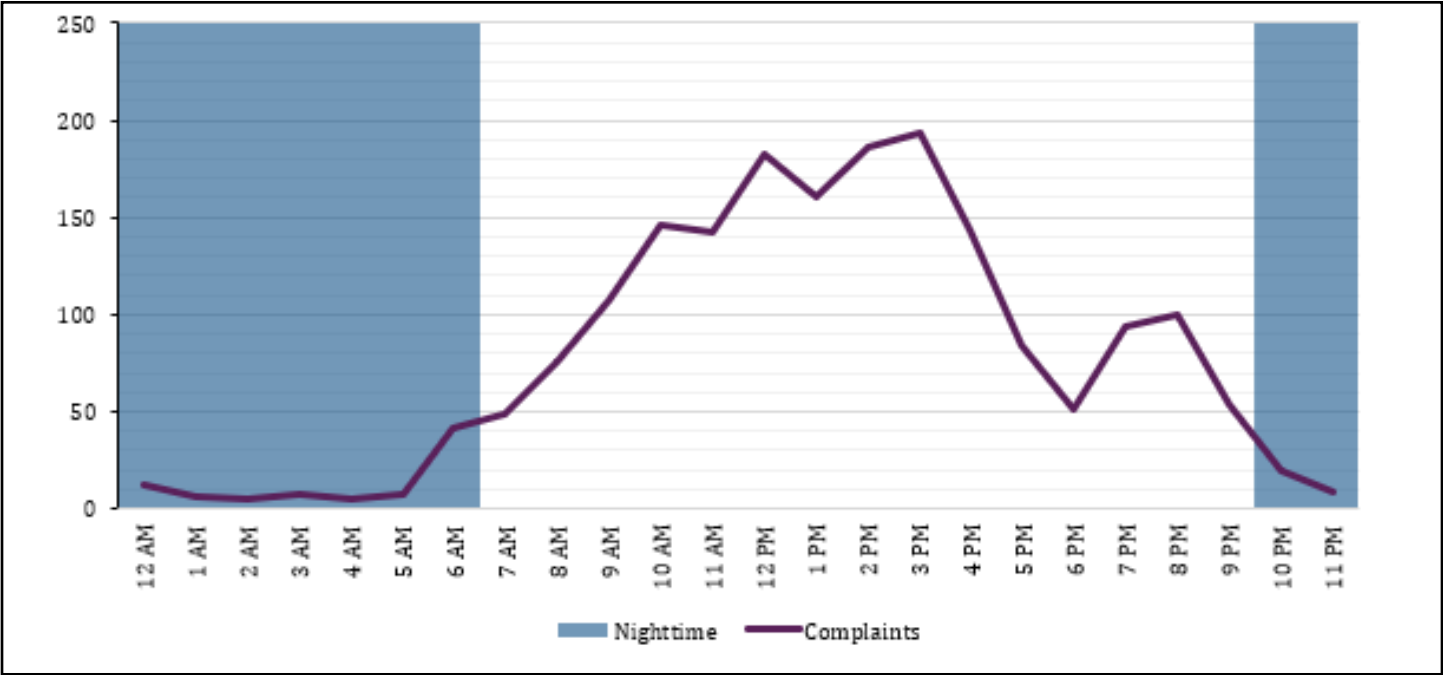
*#1 Household Removed

Complaint by Operation Type



*#1 Household Removed

Complaints by Hour

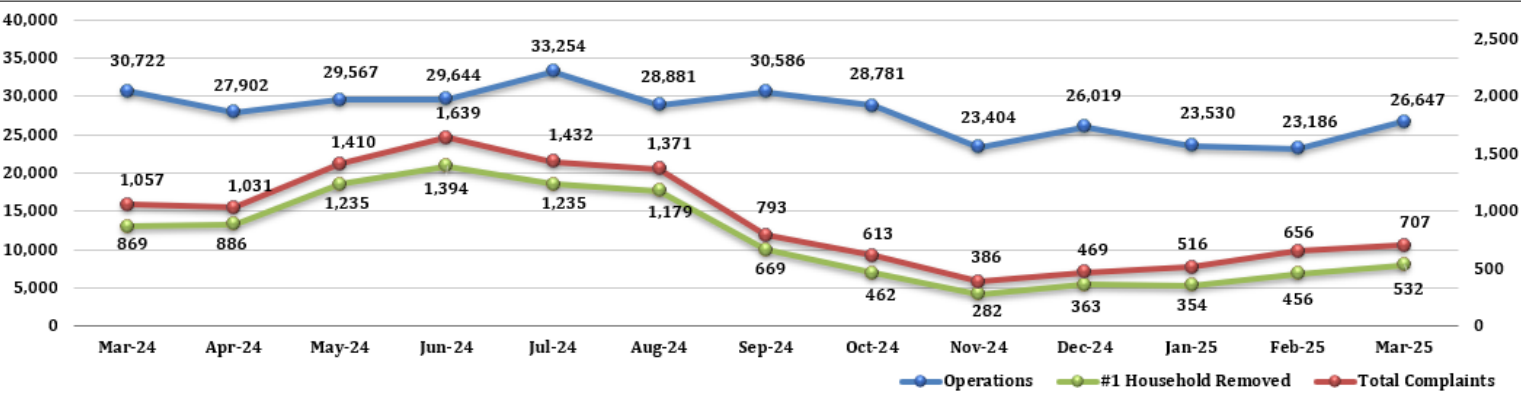


Noise Complaint Responses Completed	
Email	247
Phone	6
Total	253

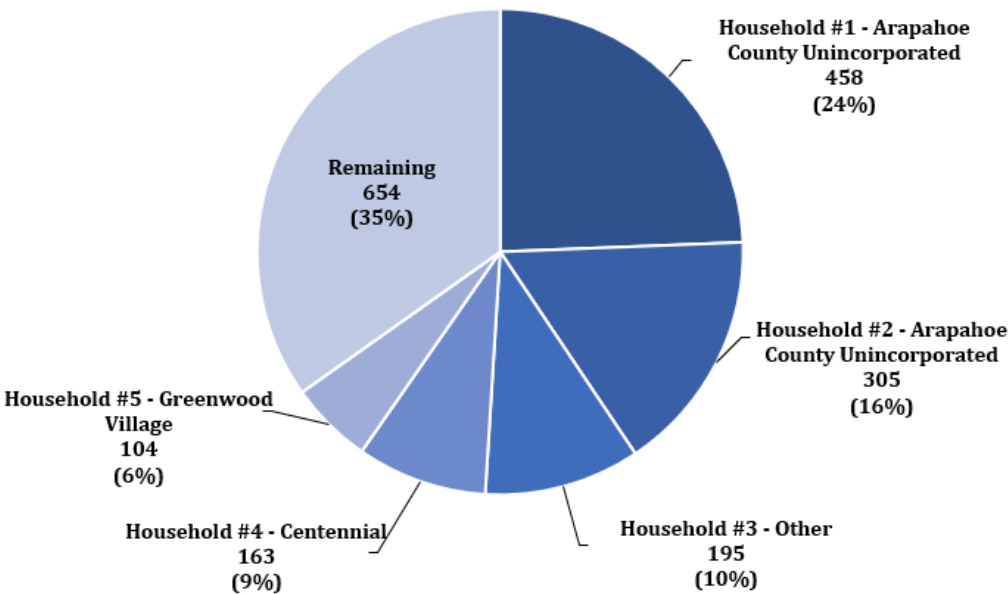
Time Complaint Received	
Day (7:00 AM—9:59 PM)	1,766
Night (10:00 PM—6:59 AM)	113
Total	1,879

8. COMPLAINT STATISTICS

13-Month Trend



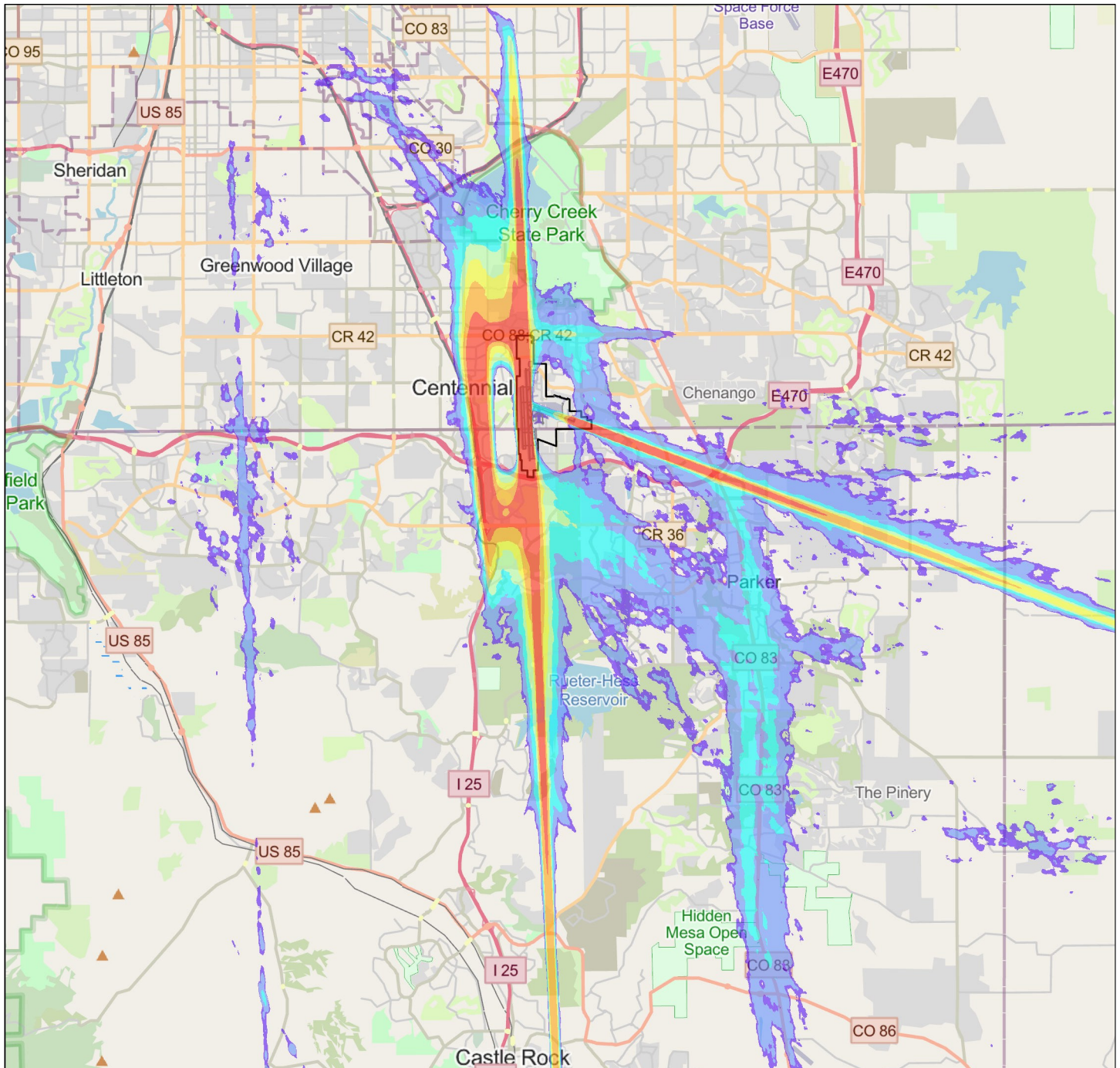
Top 5 Household Complaints YTD



9. CENTENNIAL AIRPORT RADAR TRACK DENSITY MAP

This 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 2025



Lower Density Traffic

Higher Density

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

CAUTION
STUDENT PILOT TRAINING AREA
PRACTICE AREA ON 122.75

CAUTION
INTENSIVE STUDENT PILOT TRAINING AREA
CTC SE PRACTICE AREA ON 122.75



CENTENNIAL AIRPORT

PORTABLE NOISE MONITOR REPORT

PORTABLE NOISE
MONITOR LOCATION:

Highlands Ranch, CO

(Near University & Highlands Ranch Pkwy)

REPORT DATE:

04/30/2025

Visit Our Website

centennialairport.com



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.

2. NEIGHBORHOOD NOISE REPORT

Background

Installed in September of 2012, the Airport Noise and Operations Management System (ANOMS) enables Centennial Airport to monitor the amount of noise being generated over communities surrounding Centennial Airport. ANOMS collects, analyzes and processes data from multiple sources of information including a network of 12 permanent noise monitors located around Centennial Airport, noise complaints, FAA radar data and weather data. In addition, the Airport also has 2 portable noise monitors to provide aircraft noise information at specific locations that are not covered by the permanent noise monitors.

Description of Noise Monitoring Location

The portable noise monitor for this report was placed in Highlands Ranch, CO (Near University and Highlands Ranch Pkwy) on March 8th 2025. The monitor is located approximately 4.7 miles west-southwest of Centennial Airport.

Noise Level Reports

The Noise Level Reports summarizes measurement results at the noise monitoring site. The data presented summarizes the noise levels and the individual measured aircraft noise events. The noise data presents the measured noise during the period of the measurements for aircraft, community, and total noise in Day-Night Average Sound Levels (DNL's). DNL is a 24-hour time-averaged logarithmic sound exposure level with a 10 decibel (dB) nighttime (10 p.m. to 7 a.m.) penalty to account for the lower ambient noise levels during the nighttime hours. Aircraft noise is noise that can be correlated to aircraft in the vicinity of the noise monitor. Community noise is noise from all other sources such as vehicles, trains, and lawn mowers that all contribute to the overall ambient noise. Total noise is noise from all the above sources.

Daily aircraft noise levels can vary day to day primarily because different runways are used under different wind conditions, which affect where the aircraft fly. The daily noise levels measured, while this monitor was at this location, are indicative of the levels during the time period when the monitor was installed. It is not necessarily representative of the noise level on an annual basis.

