



CENTENNIAL AIRPORT COMMUNITY NOISE ROUNDTABLE

AGENDA

August 5, 2026

6:30 p.m. – 8:30 p.m.

7565 S. Peoria Street, Englewood, CO 80112

Chair: Pam Thompson **Vice Chair:** **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.

**Centennial Airport Noise Complaint Hotline – 303-790-4709
Denver International Airport Noise Complaint Hotline – 303-342-2380**

1. CALL TO ORDER AND DETERMINATION OF QUORUM:

<i>Arapahoe County:</i>	Rhonda Fields/Leroy Evans	<i>Foxfield:</i>	Pam Thompson/Frank Lawrence
	Sreenivasan Alakappan/Vacant	<i>Greenwood Village:</i>	Donna Johnston/John Jackson
<i>Douglas County:</i>	Abe Laydon/DJ Beckwith	<i>Highlands Ranch Metro Dist.</i>	Andy Jones/Renee Anderson
	Alison Biggs/Mark Adams	<i>Lone Tree:</i>	Mike Parr/Chuck Darnell
<i>Elbert County:</i>	Mike Buck/Shawn Fletcher	<i>Parker:</i>	Cynthia Liston Thye/Bryce Matthews
	Brenda Dyche/Deidre Dyche	<i>ACPAA:</i>	Michael Fronapfel/Zach Gabehart
<i>Aurora:</i>	Brad Pierce/Maurice Healy	<i>AOPA:</i>	Joe Patton/Mike Koscielniak
<i>Castle Pines:</i>	Chris Eubanks/Ron Cole	<i>CABA:</i>	Don Kuskie/Mike Straka
<i>Castle Rock:</i>	Laura Cavey/Sandy Vossler	<i>CDOT Aeronautics Div</i>	Todd Green/Vacant
<i>Centennial:</i>	Don Sheehan/Ryan Dwiggin	<i>Wings Over the Rockies:</i>	Bill Wasmund/Vacant
<i>Cherry Hills Village</i>	Dave Heller/Doug Robinson	<i>FAA Representative:</i>	Jennifer Redding

Additional Attendees/Guests/Online:

SPECIAL APPOINTMENT TO POSITION OF CACNR VICE CHAIR:

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

- A. DRAFT MINUTES, June 3, 2026 – Alison Biggs, Secretary
- B. TREASURER'S REPORT, July 2026– Andy Jones, Treasurer, Zach Gabehart, ACPAA Staff
- C. CACNR ATTENDANCE RECORD – Alison Biggs, Secretary

3. ITEMS REMOVED FROM CONSENT AGENDA:

4. PART 150 STUDY UPDATE/PROGRESS:

- A. UPDATE – Kate Andrus, Mead & Hunt
- B. PART 150 NOISE COMPATIBILITY STUDY ADVISORY COMMITTEE – Chris Eubanks

5. NOISE REPORTS: Zach Gabehart, ACPAA Staff

- A. MAY & JUNE 2026
- B. PORTABLE MONITOR – Greenwood Village

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

- A. MEETING ATTENDEES /VIRTUAL ATTENDEES –
- B. RECEIVED BY CACNR –
 - 1. Email from Randy Johnson
 - 2. Email from Joe Panem
 - 3. Email from Brenda Dyche
 - 4. Email from Lisa Esquivel

7. EXECUTIVE COMMITTEE:

- A. ACPAA MEETING –CACNR June 3 meeting report for ACPAA June 18, 2026 ACPAA meeting – Pam Thompson
- B. WEBSITE – Andy Jones

- C. WORK PROGRAM – Alison Biggs
 - 1. Orientation Content for Website
 - 2. Consider Schedule Showing of 3 New Orientation Presentations
 - 3. Consider Including Compilation of Health Effects of Noise in Work Program
- 8. **CACNR STUDY GROUP COMMITTEE:** Brad Pierce, Chris Eubanks, Mike Fronapfel
 - A. 2nd QUARTER 2026 REPORT – Matt Frenette, ACPAA Staff
 - B. 2nd QUARTER DASHBOARD – Zach Gabehart, ACPAA Staff
- 9. **AIRPORT DIRECTOR:** Mike Fronapfel
 - A. ACPAA RESPONSE TO FAA SUPERSONIC OVERLAND FLIGHT REGULATION CHANGE (see also 12. A. & B. below)
 - B. ACPAA POSITION CHANGES
 - C. FLIGHT SCHOOL ACTIVITY/NEXT MEETING DATE
 - D. AVIATION FUEL SALES
 - E. LEGISLATIVE/LOBBYING
 - F. COMMUNITY RELATED ACTIVITY
 - G. OTHER
- 10. **2nd QUARTER LAND USE REVIEW:** Zach Gabehart, ACPAA Staff
- 11. **OLD BUSINESS:**
 - A. DRAFT LETTER TO FSDO & FLIGHT SCHOOL OWNERS – Mike Koscielniak, Pam Thompson
 - B. PILOT REACTION TO FAA UPDATED ARRIVAL PROCEDURE FROM NORTHWEST
- 12. **NEW BUSINESS:**
 - A. FAA PROPOSED SUPERSONIC OVERLAND FLIGHT REGULATION CHANGE
 - B. DRAFT RESPONSE TO FAA SUPERSONIC OVERLAND FLIGHT REGULATION CHANGE
 - C. REQUEST FOR DATA COMPARISON BETWEEN FLIGHT TRAINING AREA IN DOUGLAS COUNTY AND 3 TOWERS
(see June 3, 2026 minutes, second bullet under agenda item 13.)
- 13. **PUBLIC COMMENT EXTENSION IF NEEDED:** (3 minutes per person time limit):
- 14. **REPRESENTATIVES' COMMENTS:**
 - A. REPRESENTATIVES FROM MEMBERS OF COLORADO MUNICIPAL LEAGUE
- 15. **RECOMMENDATIONS TO ACPAA AND OTHERS TO POTENTIALLY REDUCE NOISE OVER AFFECTED COMMUNITIES:**
- 16. **NEXT MEETINGS:**
 - A. **CACNR** –

Aug 5, 2026	6:30 p.m.	7565 South Peoria Street, Englewood, CO 80112
Sept 2, 2026	6:30 p.m.	7565 South Peoria Street, Englewood, CO 80112
Oct 7, 2026	6:30 p.m.	7565 South Peoria Street, Englewood, CO 80112
Nov 4, 2026	6:30 p.m.	7565 South Peoria Street, Englewood, CO 80112
Dec 2, 2026	6:30 p.m.	7565 South Peoria Street, Englewood, CO 80112
 - B. **ACPAA** –

Aug 13, 2026	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
Sept 10, 2026	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
Oct 8, 2026	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
Nov 12, 2026	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
Dec 10, 2026	3:00 p.m.