2. NEIGHBORHOOD NOISE REPORT CONT'D

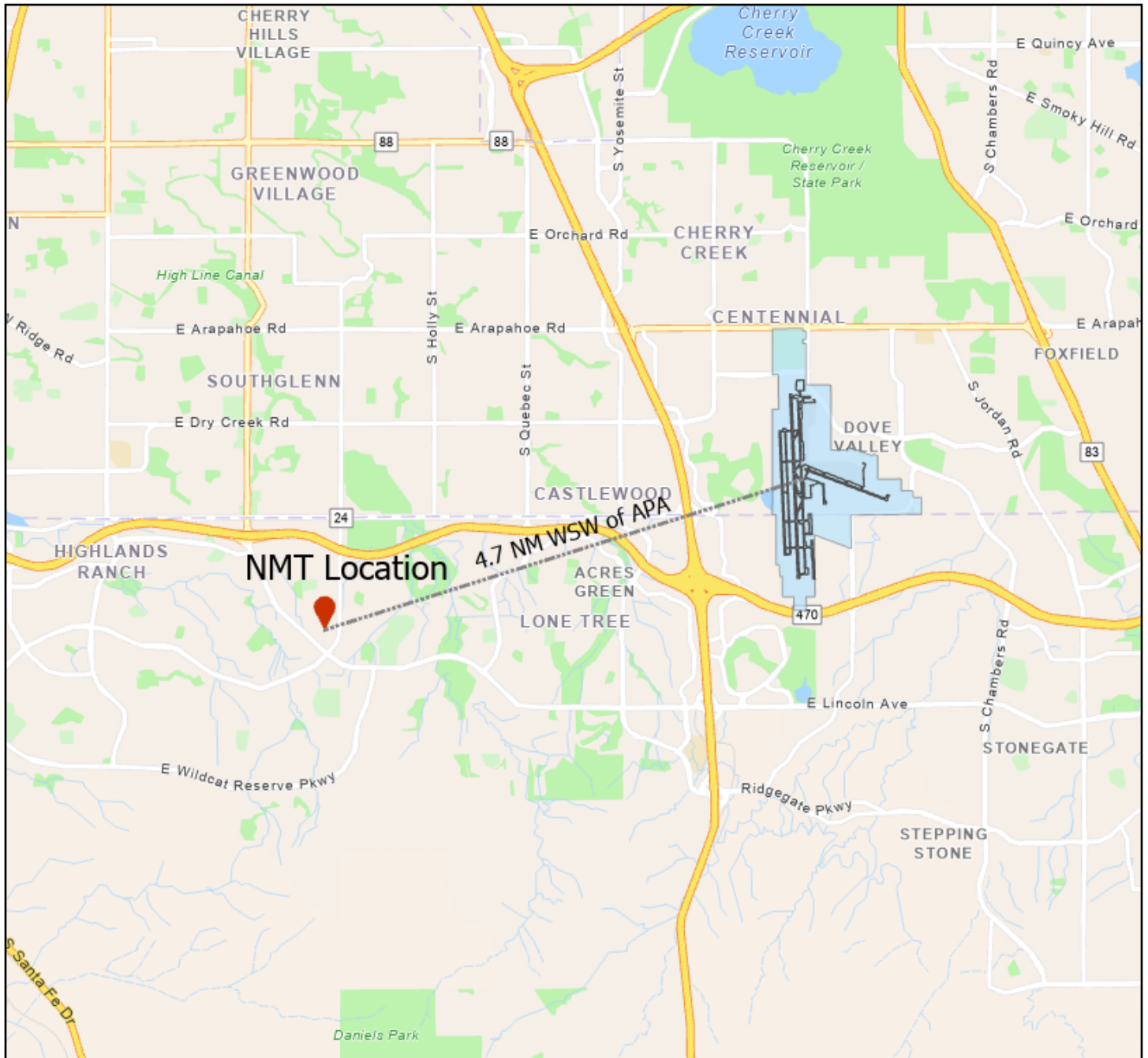
Report Date Range:

04/08/25 - 04/22/25

Location of Portable Monitor:

Highlands Ranch, CO (Near University & Highlands Ranch Pkwy)

4.7 Nautical Miles WSW of Centennial Airport



2. NEIGHBORHOOD NOISE REPORT CONT'D

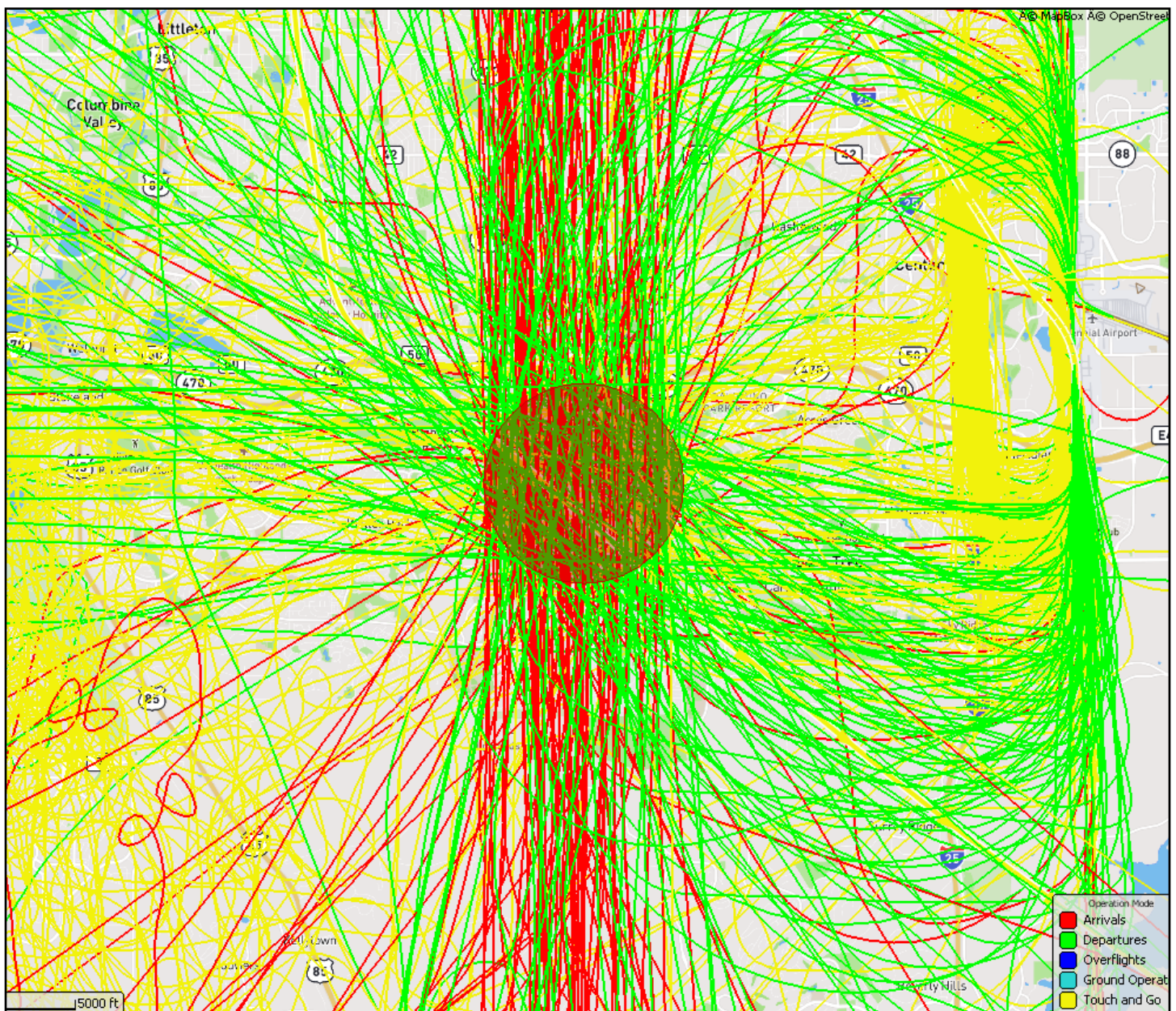
Centennial Airport Associated Flight Track within 1 Mile radius of NMT by Aircraft Type

Propeller	191
Jet	116
Helicopter	1
Total	308

Centennial Airport Associated Flight Track within 1 Mile radius of NMT by Operation Type

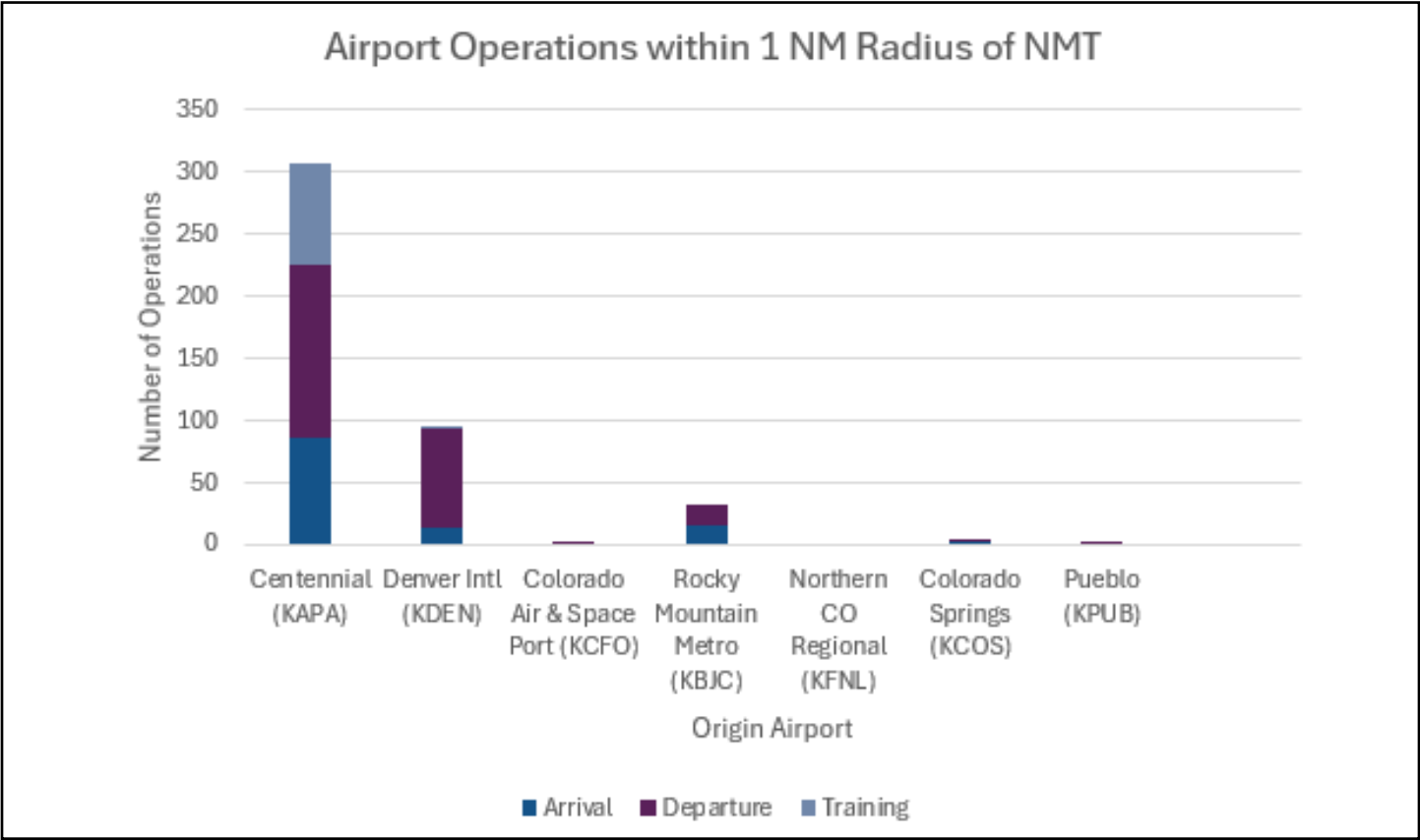
Arrival	87
Departure	139
Training	82
Total	308

Map of Flight Tracks that Passed within 1 Mile Radius of Noise Monitor



2. NEIGHBORHOOD NOISE REPORT CONT'D

The graph below illustrates a breakdown of arrival, departure, and training operations, along with the respective airport associated with each operation. This data is intended to highlight the airports linked to aircraft noise disturbances in the area surrounding the portable noise monitor.



Airport	Arrival	Departure	Training	Total
Centennial (KAPA)	87	139	82	308
Denver Intl (KDEN)	14	80	1	95
Colorado Air & Space Port (KCFO)	0	2	0	2
Rocky Mountain Metro (KBJC)	16	17	0	33
Northern CO Regional (KFNL)	0	0	0	0
Colorado Springs (KCOS)	3	2	0	5
Pueblo (KPUB)	0	1	0	1

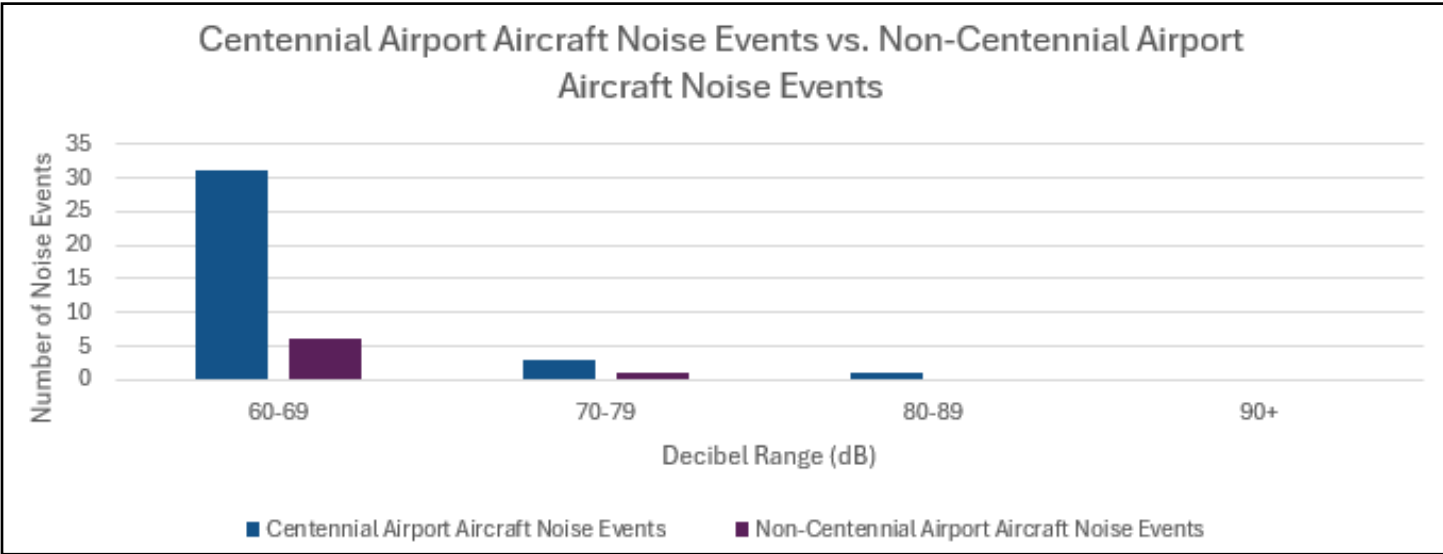
3. NOISE MONITOR STATISTICS

The following two pages display data metrics collected by the portable noise monitor. This data compares the average noise impacts from aircraft and from the surrounding community. Additionally, information is provided on the number of noise events detected by the monitor. The graphs on the next page illustrate the frequency of noise events within their respective categories, along with the corresponding decibel levels.

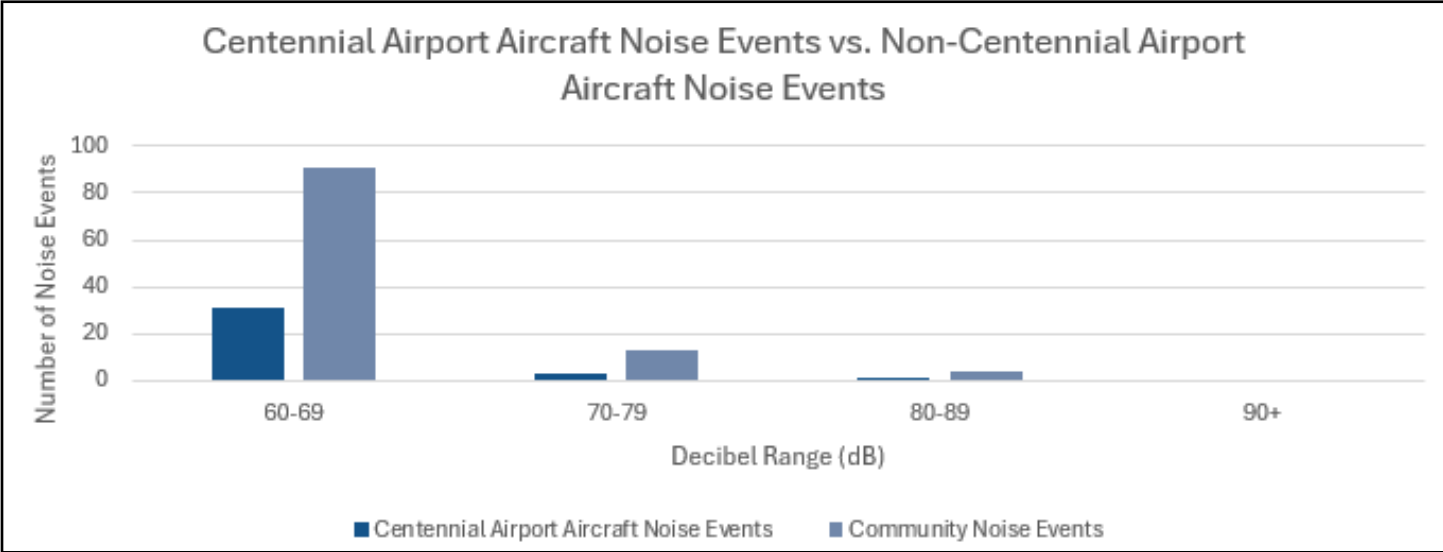
Noise Data		Noise Events	
Aircraft DNL (The 24-hour average sound level of aircraft with a 10dB penalty for nighttime noise events.)	26.1	Centennial Airport Aircraft Noise Events at Noise Monitor	40
Community DNL (The 24-hour average sound level of the community with a 10dB penalty for nighttime noise events)	49.2	Non-Centennial Airport Aircraft Noise Events at Noise Monitor	7
Total DNL (The 24-hour average sound level with a 10dB penalty for nighttime noise events)	49.3	Total Aircraft Noise Events at Noise Monitor	47
Average Aircraft LMax (dB) (The peak noise level for a single aircraft noise event)	64.6	Total Community Noise Events at Noise Monitor	127

- Aircraft Noise Event - Noise event linked to a specific aircraft operation based on time and radar data collected by ANOMS.
- Community Noise Event - Noise event related to a non-aircraft noise source like traffic, wind, animals, or vehicles.

3. NOISE MONITOR STATISTICS CONT'D



Decibel Range (dB)	Centennial Airport Aircraft Noise Events	Non-Centennial Airport Aircraft Noise Events
60-69	31	6
70-79	3	1
80-89	1	0
90+	0	0



Decibel Range (dB)	Centennial Airport Aircraft Noise Events	Community Noise Events
60-69	31	91
70-79	3	13
80-89	1	4
90+	0	0

4. 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

Re: "The Summit" at Meridian

Members of the Roundtable,

So this is going to sound harsh, but I have come to the conclusion that the locally elected leaders in charge of zoning really do not care about the future impact that their decisions will have on the future residents that will move to the homes they allow to be built. I was recently flying in the traffic pattern with a student, teaching him how to land. To my ABSOLUTE HORROR, I see a new housing development being built called "The Summit at Meridian." They might as well call it "Airport Noise at Meridian" because it is so close to the end of the runway.

I went to this location one day when only 3 planes were in the traffic pattern, and let me tell you, I was only there for 10 minutes and not once was there a break in plane noise for either the traffic pattern or jet departures. To make things even worse, the homes will only be about 2500-2900 feet away from the runway 35R threshold, making it dangerous for the people who will eventually live here and especially for pilots. HOMES ARE NOT SUPPOSED TO BE THIS CLOSE TO AN AIRPORT RUNWAY! Not to mention only 2000 feet away from the 2nd busiest GA airport in the USA.

These people will move in and ignore any aviation easements they will sign at closing. Because honestly, when the developer is dangling the keys to your new house in front of your face, who is going to read a 4 page aviation easement, along with a whole host of other disclosures. We will then repeat the cycle of 2022-2023:

1. People come to the CNR and complain and cuss at airport staff and CNR members
2. People realize the CNR is advisory only
3. People will then go to the airport board and demand illegal things (landing fees, Touch and go ban, curfews)
4. They will continue cussing at the CNR and airport board while they contemplate a lawsuit.
5. They will file a lawsuit and lose.
6. Repeat cycle.

If you all want to solve the problem of airplane noise around an airport (I can't believe I even have to put that in an email or say it out loud), then you need to get the cities and counties on board. Let me make this explicitly clear, with this neighborhood, there is no noise abatement in the world that will save these people, and any asks of the pilot community to help these future residents will likely be met with anger and instant dismissal. Rightly so in my opinion, because safety comes first. I honestly hope none of the homes sell. From what a certain Douglas County Commissioner has said to me at the Pilot/Controller quarterly meetings, it seems like Douglas County will continue to be part of the problem and not part of the solution. This new housing development proves that. Like I have said before, the people who run Colorado are housing developers and the elected leaders that seem to serve them.

Subject: CACNR Contact Form

From: Mike Koscielniak

RE: FAR 61.93, Solo cross-country flight requirements.

Dear CACNR Executive Team.

At the last meeting I volunteered to follow up on the question as to whether a solo student must stay within 25 nautical miles of an airport and was there any wiggle room on the "location" of the airport for flight planning.

I contacted (3) CFIs, (1) DPE and the FAA.

Here is the consensus:

1) All flight planning starts at the "middle" of the airport runway(s).

" 61.93 (a)(1)(i) clearly states any flight greater than 25 NM from the airport from where the flight originated. So, I would expect the distance to be measured from the airport, not the airspace."

2) "61.93(a)(1) states that except for paragraph (b) a student pilot must meet all of the other applicable section of 61.93 for a student pilot to fly greater than 25 NM from the originating airport. A student pilot could be endorsed to fly to a practice area more than 50 NM away as long as all the applicable requirements of 61.93 were met, but the student would not be able to log the flight as cross-country, and they would only be able to land back at APA.

For the flight to count as cross-country time the student must land at a point that is more than 50 NM straight-line distance of from APA, and they would have to have all the 61.93 training and endorsement requirements to fly to that specific airport that is more than 50 NM away."

Summary: A student pilot can fly greater than (25) nautical miles as long as the student has the required endorsement form their CFI.

Hope this helps, if you have any questions, please feel free to contact me.

Sincerely,

Mike Koscielniak



Centennial Airport Noise Compatibility Study

Arapahoe County Public Airport Authority

Welcome!

Agenda

- Introduction
- Forecasts
- Refresher on Noise Metrics
- Draft Noise Contours
- Land Use Analysis
- Alternatives Background
- **Alternatives Brainstorming Session**
- Questions/Comments

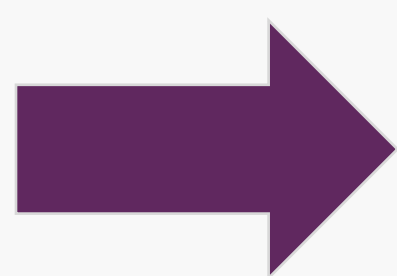
Purpose of Study

- The Study identifies and evaluates two components:
 - Aircraft noise
 - Land use
- The Study consists of two distinct, but complementary portions:
 - Noise Exposure Map (existing and forecast conditions)
 - Noise Compatibility Program
- The Study generally has a five-year planning horizon

Noise Exposure Map (NEM) is accepted by the Federal Aviation Administration.

Noise Compatibility Program (NCP): Measures are either approved or disapproved by the FAA. Approved measures contained in the Noise Compatibility Program are potentially eligible for federal funding.

Part 150 Study Process



Aviation Activity Forecast (2025-2035)

- Operations Forecast Development:
 - Existing Condition (2025)
 - 5-year Forecast Condition (2030)
 - 10-year Future Condition (2035) – Land Use Planning Only
- Fleet Mix review for baseline and forecast years
 - Utilize 2023 data from the Airport's Noise and Operations Monitoring System (ANOMS)
- Forecast has been reviewed and approved by FAA
- Approved Forecast operations used in the FAA's Aviation Environmental Design Tool (AEDT) for developing the aircraft noise exposure contours

Existing and Future Operations

Aircraft Type Category	Existing 2025		5-Year Forecast 2030		10-Year Forecast 2035	
	Fleet %	Operations	Fleet %	Operations	Fleet %	Operations
Piston (SE & ME)	73%	265,999	71%	274,439	68%	281,730
Turboprop	7%	26,673	8%	31,360	9%	35,995
Jet	17%	63,424	19%	75,252	21%	86,968
Rotorcraft	1%	4,427	1%	4,556	1%	4,666
Military	1%	3,745	1%	3,745	1%	3,745
Total Fleet Mix	100%*	364,268	100%*	389,352	100%*	413,104

Notes:
 SE – Single-Engine
 ME – Multi-Engine
 *Numbers may vary due to rounding

Source: APA ANOMS Calendar Year 2023; C&S Engineers, Inc.

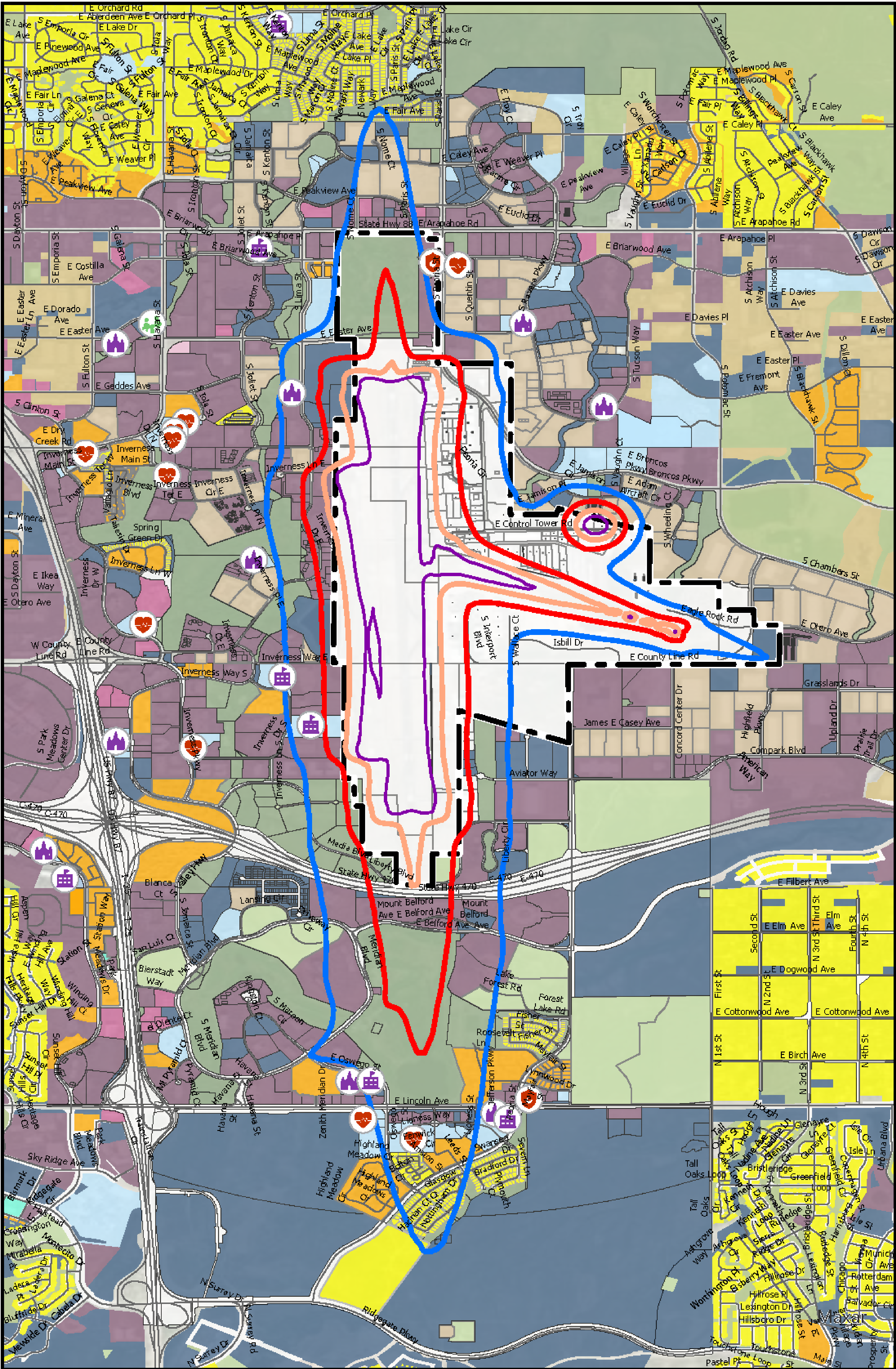
Noise Modeling Assumptions

- **DNL: Day-Night Average Sound Level**
(Required Noise Metric)
 - **Version 3f of the AEDT will be the primary model for generation of aircraft noise exposure contours**
 - **Noise levels, at 5 DNL increments, will range from 65 DNL to 75 DNL**
 - **Cumulative noise exposure**
 - **Inputs include:**
 - **Number of operations**
 - **Type of aircraft**
 - **Flight tracks**
 - **Nighttime weighting of 10 dB (10 pm to 7 am)**
 - **Meteorological Data (average annual weather based on location)**

2025 Draft Noise Contours

2025 Contours	Population	Housing Units
60-65 DNL	1,817	985
65-70 DNL	0	0
70-75 DNL	0	0
>75 DNL	0	0
Total	1,817	985

Per federal guidelines, noise-sensitive uses within the 65 DNL are noncompatible



Noise Sensitive Places

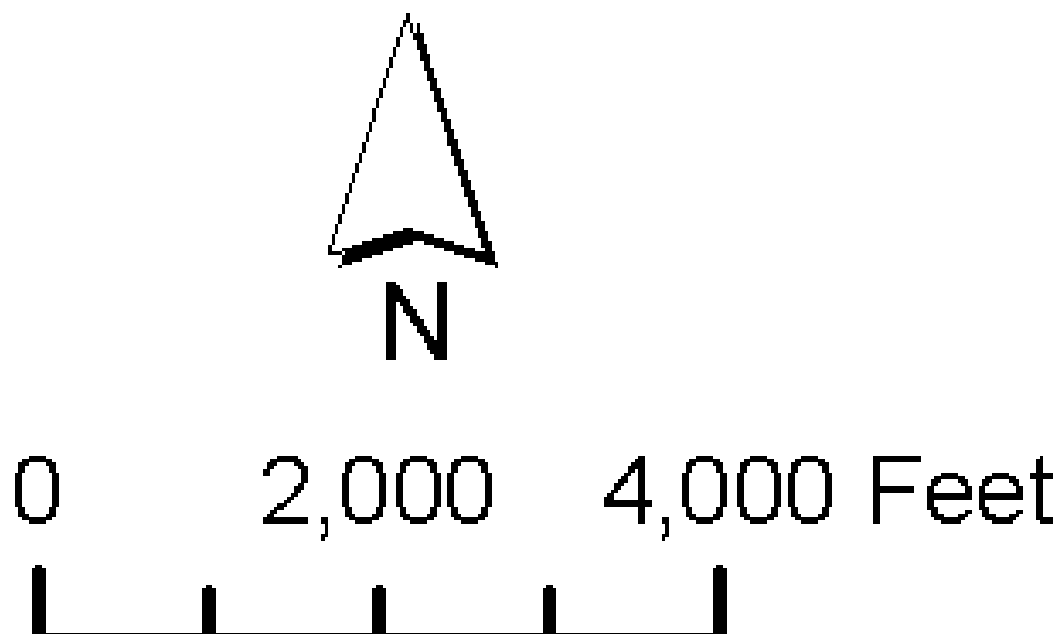
- Religious Facility
- Day Care
- Fire Station
- Medical Facility
- School

Land Use

- Airport
- Residential - Single Family
- Residential - Multi-Family
- Commercial
- Fire Stations
- Manufacturing and Production
- Mixed Use
- Public Use
- Transient Lodging
- Transient Lodging - Vacant
- Agricultural
- Open Space / Recreation
- Transportation
- Vacant / Undefined

Noise Contour

- 60 DNL
- 65 DNL
- 70 DNL
- 75 DNL
- Airport Property Line



Housing Units

1,268

0

0

0

1,268

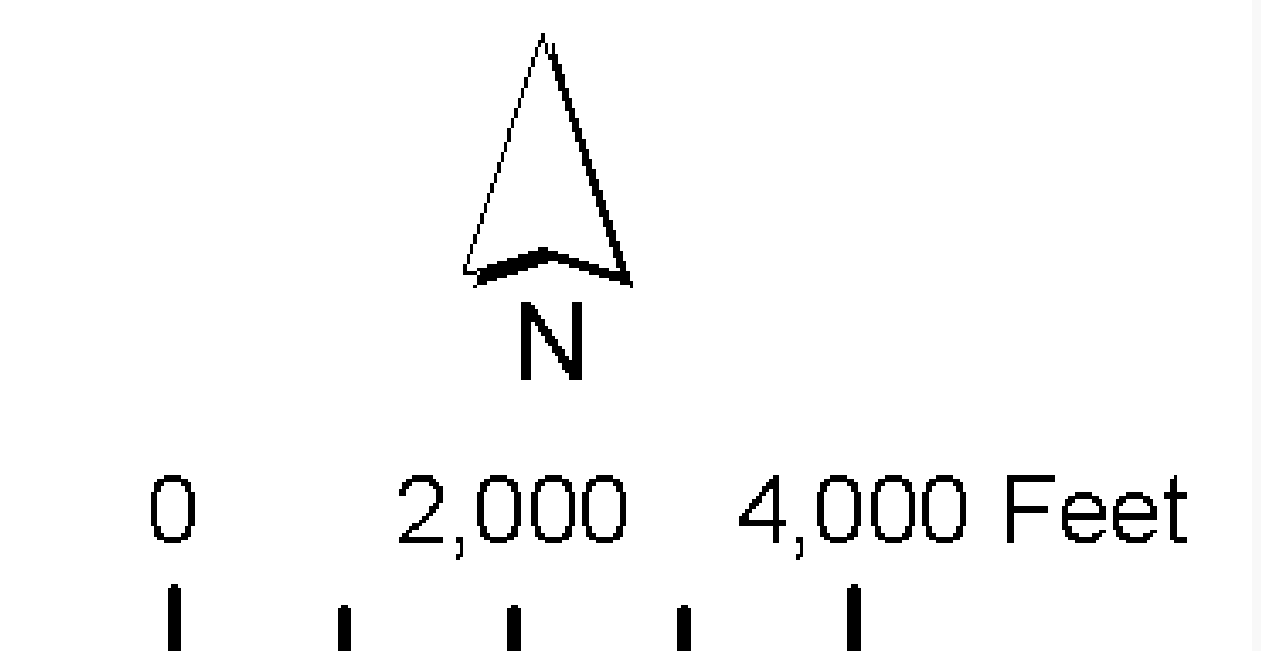
-  Day Care
 -  Fire Station
 -  Medical Facility
 -  School

Land Use

 -  Airport
 -  Residential - Single Family
 -  Residential - Multi-Family
 -  Commercial
 -  Fire Stations
 -  Manufacturing and Production
 -  Mixed Use
 -  Public Use
 -  Transient Lodging
 -  Transient Lodging - Vacant
 -  Agricultural
 -  Open Space / Recreation
 -  Transportation
 -  Vacant / Undefined

Noise Contour

 -  60 DNL
 -  65 DNL
 -  70 DNL
 -  75 DNL
 -  Airport Property Line

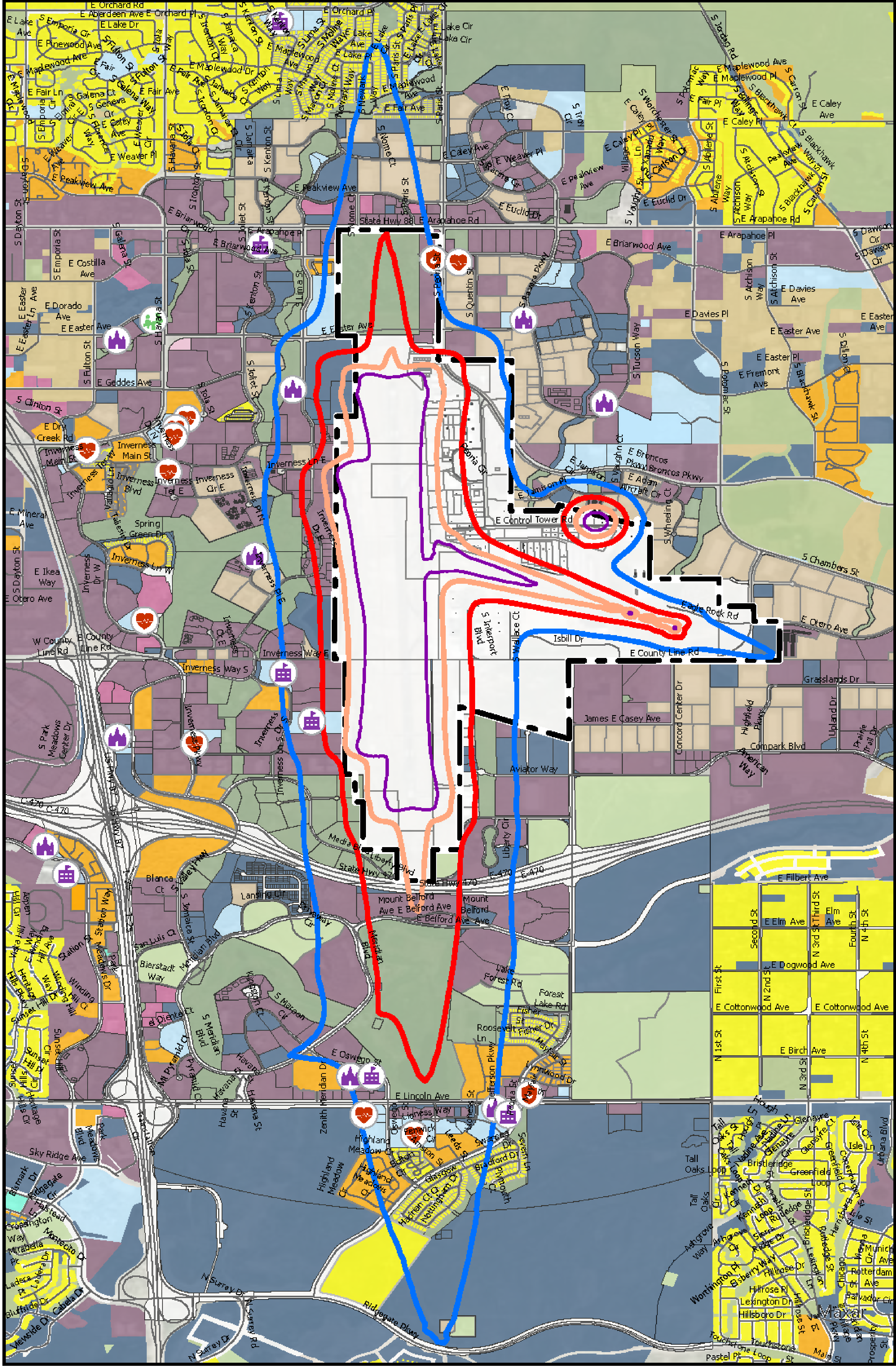


Per federal guidelines, noise-sensitive uses within the 65 DNL are noncompatible

2035 Draft Noise Contours – For Land Use Planning Purposes Only

2035 Contours	Population	Housing Units
60-65 DNL	2,954	1,552
65-70 DNL	0	0
70-75 DNL	0	0
>75 DNL	0	0
Total	2,954	1,552

Per federal guidelines, noise-sensitive uses within the 65 DNL are noncompatible



Noise Sensitive Places

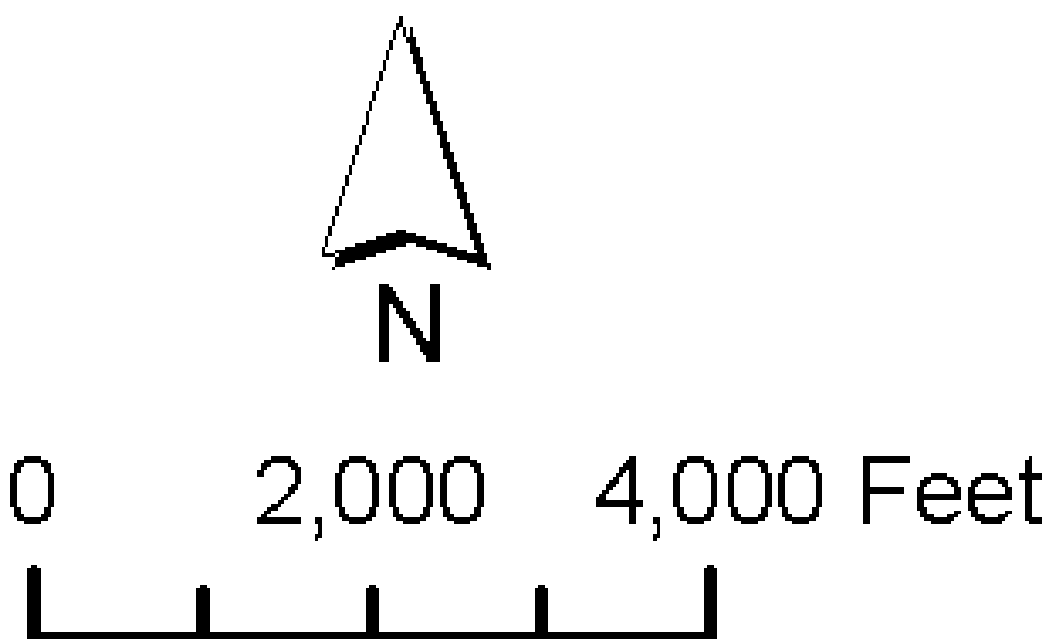
- Religious Facility
- Day Care
- Fire Station
- Medical Facility
- School

Land Use

- Airport
- Residential - Single Family
- Residential - Multi-Family
- Commercial
- Fire Stations
- Manufacturing and Production
- Mixed Use
- Public Use
- Transient Lodging
- Transient Lodging – Vacant
- Agricultural
- Open Space / Recreation
- Transportation
- Vacant / Undefined

Noise Contour

- 60 DNL
- 65 DNL
- 70 DNL
- 75 DNL
- Airport Property Line



Summary of Land Use

2025 Contours	Population	Housing Units	Area (Acres)	Religious	Medical	School
60-65 DNL	1,817	985	1,161	1	1	2
65-70 DNL	0	0	483	0	0	0
70-75 DNL	0	0	215	0	0	0
>75 DNL	0	0	299	0	0	0
Total	1,817	985	2,158	1	1	2

2030 Contours	Population	Housing Units	Area (Acres)	Religious	Medical	School
60-65 DNL	2,389	1,268	1,265	1	1	2
65-70 DNL	0	0	516	0	0	0
70-75 DNL	0	0	221	0	0	0
>75 DNL	0	0	310	0	0	0
Total	2,389	1,268	2,312	1	1	2

2035 Contours	Population	Housing Units	Area (Acres)	Religious	Medical	School
60-65 DNL	2,954	1,552	1,366	2	2	3
65-70 DNL	0	0	548	0	0	0
70-75 DNL	0	0	229	0	0	0
>75 DNL	0	0	318	0	0	0
Total	2,954	1,552	2,461	2	2	3

Source: Windshield Verification; Jurisdictional Land Use Maps of Douglas & Arapahoe Counties; 2020 U.S. Census Data.
 Note: Acreages have been rounded to the nearest acre.

Goals of Alternatives

- Part 150 requires evaluation of alternatives that:
 - Reduce existing noncompatible uses
 - Prevent or reduce the probability of the establishment of additional noncompatible uses
 - Do not impose undue burden on interstate and foreign commerce
 - Provide for revision in accordance with §150.23 of this Part
 - Are not unjustly discriminatory
 - Do not derogate safety or adversely affect the safe and efficient use of airspace
- Operational Alternatives – Federal Government
- Land Use Alternatives – Local and State Government
- Administrative Alternatives – Airport Sponsor

Goals of Alternatives

- Part 150 specifies use of the 65 DNL noise contour as the threshold contour for land use compatibility
- Residential land uses within the 65 DNL or greater noise contours are not compatible unless the residence has sound attenuation features
 - **No noncompatible land uses are located within the 65 DNL or greater contours**
- Part 150 requires evaluation of alternatives that:
 - **To the extent practicable, meet both local needs and needs of the national air transportation system, considering tradeoffs between economic benefits derived from the airport and the noise intrusion**
 - **Can be implemented in a manner consistent with all the powers and duties of the FAA Administrator**

Questions to Consider

- Does the action shift noise without meaningful overall noise reduction?
- Does the action affect safety?
- Does the action reduce airport capacity?
- Can the FAA approve and be able to implement the procedure?
- Does the procedure violate any existing statutes, rules or regulations, or grant assurances?
- How effectively does the action reduce noise?
- Does the action result in newly affected populations?

Potential Operational & Facility Alternatives

- Aircraft Operations
 - Departure Thrust Cutback (Departure Climb Profile)
 - Potential Modifications to Flight Procedures
- Airport and Airspace Use
 - Preferential Runway Use System
 - Power and Flap Settings
 - Denial of Use of Airport for Aircraft Not Meeting Federal Noise Standards
 - Limited by Part 161
 - *Capacity Limits Based on Defined Noise Limits*
 - *Landing Fees Based on Noise*
 - *Complete or Partial Curfews*
 - *Ban All Jet Aircraft*
 - *Touch-and-Go Restrictions*
- Airport Facilities
 - New Runway in Different Orientation
 - Runway Extension
 - High-Speed Exit Taxiways
 - Ground Run-Up Enclosure
 - Noise Barriers

Part 161: Restricts airport's ability to regulate airport access based on noise

Potential Land Use Alternatives

- Land Use Measures – Corrective
 - Acquisition of Land or Interest Therein
 - Sound Insulation
- Land Use Measures – Preventive
 - Zoning
 - Easements
 - Transfer of Development Rights
 - Building Code Modifications
 - Capital Improvements Program
 - Subdivision Regulations
 - Comprehensive Planning

Potential Administrative Alternatives

- Noise Program Management
 - Noise Monitoring Program
 - Continue or Modify CACNR
 - Continue or Modify FAA Study Group
 - Voluntary Fly Quiet Program

Next Steps

- Narrow Alternatives for Modeling
- Alternatives Analysis/Modeling
- Committee and Public Input on Alternatives
- Development of Recommendations and Noise Compatibility Program

Thank You!

Comments or Questions?
Submit here:



Please visit our website for additional study
events, news, and information here:

www.apa150noisestudy.com



Our Vision

Quieter Skies for Our Communities

Mission Statement

CACNR will bring together airport, community, FAA, and aviation industry representatives to collaboratively identify and discuss noise issues at Centennial Airport and recommend courses of action that could reduce noise over affected communities.

CENTENNIAL AIRPORT COMMUNITY NOISE ROUNDTABLE

APRIL 2nd - 2025 MEETING

- Presentation by Bill Wasmund – Airspace educational opportunity / better understanding & awareness of constraints in air / fine line approaching east training boxes
- Public Comment
 - Pilot Controller Safety Meeting – positive / fantastic collaborative / well attended
 - Louviers – quiet times being observed
 - Elbert County / 3 Towers – no relief / #2 on Noise chart
- Part 150 Study – April 9th – CACNR in attendance
- Bill Wasmund UC Davis Aviation Noise & Emissions Symposium FAA not present
 - Volume Increases – FONSI no support from FAA
 - Low Frequency Noise – flaps & landing gear penetrate more / lower min to 55 Dbl
 - Land Use – more problematic
 - FAA Noise Advisory Committee – 2 yr position / in process
 - Fleet Evaluation for Noise by Delta
 - ‘Number Above’ Measurement – more accurate measurement of sound vs DNL
 - Flight School Challenges & Opportunities - Zach hit/ very informative
- Airport Director Report
 - Flight School Safety & Noise Abatement Q1 Meeting applaud min standards /
 - Dashboard – summer release
 - Heat Map showing Training Boxes – address hot spot of complaints
 - Foreflight overlay of Noise Sensitive Areas – brought forth by flight school operator / collaborative effort
 - Legislative Lobbying DC – Normandy Group – support any effort / FAA back to table

MEMORANDUM

DATE April 1, 2025
TO ACPAA Board Members
FROM Zachary Gabehart-Noise & Environmental Specialist
RE Land Use Review

The following is a list of Land Use Development referrals that have been reviewed by Centennial Airport staff from 1/1/2025 through 3/31/2025:

Date	Previously Referred	Development	Location	Referring Entity	Type	Reco
1/1/2025	☐	Inova Aero Phase 2	7200 S Lima St	City of Centennial	I/C	S
1/8/2025	☐	Panorama Pointe	Panorama Cr.	City of Centennial	C/R	S
1/8/2025	☐	Panorama Pointe - REZONE	Panorama Cr.	City of Centennial	C/R	S
1/17/2025	☐	Ascent Classical Academy Addition	10004 Park Meadows Dr.	City of Lone Tree	C	A
1/21/2025	☐	The Capital Grille Park Meadows	9067 Westview Rd.	City of Lone Tree	C	S
2/14/2025	☐	King Soopers Marketplace at RidgeGate	RidgeGate Central Couplet District	City of Lone Tree	C	S
2/18/2025	☐	Canyonside Subdivision Filing No. 1 Lots 1 & 2	Hess Road and Cross Canyon Trail	City of Castle Pines	R	S
3/12/2025	☐	RidgeGate Southwest Village Filing No. 4	RidgeGate SW Village	City of Lone Tree	R	N
3/18/2025	☐	Lone Tree Justice Center	RidgeGate East Couplet	City of Lone Tree	C	S
3/26/2025	☐	Happy Canyon Tracts F,G,and J Rezone to Open Space	Happy Canyon	Douglas County	C	A
3/31/2025	☐	9000 E Nichols Ave Rezone	9000 E Nicholas Ave.	City of Centennial	R	S

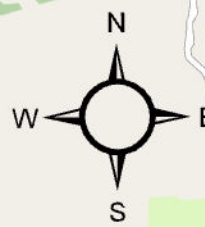
Type of Development
R = Residential
C = Commercial
I = Industrial

Recommendation
A = Approved as Submitted
S = Subject to Comment
N = Not Recommended

Q1 2025 Land Use Referrals Not Recommended by ACPAA

RidgeGate SW Village Filing No. 4

Map data © OpenStreetMap contributors, Microsoft, Facebook, Google, Esri
Community Maps contributors, Map layer by Esri



0 0.5 1 2 Miles

Map data © OpenStreetMap contributors, Microsoft, Facebook, Google, Esri
Community Maps contributors, Map layer by Esri

Pradera

CENTENNIAL AIRPORT

Community Noise Roundtable Study Group Committee



First Quarter 2025
Update Report
Published: May 2025
Report #7



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EXECUTIVE SUMMARY

The first quarter (Q1) 2025 report of the Centennial Airport Community Noise Roundtable (CACNR) Study Group Committee (Study Group) provides the progress on the mitigation efforts and possible results from those efforts to address the use of the extended traffic pattern by training aircraft at Centennial Airport (APA).

In Q1 2025, the number of touch-and-go aircraft on the extended traffic pattern decreased significantly to 7,408, down 2,940 from Q1 2024, when 10,348 aircraft entered. The percentage of touch-and-go aircraft on the extended traffic pattern also dropped from 50.7% in Q1 2024 to 44.0% in Q1 2025.

This is the seventh progress report from the Study Group. The first report focused on the establishment of the Study Group and six mitigation strategies the Study Group identified as viable that could be implemented in the near term or before the summer of 2024. The second report focused on mitigation strategies adopted in the fourth quarter of 2023 as well as mitigation strategies the Study Group has considered but not adopted. The third report focused on data analysis specifically comparing the first quarters of 2023 and 2024. The fourth and fifth reports focused on data analysis of their respective quarters. This report is focused on data analysis specifically comparing the first quarters of 2024 and 2025. Notable updates [\(all updates to previous information indicated in blue\)](#) reported in [this Q1 2025 report](#) include:

1. Proactive Outreach & Education to Flight Schools – report page 13
2. Proactive Checking of Extended Traffic During Nighttime Hours – report page 14

Suggestions and potential mitigations from the Roundtable and/or the public can be submitted to the Study Group for consideration using the Google Form provided in this document. For more information on previously submitted suggestions please refer to the **Feedback and Considerations for the Study Group** section on page 32 of this report.

The Study Group continues to meet to assess the viability of additional mitigations, measure and determine the success, if any, of adopted mitigation strategies, and consider modifications to strategies. As a reminder, preparing and publishing these progress reports on a quarterly basis is a Study Group goal. There may be delays in providing these quarterly reports, like the Q1 2024 Report. Our community's continued patience and understanding is appreciated as we work diligently to solve this complex problem of aircraft using the extended downwind traffic pattern for training purposes.

GLOSSARY of TERMS

ACPAA - Arapahoe County Public Airport Authority

ADO - FAA Airports District Office

ANCA - Airport Noise and Capacity Act

ANOMS™ - Airport Noise and Operations Monitoring System

APA - Centennial Air Traffic Control Tower

ATC - FAA Air Traffic Control

ATO - Air Traffic Organization

CACNR - Centennial Airport Community Noise Roundtable

CDOT - Colorado Department of Transportation

Centennial Airport Voluntary Noise Abatement Procedures - The creation of the voluntary noise abatement procedures was one of the recommendations from the previous Part 150 Study that concluded in 2008. Several stakeholders were involved in the creation of these procedures including the FAA, CACNR, ACPAA and based pilots and flight schools.

FAA - Federal Aviation Administration

Full Stop Taxi Back - aircraft lands on runway, comes to a full stop, taxis off runway and takes taxiway back to runway threshold before taking off and entering into the pattern traffic.

FTE - Full Time Employee, in this instance refers to the full time noise analyst hired by ACPAA after a recommendation of the CACNR/Study Group.

Itinerant - aircraft that are based at other airports

Minimum Standards – prescribe regulations for the conduct of commercial aeronautical activity as Centennial Airport and specific certain clauses which will be included in lease agreements permitting the conduct of such activities.

NATCA - National Air Traffic Controllers Association

N.O.I.S.E. - National Organization to Insure a Sound-Controlled Environment

Operation – Takeoff, landing, low-approach or missed approach. A touch-and-go consists of 1 take-off and 1 landing (2 total operations).

Preferred Traffic Pattern Area - Traffic pattern that is south of Arapahoe Road, North of Lincoln Avenue and East of Interstate 25.

Stop & Go's - aircraft lands on runway, comes to a full stop, then takes off again from the same runway and enters into the pattern traffic.

Study Group - Centennial Airport Community Noise Roundtable Study Group Committee

Touch & Go's - aircraft lands on the runway then takes off again and enters into the pattern traffic.

Traffic pattern - the typically racetrack shaped pattern aircraft fly in preparation for landing. Traffic patterns typically consist of an upwind, crosswind, downwind, base and final.

TPA - Traffic Pattern Altitude

BACKGROUND

In the fall of 2022, residents to the north and west of Centennial Airport began reporting an increase in flights on the extended aircraft traffic pattern over their communities, resulting in them reporting a degradation in their quality of life.

About the Study Group

Community, Centennial Airport Community Noise Roundtable (CACNR), Arapahoe County Public Airport Authority (ACPAA) Board, and Airport staff generated several potential solutions. Upon examination and realization that those solutions would not be easy to implement and, acknowledging a need for both flight schools and the FAA at the table, the need for a working group became apparent to effectively proceed through the legal and technical challenges and constraints.

Formation of Study Group

The formation of this Study Group came after a significant amount of feedback and support from the community, CACNR, ACPAA Board and Airport staff, elected officials including Senators Bennet and Hickenlooper, Congressman Crow, Governor Polis, Hon. State Representative Dickson, the Arapahoe County Commissioners, Greenwood Village Mayor and City Council, Cherry Creek School District, and the Normandy Group.

Creation of this Study Group was officially approved by CACNR on March 1, 2023 (see minutes of March 1, 2023 CACNR Meeting). In a preliminary meeting on July 6, 2023 with the FAA Regional Office, the FAA agreed to provide technical support to the Study Group provided confidentiality could be provided for the FAA representatives. In the initial meetings with the FAA Regional Office, it was acknowledged that: (1) the group would need to get started as quickly as possible and that there would be no specific end date to the group's work and (2) some mitigations would hopefully be able to be implemented quickly while others could take much longer to research, test, and implement.

Function of Study Group

The Study Group was formed to work collaboratively and address the community annoyance created by the extended traffic pattern. This group was solely tasked with addressing annoyance directly related to noise exposure from aircraft on the extended traffic pattern and not other environmental concerns such as lead emissions from aircraft. Although lead emissions are not the focus of this Study Group, implemented mitigations could have the side benefit of reducing lead emissions.

The group is designed to propose, test and/or implement, and measure the effectiveness of noise mitigation strategies to reduce - to the greatest practical extent - exposure to aircraft noise for the communities north and west of the airport without moving the noise to another community. formatting?

Working on an “as quickly as possible” basis, the group meets weekly or biweekly to generate ideas of potential strategies. These strategies are assigned to members of the Study Group to explore their viability with technical and/or legal experts and conclusions are brought back for the next possible meeting. Viable strategies are then recommended for implementation by responsible parties and implemented where possible. For strategies whose viability is still being determined, next steps are identified and pursued. Decisions on which strategies are moved forward or not are made unanimously by the Study Group members, aside from Mead & Hunt and HMMH whose participation is a supplement to the Part 150 Study Centennial Airport.

Composition of the Study Group

Based on the collaborative, working nature of the Study Group, the complexities of the issue, the speed of work, and the frequency of meetings, a small but representative group was identified and approved by CACNR. The Study Group participants, as presented in the table below, were selected to represent a broad range of stakeholders that would bring varying degrees of technical expertise and experience to the group. This included participants with a direct link to the affected community and CACNR, experience with national and local noise issues, legal, pilot and air traffic background and technical expertise, and pilots and airport tenants that would or could be directly affected by any mitigations proposed or recommended by the Study Group. The Study Group also includes and meets with additional experts as needed to provide additional legal and technical input on the proposed mitigation strategies.

The CACNR Study Group Committee

Member	Position	Affiliation(s)
Brad Pierce	Chair	CACNR member, N.O.I.S.E. President, former Aurora City Council member
Chris Eubanks	Member	CACNR Chair, Pilot, Castle Pines City Council member
Jessica Campbell	Member	ACPAA Board member, Arapahoe County Commissioner (Dist. 2)
Mike Fronapfel	Member	ACPAA Executive Director, CACNR ex-officio member
	Member(s)	Flight school representatives as available
	Member	FAA Management
	Member	Airport Traffic Control
	Member	National Air Traffic Controllers Association
Kate Andrus	Advisor	Part 150 Consultant to APA – PM
Gene Reindel	Advisor	Part 150 Consultant to APA – Noise
Airport Staff	Technical Advisors	APA Noise Office

History of Study Group

The first Study Group meeting was held on July 21, 2023. The first through third meetings covered the rules and guidelines of the Study Group including the confidentiality of the FAA and Flight School participants, procedure for updates and communication to the public and elected officials, identifying and defining the problem and the drivers that are the cause of the problem. Beginning with the fourth meeting, the Study Group focused on identifying mitigation strategies, data and information needed, feedback from members and technical experts on the viability of potential strategies, and results of implementation measures through data analysis by the Airport staff.

ABOUT THE PROBLEM

Challenges and Limitations

There are several challenges with finding viable mitigations to the problem. Those challenges include, but are not limited to the following: maintaining safety, physical constraints, airspace limitations, variation in the mix of aircraft type, aircraft performance limitations, legal limitations (Interstate commerce law, Airport Noise and Capacity Act (ANCA), grant assurances, unreasonable access restrictions, unjust discrimination prohibitions, contractual limitations) controller and pilot workload, the ability of the FAA and Airport to reasonably manage and implement mitigations.

Drivers and Variables

The Study Group identified several drivers for the extended pattern including the May 2021 midair accident that occurred north of the airport, the resulting changes in how the FAA managed the aircraft in the pattern, increases in aircraft traffic/operations, itinerant traffic, variation of aircraft type, inconsistency among flight schools, specific training operations like stop and goes and taxi backs.

Variables the Study Group identified include aircraft arrivals, aircraft type (speed), operation type, weather, pilot comfort/ability and non-scheduled operations.

MITIGATION STRATEGIES

Mitigation strategies are any implementable program, measure, or action aimed to reduce the number of flights and noise north and west of the airport.

APPROACH TO MITIGATION STRATEGIES

The Study Group structures its work from a list of mitigation strategy ideas. These mitigation ideas come from community members, Study Group members, and examples from other airports. The list is not fixed. As ideas are brought forward, they are added to the list for assessment. The Study Group will assess every idea that is brought forward.

During the third quarter of 2023, the Study Group did an initial review of all mitigation ideas on the list at the time and ranked them from easiest (cheapest, most clearly legal, few administrative steps, fastest) to the hardest (most expensive, no clear legal authority, many steps to implement, would take years to implement). As new ideas come in, they are evaluated and ranked. Given that the Study Group is designed to implement potential fixes sooner rather than later, it has started with the “easiest to implement” mitigation ideas.

The Study Group assesses each idea from the angle of the overflights it seeks to reduce, its direct connection to overflights or noise, which entity has the authority to approve the mitigation strategy, which entity is responsible for implementation, whether an entity has the legal authority to implement it, its potential effect on safety, whether it will reduce overflights, whether it is technically possible to implement, and whether it is practically feasible to implement. When appropriate, the Study Group refers ideas to relevant experts.

Because the goal is to implement strategies as quickly as possible, decisions made by the Study Group are unanimous. Mitigation strategies that are adopted are then referred by the Group to the relevant entity (CACNR, ACPAA, FAA-ATC, etc.) to implement.

Strategies that are considered but not adopted by the Study Group fall into one or more of five categories: (1) there is not legal authority to implement the strategy, (2) the strategy would decrease safety, (3) it will not reduce overflights or noise, (4) it is not technically possible to implement, (5) it is practically unfeasible to implement. Strategies that fall into categories (4) and (5) may be pushed to the bottom of the list for further evaluation rather than be permanently ruled out.

The following two sections ***Adopted Mitigation Strategies*** and ***Mitigation Strategies Considered but not Adopted*** lay out mitigation strategies in three categories, first in a table and then with further explanation as appropriate. These categories are FAA - ATC strategies, Pilot Education/Awareness strategies, and ACPAA Operations strategies.

ADOPTED MITIGATION STRATEGIES

FAA-ATC STRATEGIES

Maintain and enhance operational safety, increase air traffic controller awareness of noise sensitive areas, reduce aircraft overflights of the community.

Utilize East Side of Airport During Nighttime Hours	
Adopted Mitigation Strategy:	During the late evening and early morning hours when FAA - ATC determines it's possible, utilize Main Runway (17L/35R) so that pattern work is conducted east of the Airport over commercial areas.
Problem Mitigation Addresses:	Pattern traffic over the community during late evening and early morning hours
Reduction of Noise Exposure:	Reduce the amount of late evening and early morning pattern traffic over the community.
Safety:	Maintained
Noise:	Reduced during nighttime hours
Authority to Approve:	FAA-ATO
Responsible for Implementation:	FAA-ATO
Implementation Date:	October 2023
Explanation:	In effort to be a good neighbor to our communities, it has been added to our facility's Standard Operating Procedures for controllers to utilize the east side of the airport for the traffic pattern when volume permits during late night and early mornings. This will place aircraft primarily over businesses and industrial parks instead of neighborhoods.
Measurable Impact:	Data on the number of flights directed away from neighborhoods during nighttime hours will be included in future reports
Updates:	All current and future air traffic controllers have or will receive(d) briefings/training regarding this adopted mitigation.

Noise Sensitive Areas on the Tower Radar Display	
Adopted Mitigation Strategy:	Noise sensitive areas added to radar display in the tower.
Problem Mitigation Addresses:	ATC awareness of noise sensitive areas in relation to aircraft in the traffic pattern.
Reduction of Noise Exposure:	By assisting ATC in identifying noise sensitive areas more easily, ATC be more aware of when overflights of the community are occurring.
Safety:	Maintained
Noise:	Potential reductions
Authority to Approve:	FAA-ATO
Responsible for Implementation:	FAA-ATO
Implementation Date:	October 2023
Explanation:	These maps will provide Air Traffic Controllers with awareness of the surrounding communities. While sequencing aircraft into 17R and 17L, controllers have to make the decision to extend the 17R traffic to follow traffic inbound to 17L or have the 17R aircraft complete a short approach. The maps aid the controllers in seeing the community and knowing the impact of extending to the North.
Measurable Impact:	ATC will collect data from controllers on their use of the maps.
Updates:	All current and future air traffic controllers have or will receive(d) briefings/training regarding this adopted mitigation.

Limit Number of Aircraft in the Pattern	
Adopted Mitigation Strategy:	Limit number of aircraft in traffic pattern
Problem Mitigation Addresses:	Extended pattern traffic and increased noise exposure to the community
Reduction of Noise Exposure:	Fewer aircraft could result in the traffic pattern being extended less frequently
Safety:	Maintained
Noise:	Potential reduction
Authority to Approve:	FAA-ATO
Responsible for Implementation:	FAA-ATO
Implementation Date:	Ongoing
Explanation:	Air traffic will limit the number of aircraft in the traffic pattern to ensure controller workload is manageable and maintain a safe, orderly and efficient flow of traffic. Restricting the number of aircraft in the pattern for safety and to manage controller workload also results in a flight path closer to the runway's final approach course, which benefits the community by reducing noise levels.
Measurable Impact:	Data is forthcoming
Updates:	Ongoing

Pilot Education & Awareness Strategies

To increase pilot education and awareness of community noise concerns, and to share mitigation strategies they can implement to reduce the communities' noise exposure.

Adopted Mitigation Strategy:	Noise Abatement Information on Chart Supplement
Problem Mitigation Addresses:	Centennial Airport receives flights from all over the US. Transient pilots are thus not always aware of the noise sensitive areas or preferred traffic pattern
Reduction of Noise Exposure:	A Chart Supplement is information provided about a local airport environment. Pilots are expected to review a chart and its supplements before taking flight. Enhanced awareness will drive a reduction in overflights of noise sensitive areas when pilots have discretion
Safety:	Maintained
Noise:	Potential reduction
Authority to Approve:	ACPAA & FAA
Responsible for Implementation:	ACPAA, FAA, & CDOT
Implementation Date:	Completed Fall 2024.
Explanation:	ACPAA is working to update the current chart supplement. There are several updates and/or enhancements to the chart supplement that can be made to improve its efficacy as a communication and education tool.
Measurable Impact:	Once implemented, ACPAA will work to amplify. True impact may not be measurable, but will likely contribute to an overall reduction in noise.
Updates:	Noise Abatement Information updates are now fully published in the SW US Chart Supplement. Airport Staff completed and submitted updated Chart Supplement information to the FAA for publication. Updated language as well as a graphical depiction of noise abatement information was added. This information includes several aspects of the airport's Voluntary Noise Abatement Guidelines including the preferred pattern area and a graphical depiction of noise sensitive areas.

Proactive Outreach & Education to Flight Schools	
Adopted Mitigation Strategy:	Develop and implement proactive outreach and education program to flight schools to increase pilot awareness of voluntary fly quiet procedures and preferred pattern area
Problem Mitigation Addresses:	Due to rapid turnover, flight school instructors and students are often unaware of noise issues, voluntary noise abatement procedures, or preferred traffic pattern area.
Reduction of Noise Exposure:	By developing & implementing a proactive outreach and education program, will keep flight instructors up to date on noise abatement efforts.
Safety:	Potential enhancement
Noise:	Potential reductions
Authority to Approve:	ACPAA, FAA-ATO
Responsible for Implementation:	ACPAA, FAA -ATO
Implementation Date:	In progress
Explanation:	There is a significant amount of flight instructor and student pilot turnover at flight schools based at Centennial Airport. Airport staff and local FAA representatives have committed to meeting quarterly with each flight school to discuss ways to make their operations safer, convey community concerns about noise and lead exposure, discuss recommendations on how they can help mitigate the noise exposure to the surrounding communities and to provide progress updates on how our voluntary noise abatement and mitigation procedures are working, and to explore ways to improve on them.
Measurable Impact:	The initial focus will be on outreach and establishing regular meetings
Updates:	The fifth meeting took place on March 26th. Over 25 flight school personnel attended. Air Traffic Personnel were unable to attend. Airport staff discussed Noise Abatement Guidelines, practice area usage, and examined current noise data. The second meeting of 2025 is June 25th. Changes to the Centennial Airport Minimum Standards as of January 1, 2025 require flight schools to participate in these meetings, as well as have a local point of contact on airport to receive safety and noise abatement information.

ACPAA Operations Strategies

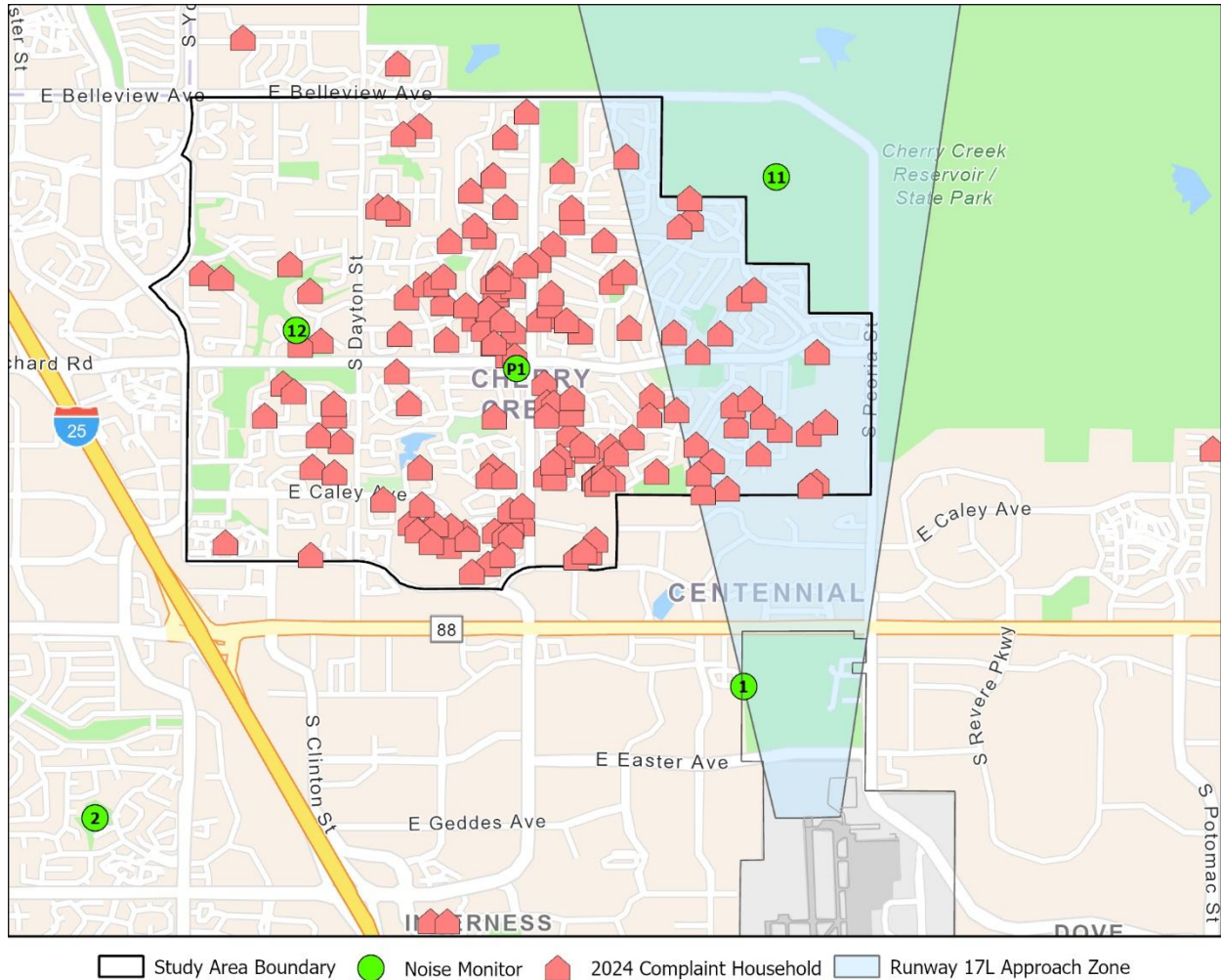
To provide methods to proactively identify and measure improvements in community noise exposure and the effectiveness of the implemented mitigation strategies.

Proactive Checking of Extended Traffic During Nighttime Hours	
Adopted Mitigation Strategy:	Airport staff will check for extended pattern traffic during nighttime hours (10 pm - 7 am) daily.
Problem Mitigation Addresses:	The occurrence of extended pattern traffic during nighttime hours (10 pm - 7 am).
Reduction of Noise Exposure:	By having Airport staff monitor outlier nighttime extended pattern traffic on a daily basis, the airport can quickly respond to outliers, and when able, determine causes and work to prevent the instances from occurring in a more proactive manner.
Safety:	Maintained
Noise:	Potential reduction
Authority to Approve:	ACPAA
Responsible for Implementation:	ACPAA
Implementation Date:	October 2023
Explanation:	Starting in October 2023 Airport staff began to actively track aircraft flying an extended pattern during night-time hours (10 pm - 7 am). If an aircraft is observed conducting an extended training pattern during night-time hours and there is no other aircraft in the pattern or on approach to a parallel runway airport staff will identify and contact the flight school and/or pilot and remind them to follow the voluntary noise abatement guidelines that specify keeping the pattern traffic south of Arapahoe Road, east of I-25 and north of Lincoln Avenue.
Measurable Impact:	Data is forthcoming. A handful of outliers have been identified since fall of '23. With the hire of an Airport data analyst, data will be more reliable. Reduction will be in the prevention of recurrence and ideally contribute to the overall reduction in overflights.
Updates:	The Noise Analyst in conjunction with the Noise and Environmental Specialist have been regularly looking at nighttime outliers and analyzing data. In Q1 2025 4 nighttime outlier aircraft were identified and contacted by the Noise and Environmental Specialist and reminded of the Voluntary Noise Abatement Guidelines. Outreach continues when nighttime outliers are identified.

Airport Add Full-Time Employee for Data Analysis	
Adopted Mitigation Strategy:	Airport hire a full-time employee dedicated to data analysis
Problem Mitigation Addresses:	Improve airport staff's ability to provide investigation, analysis and reporting of data from Airport Noise and Operations Monitoring System (ANOMS)
Reduction of Noise Exposure:	Uniform data on overflights is needed to measure the extent of overflights, noise exposure, and the results of mitigation strategies.
Safety:	An enhanced understanding of flight data will help the Airport better work with the FAA to identify mitigation strategies that will maintain or enhance safety while addressing overflights.
Noise:	A full understanding of flight data is essential to addressing the overflights.
Authority to Approve:	ACPAA
Responsible for Implementation:	ACPAA
Implementation Date:	Hired February of 2024
Explanation:	In February 2024, Centennial Airport created a new full-time position to support our Noise and IT Departments. This new employee will in-part focus on analyzing historical and ongoing flight data to evaluate within the defined study areas the effectiveness of the Study Group's implemented mitigation strategies. Updates on effectiveness of the implemented mitigations will be included in future reports.
Measurable Impact:	Indirect. This position enables us to measure the impact of mitigation strategies.
Updates:	The full-time employee continues to do various data analysis tasks for the Study Group to evaluate the overflights and as well as examining the effectiveness of implemented mitigation strategies. This report includes data prepared by the Noise Analyst.

Analyze Flight Track Data within the Defined Study Area	
Adopted Mitigation Strategy:	Analyze flight track data within the defined study area north and west of the airport.
Problem Mitigation Addresses:	Understanding the history of flights and current flights in the study area is essential to addressing the overflights and measuring the impact of mitigation strategies.
Reduction of Noise Exposure:	Ultimately this analysis will lead to mitigation strategies that reduce noise exposure.
Safety:	Indirect positive impact as the Study Group and Airport work with the FAA.
Noise:	Potential Reduction
Authority to Approve:	ACPAA
Responsible for Implementation:	ACPAA
Implementation Date:	February 2024
Explanation:	In consultation with the community, the Airport noise program staff, and informed by historical data, the Study Group has identified the below boxed area in the map to focus its data analysis. The area of analysis will encompass the residential areas bordered generally by DTC Blvd to the west, E Belleview Ave to the north, S. Peoria St to the east and E. Peakview Ave to the south. The flight tracks will be filtered to include only local training pattern traffic. This will also allow us to separate out the aircraft that are arriving and departing the main runway versus aircraft that are likely flying in the training traffic pattern. This area map includes the general location of homes that filed noise complaints with the airport in 2023 as well as the locations of the permanent and portable noise monitor locations. Please see the proposed study area maps below.
Measurable Impact:	Indirect.
Updates:	Data Analysis Ongoing. See page 24 for update on data analysis and mitigations.

Defined Study Area Map



Note: The red polygons indicate households that filed complaints with the Airport in 2024. The black line represents the boundary of the Study Area. In this graphic, unlike those presented in monthly noise reports, polygons are not scaled based on the number of complaints. Complaints in the RY 17L Approach Zone are less in number. That area experiences a different pattern of traffic and is related but distinct from the areas to the west of the RY 17L Approach Zone.

MITIGATION STRATEGIES CONSIDERED BUT NOT ADOPTED

The Study Group identified a number of possible actions that **were not accepted** because they (1) decreased safety or (2) did not negatively impact safety but did not reduce noise.

FAA-ATC STRATEGIES

Maintain and enhance operational safety, increase air traffic controller awareness of noise sensitive areas, reduce aircraft overflights of the community.

Go Back to Previous Air Traffic Management	
Rejected Mitigation Strategy:	Go back to previous air traffic management: less positive control, parallel landings
Problem Mitigation Addresses:	Extended pattern traffic and increased noise exposure to the community.
Reduction of Noise Exposure:	Less aircraft overflights.
Safety:	Safety decreased
Noise:	Potential reduction
Authority to Approve:	FAA- ATO
Responsible for Implementation:	FAA- ATO
Reason Strategy Not Adopted:	The FAA's primary responsibility is managing air traffic in the safest and most efficient way possible. Positive control and staggering of landings increase safety. Air Traffic Controllers call base turns for aircraft for safety reasons and ATC has seen an improvement in safety at Centennial Airport because of the safety mitigation. Calling 17R base turns to "stagger" with traffic on 17L helps ensure safe and efficient operations. See below for further explanation.

On May 12, 2021, there was a midair collision between a Cirrus aircraft and a Metroliner while the aircraft were inbound to Centennial Airport. The Cirrus was on a right base turn¹ for runway 17R and the Metroliner was straight in for runway 17L. The Metroliner continued and landed on Runway 17L and the Cirrus landed in Cherry Creek State Park utilizing the pilot's airframe parachute.

¹ Base turn is a phase during the aircraft's traffic pattern for landing. It involves making a 90-degree turn from the downwind leg toward the final approach.

The FAA's continuing mission is to provide the safest, most efficient aerospace system in the world. While the collision did not result in injuries or fatalities, the Centennial Air Traffic Control Tower (APA) conducted an evaluation of safety into and out of the Centennial Airport.

At this time, the common practice was for aircraft to fly the 17R traffic pattern (west of APA) independently of the traffic on 17L.

APA identified the following data for activity between June 24, 2019 and June 24, 2021 (including the time frame in which the collision occurred):

- **Wrong Surface Landing²:** APA had 5 wrong surface landings and 4 reports of aircraft lined up for the wrong runway and corrected by ATC.
- **Pilot Initiated Go Around due to Collision Avoidance Resolution Advisory (TCAS RA)³:** APA had 37 go arounds due to aircraft responding to a TCAS RA for traffic on the parallel runway.
- **Suspected Surface Loss Involving Two Aircraft⁴:** APA had 14 reports of suspected loss of surface separation between two aircraft.

After evaluating these events, APA determined that air traffic controllers would stagger the arrivals into 17R and 17L. This procedure protects for aircraft that fly through their final⁵ and enhances safety with positive control⁶, rather than depending on pilots to see each other, using Visual Flight Rules (VFR). As a result, Air Traffic Controllers actively separate aircraft inbound to the parallel runways, which has proven to further enhance safety at the Centennial Airport.

APA identified the following data for activity between June 24, 2021 and August 15, 2023:

- **Wrong Surface Landings:** APA had only 1 wrong surface landing and 12 reports of aircraft lined up for the wrong runway and corrected by ATC. The increased

² A wrong surface landing occurs "when an aircraft lands or departs, or tries to land or depart, on the wrong runway or on a taxiway. It also occurs when an aircraft lands or tries to land at the wrong airport."

³ A Pilot Initiated go around occurs when the pilot determines they will not be at a safe altitude or heading to complete a landing in a safe manner and they abandon the approach. Air Traffic control will sequence them for the airport to attempt another landing.

⁴ A "surface loss" occurs when aircraft on surface movement areas (taxiway or runway) do not meet minimum separation requirements

⁵ The final approach course is the last segment of an aircraft's approach to landing. It is a straight flight path aligned with the extended centerline of the runway. During the final approach, the aircraft descends and aligns itself with the runway for a smooth landing. Pilots aim to maintain a stabilized approach during this phase.

⁶ Positive Control for air traffic controllers means having continuous contact with an aircraft and providing specific instructions and clearances to ensure safe and orderly air traffic. This involves actively managing the aircraft's movements, ensuring proper separation from other aircraft, and maintaining situational awareness for controlled and secure airspace.

number of aircraft being identified lining up for the incorrect runway proves an increased scan and awareness for aircraft on the final approach course.

- **Pilot Initiated Go Around due to Collision Avoidance Resolution Advisory (TCAS RA):** APA had 15 go arounds due to aircraft responding to a TCAS RA for traffic on the parallel runway. By sequencing arrivals, fewer aircraft operated in conditions that required go arounds for safety.
- **Suspected Surface Loss Involving Two Aircraft:** APA had 7 reports of suspected loss of surface separation between two aircraft. This has improved due to enhanced tower teamwork and visual scanning throughout the airport environment. Controllers are fully aware of what the other controllers are doing and are able to see unsafe situations developing and make corrections in a timely manner.

APA Safety Data on Air Traffic Procedures		
Type of Safety Event	June 24, 2019- June 24, 2021	June 25, 2021- August 15, 2023
Wrong Surface Landing	5 Wrong surface landings, 4 Lined up for wrong runway and corrected.	1 Wrong surface landings 12 Lined up for wrong runway and corrected
TCAS RA Go Around (Pilot Initiated)	37	15
Surface Loss of Separation	14	7

The data above shows improved safety due to the mitigations that were compared to the years prior to the midair collision. The FAA's goal is to always improve safety, not reduce it. Air Traffic Controllers call base turns for aircraft for safety reasons and the FAA has seen an improvement in safety into APA because of the mitigation. Calling 17R base turns to "stagger" with traffic on 17L helps ensure safe and efficient operations for the following reasons:

- **Sequence and Separation:** By instructing aircraft to make a base turn, air traffic control can sequence incoming flights and maintain safe separation between them. This reduces the risk of mid-air collisions and ensures that each aircraft

has adequate space to complete their approach and landing.

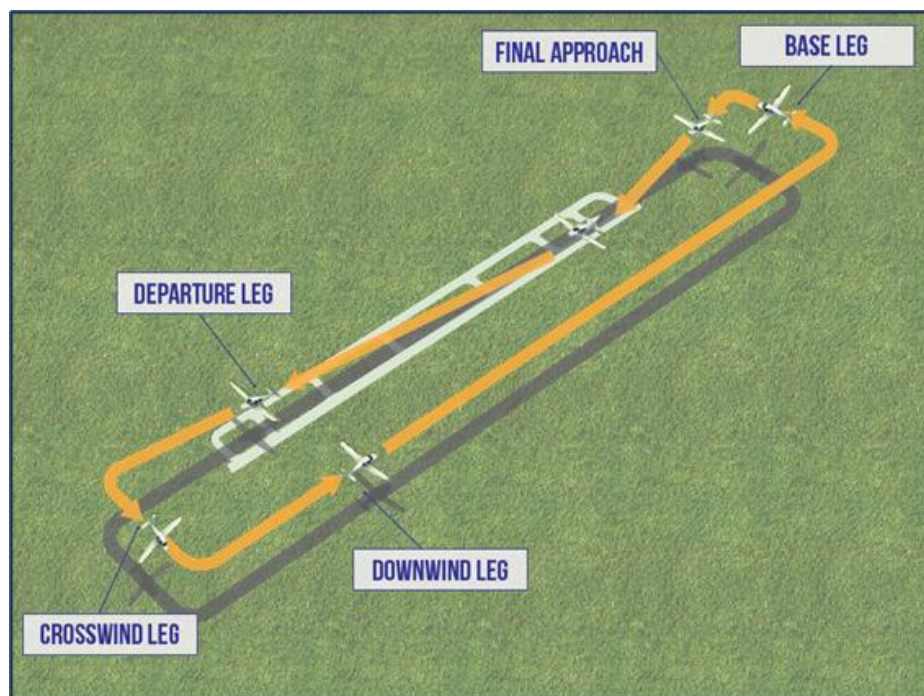
- **Traffic Flow Management:** Coordinating base turns allows air traffic controllers to manage the flow of traffic into the airport, preventing congestion and ensuring that aircraft are spaced out to avoid conflicts.
- **Conflict Resolution:** In busy airspace, it's crucial to have a clear plan for each aircraft descent and approach. Base turns help resolve any potential conflicts between arriving and departing aircraft, making the airspace safer and more organized.

Require Increased Pattern Altitude	
Rejected Mitigation Strategy:	Require an increased pattern altitude
Problem Mitigation Addresses:	Noise exposure to the community
Reduction of Noise Exposure:	Increased distance from noise source
Safety:	Maintained
Noise:	No noticeable reduction
Authority to Approve:	FAA-ATO
Responsible for Implementation:	FAA-ATO
Reason Strategy Not Adopted:	Requiring an increased altitude will increase the number of flights north and west of the airport (contradicting the purpose of this Study Group) while providing no decipherable reduction in noise.

The traffic pattern altitude (TPA) is the mean sea level altitude at which an aircraft will enter or remain in the pattern as shown in the graphic below – the TPA being the altitude outside of the departure leg and final approach. The potential kinetic energy of the aircraft is a balance of altitude and speed. Each aircraft has a specified approach speed, denoted by (V_{ref}); “V” being velocity, and “ref” being reference for the aircraft weight, configuration, and the runway and atmospheric conditions at the time of flight. V_{ref} is fixed by the aircraft manufacturer. This only leaves altitude as the adjustable variable.

If the altitude is increased, the aircraft extends its distance on the downwind leg prior to turning on the base leg to maintain a relatively fixed glide path angle or rate of descent on final approach, which is stabilized and safe. Therefore, if the TPA is increased, the distance on the downwind leg must be extended for the aircraft to safely reduce its energy and land on the runway. In the case of APA, this would result in aircraft extending the downwind leg further north of Arapahoe Road when landing to the south and would go against one of the goals of this Study Committee, which is to reduce the length of the downwind leg to not extend beyond Arapahoe Road.

The TPA is not an effective method for reducing aircraft overflight noise. The current TPA would have to be doubled, to 2000-3000 feet above ground level to result in a decrease of 6 dB. The perceptible limit of sound change starts at 3 dB, so unless the TPA is raised significantly, the reduction of noise would be barely detectable, and ANY change to the TPA would result in a longer downwind leg, which is contrary to goals voiced by the committee to limit the overflights north of Arapahoe Road.



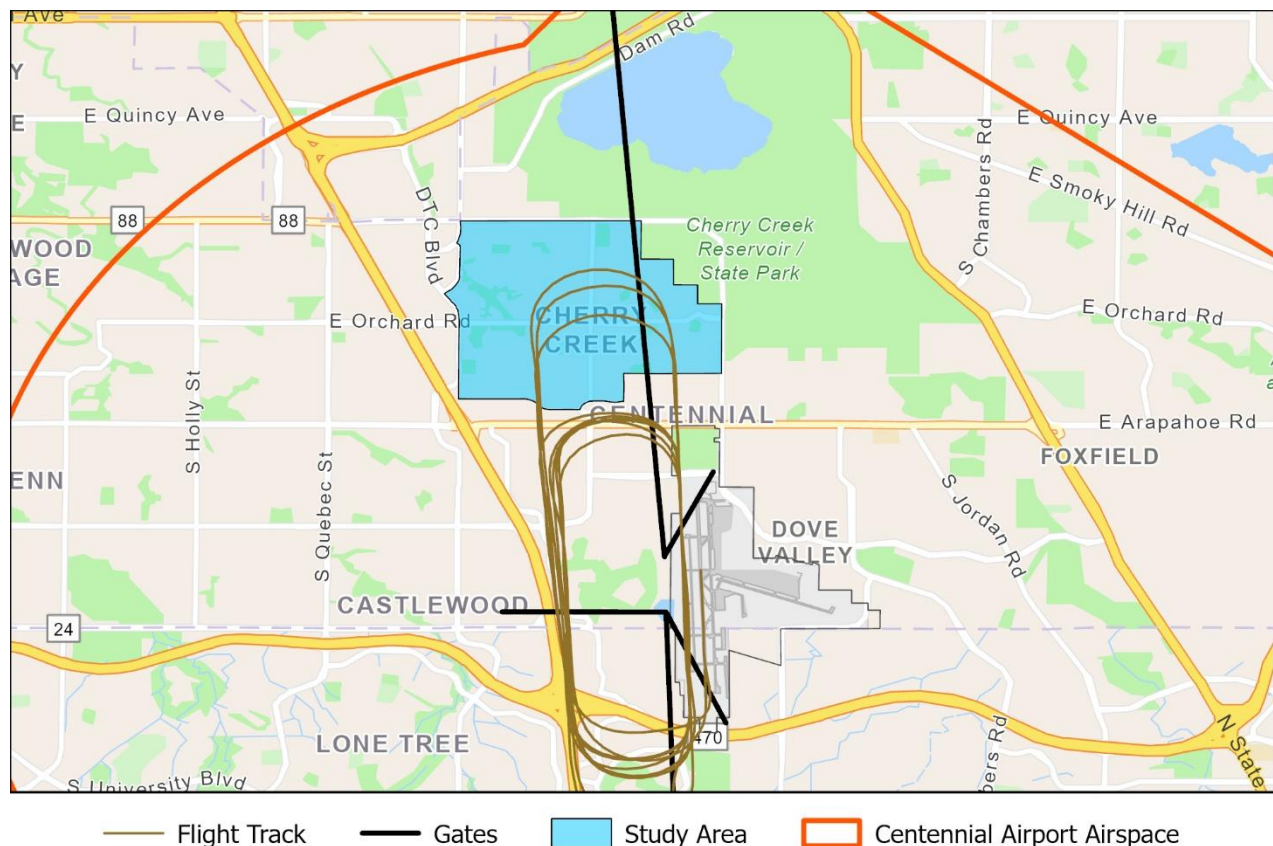
STUDY AREA DATA ANALYSIS

PURPOSE

The purpose of this data analysis is to quantify the number of touch-and-go aircraft operating within the Study Area, defined as the region located north of Peakview Avenue, south of Belleview Avenue, east of DTC Boulevard, and west of S. Peoria Street. This analysis compares Q1 2024 with Q1 2025, focusing on data collected before and after the implementation of mitigation strategies.

DATA PROCESS/METHODOLOGY

Using Centennial Airport's Noise and Operations Monitoring System (ANOMS™), aircraft tracks were filtered to include only those passing through defined gates along the Runway 17R/35L traffic pattern. A gate serves as a "window in the sky," established in the ANOMS™ system, through which an aircraft track must pass to be considered part of the traffic pattern. All associated gates (shown below) must be traversed for an aircraft to be classified as established in the Runway 17R/35L traffic pattern. Various data processing methods were tested to identify the most effective approach for detecting community overflight activity. Additionally, Airport staff collaborated with the ANOMS™ vendor to verify data integrity and ensure that the processing methods used provide an accurate representation of aircraft activity. Examples of touch-and-go flight tracks captured from this process are shown below.



Q1 2024 v. Q1 2025

ANALYSIS SUMMARY

The analysis of touch-and-go aircraft entering the Study Area during Q1 2024 and Q1 2025 reveals several key trends and insights regarding air traffic and mitigation strategies.

Overall Decrease in Touch-and-Go Aircraft: The number of touch-and-go aircraft entering the Study Area decreased from 10,348 in Q1 2024 to 7,408 in Q1 2025, representing a reduction of 2,940 aircraft. Additionally, the percentage of touch-and-go aircraft entering the Study Area also declined from 50.6% in Q1 2024 to 44.0% in Q1 2025. This downward trend is observed in the general decline shown in Figures 1.1 and 1.2.

Correlation with Total APA Operations: A correlation is evident between the number of total APA operations and the number of touch-and-go aircraft entering the Study Area, as illustrated in Figure 2. The total number of touch-and-go aircraft tends to rise in parallel with total APA operations, with both metrics showing seasonality, peaking in the summer months and dipping in the winter. In Q1 2025, this seasonal pattern remained consistent.

Impact of Weather on Flight Activity: March 2025 experienced fewer bad weather days than usual, contributing to a slight upward trajectory in touch-and-go aircraft activity. The correlation between weather patterns and flight training activity is crucial to understanding these fluctuations.

Mitigation Strategies and Positive Impact: Figure 3 highlights the role of mitigation strategies in reducing the number of touch-and-go aircraft entering the Study Area. Significant reductions were observed after the implementation of strategies in October 2023, with a noticeable decline in aircraft numbers in the following two months. This reduction is partially attributed to these strategies, though seasonality is also a contributing factor. Furthermore, meetings held by the FAA, ACPAA, and Flight School Safety and Noise Abatement in May, August, and November 2024 correlated with further reductions in the months following each meeting, suggesting that these ongoing mitigation efforts are effective. The March 2025 meeting's effectiveness will be analyzed over the subsequent months.

Aircraft Movement Patterns: Figure 4 provides further details on the distribution of touch-and-go aircraft within the Study Area, with the majority of aircraft (65.2%) making their base or crosswind turn between Peakview and Orchard.

In conclusion, the analysis indicates a steady decrease in touch-and-go aircraft activity, likely influenced by a combination of seasonality and effective mitigation strategies. Further

monitoring is needed to fully assess the long-term impact of these measures, particularly in response to the March 2025 Flight School meeting and weather-related fluctuations (especially as it gets closer to Summer) in flight activity.

****Disclaimer:*** *The Study Group emphasizes the importance of data integrity in these reports. Since the Q1 2024 report, we have adopted new data collection methods to enhance the accuracy of the information presented.*

FIGURE 1

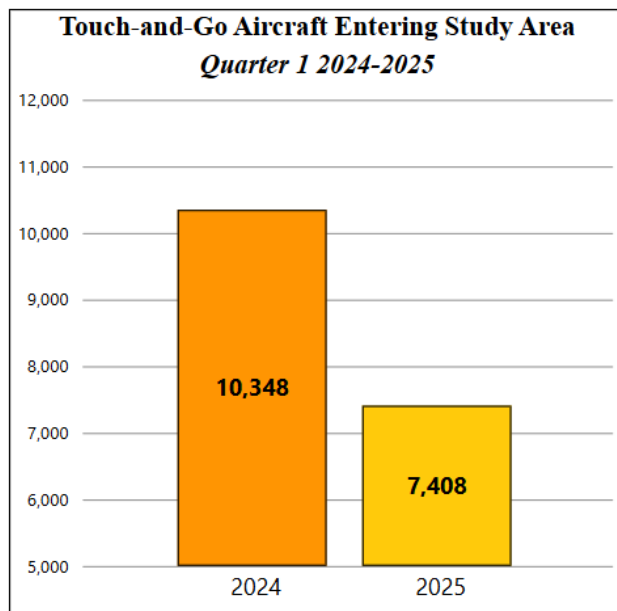


Figure 1.1

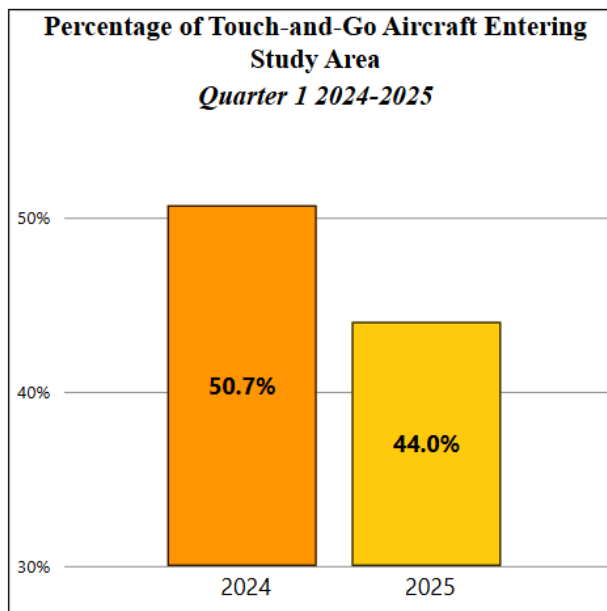


Figure 1.2

Figure 1.1 illustrates the number of touch-and-go aircraft entering the Study Area during Q1 2024 and 2025. In Q1 2024, there were 10,348 aircraft, which decreased to 7,408 in Q1 2025, marking a reduction of 2,940 aircraft.

Figure 1.2 depicts the percentage of touch-and-go aircraft entering the Study Area over the same period. In Q1 2024, 50.6% of touch-and-go aircraft entered the Study Area, which declined to 44.0% in Q1 2025.

Takeaway:

- **Clear decrease:** There was a definitive decrease in the number and percentage of touch-and-go aircraft entering the Study Area in Q1 2025 compared to Q1 2024.

FIGURE 2

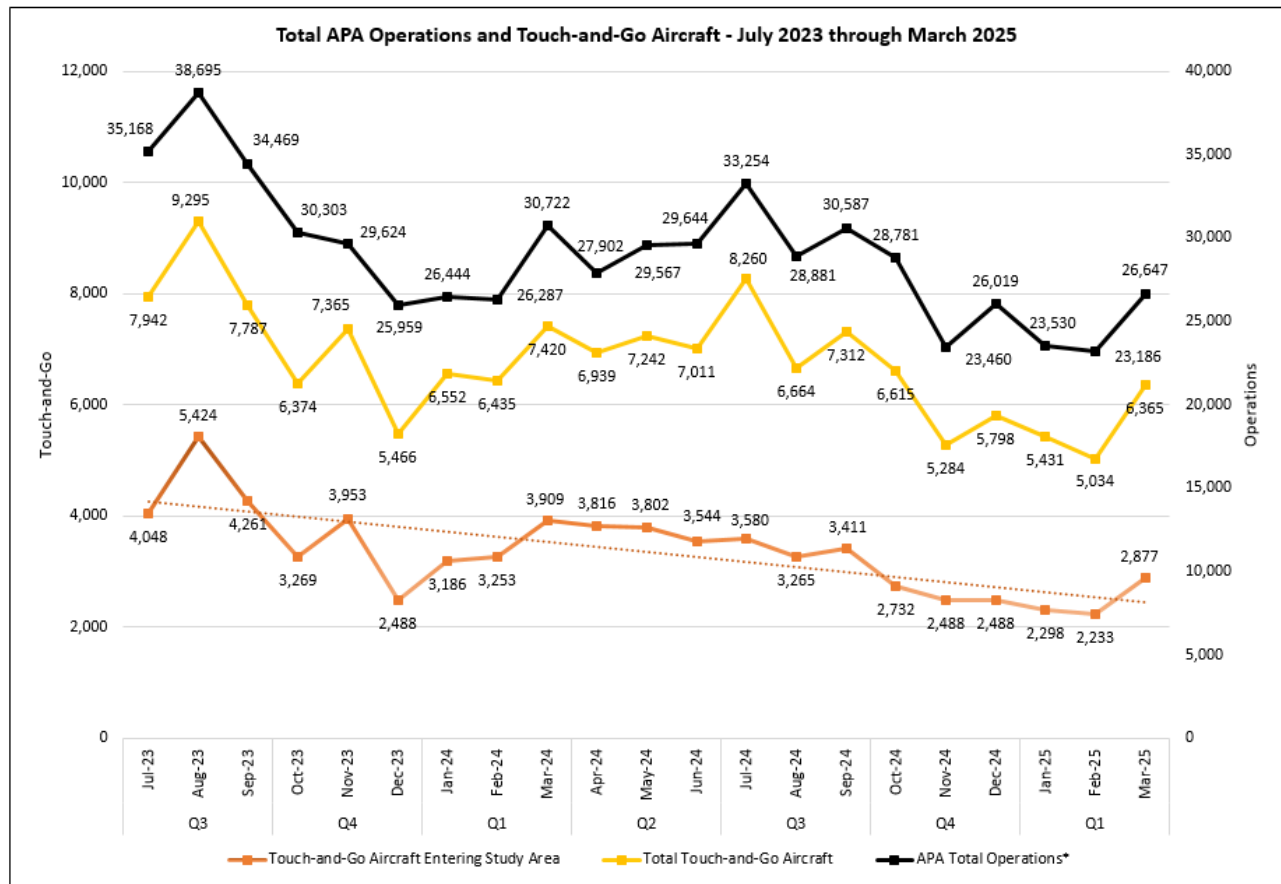


Figure 2 illustrates the number of **Touch-and-Go Aircraft Entering the Study Area**, **Total Touch-and-Go Aircraft**, and **Total APA Operations**. A trend line, represented by the dotted orange line, tracks the overall downward trend of touch-and-go aircraft entering the Study Area during July 2023 through March 2025.

This visualization highlights the correlation between these key metrics: as total APA operations increase, the total number of touch-and-go aircraft rise. Generally, as the total number of touch-and-go aircraft rise, so does the number of touch-and-go aircraft entering the Study Area. Total APA Operations and Total Touch-and-Go Aircraft also follow seasonality: busier in the summer months and less busy in the winter months. In Q1 2025, this correlation remained consistent with Q1 2024 trends.

March presented very few bad weather days that it is accustomed to seeing, which is why all three lines appear in an upward trajectory.

Takeaway:

- **Conventional trend:** As total air traffic increased—both in overall operations and touch-and-go activity—the number of touch-and-go aircraft entering the Study Area also rose. This trend is consistent across Q1 2024 and Q1 2025, suggesting that seasonal factors influence these metrics.

FIGURE 3

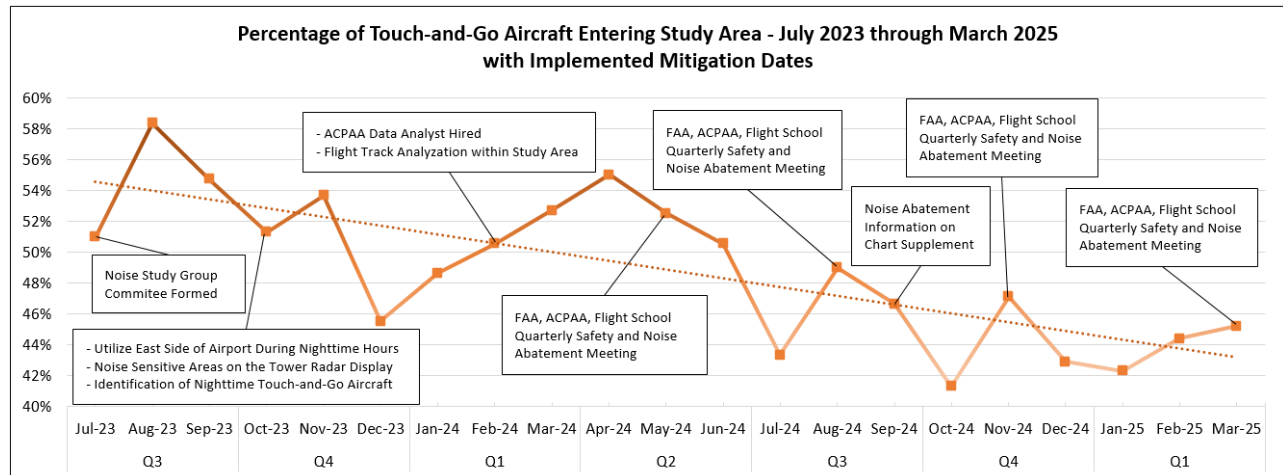


Figure 3 presents a timeline of touch-and-go aircraft entering the Study Area, primarily to show the trend from Q3 2023 through Q1 2025. The orange line represents the percentage of touch-and-go aircraft entering the Study Area. The dashed line illustrates the trend in the percentage of touch-and-go aircraft entering the Study Area. The trend line depicts a decrease over this specified period which is a positive.

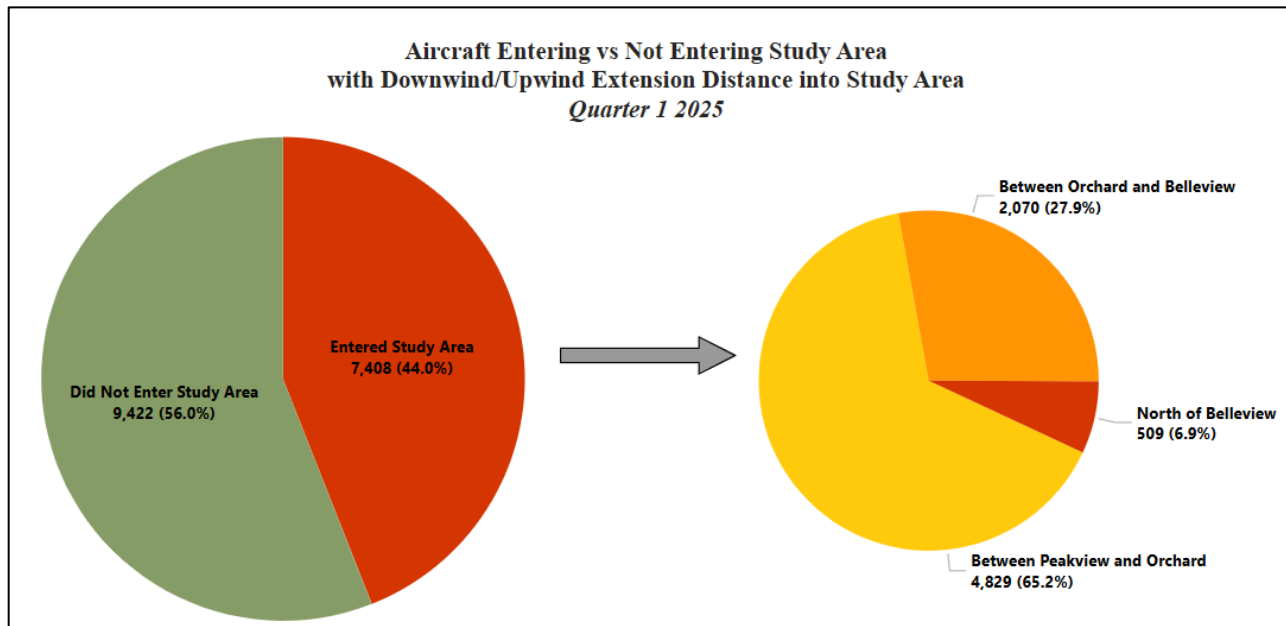
Additionally, the dates of implemented mitigation strategies are marked to demonstrate their influence on touch-and-go aircraft entering the Study Area. Most notably, following the initial implementations in October 2023, there was a significant decline in touch-and-go aircraft entering the Study Area within the subsequent two months. While this reduction is striking, it's important to consider that factors such as seasonality may also contribute to this decrease. Q1 2025 had very few bad weather days which allowed for more flight training activity, which could contribute to the slight upward trajectory.

Following the quarterly FAA, ACPAA, and Flight School Safety and Noise Abatement Meetings in May, August and November 2024, there was a noticeable decline in the number of touch-and-go aircraft entering the Study Area in the subsequent months. This trend suggests a positive outcome associated with this mitigation strategy. It is still too early to determine the effect of the March 2025 meeting.

Takeaways:

- **Clear Trend Analysis:** The timeline from July 2023 to March 2025 reveals a downward trend in the percentage of touch-and-go aircraft entering the Study Area, indicating a positive shift in activity over the specified period.
- **Effectiveness of Mitigation Strategies:** The marked dates of implemented mitigation strategies correlate with a noticeable decline in touch-and-go aircraft following the FAA, ACPAA, and Flight School Safety and Noise Abatement Meetings in May, August and November 2024 and March 2025, suggesting that this strategy has positively influenced operational behavior.

FIGURE 4



The left side of Figure 4 compares the number and percentage of touch-and-go aircraft that entered versus did not enter the Study Area. In Q1 2025, 7,408 aircraft entered the study area.

On the right side of Figure 4, the number of aircraft entering the Study Area is further categorized by the furthest point at which each touch-and-go aircraft extended its downwind or upwind leg. It's important to note that these numbers are cumulative. For example, if you live between Peakview and Orchard, the total number of overflying aircraft includes those flying between Peakview and Orchard, between Orchard and Bellevue, and north of Bellevue—totaling 7,408 aircraft. Similarly, if you live between Orchard and Bellevue, the total number of overflying aircraft would be the sum of those flying between Orchard and Bellevue and North of Bellevue—a total of 2,579 aircraft.

This chart clearly shows that the majority of touch-and-go aircraft entering the Study Area make their base or crosswind turn between Peakview and Orchard (65.2%).

Takeaways:

- **Majority of Aircraft Do Not Enter the Study Area:** In Q1 2025, the number of touch-and-go aircraft that did not enter the Study Area (9,422) was significantly higher than the number that did (7,408).
- **Cumulative Data Breakdown:** The chart categorizes the aircraft entering the Study Area by their furthest downwind or upwind extension, offering a detailed view of flight patterns.

FEEDBACK AND CONSIDERATIONS FOR THE Study Group

In Q1 2025, the Study Group did not receive any comments or suggestions via the online submission form.

We encourage aviation professionals, legal experts, and community members to examine the reasoning behind our conclusions. Should you disagree and have evidence to consider or a differing interpretation of the law, data, data analysis or results, please fill out the google form [HERE](#). Additionally, as it has been our commitment from the outset to consider all potential solutions, we invite you to submit potential solutions through the form as well.

A few notes about the form and how the Study Group will respond to submissions:

- All submissions will be read and considered based on their relevance to the work of this group, which is overflight and noise abatement for the area north and west of the airport.
- Because the work of this group is in addition to the duties of the members, do not expect a response. The default will be no response. However, where more information or context would be helpful or is needed, a response may be sent.
- Group members respectfully request constructive responses only. This form is an experiment and if abused, there will be consideration of deleting the form.

URL for the feedback form: <https://forms.gle/uxDUFgkkkvDBG31s8>

Current and past reports may be found [HERE](#).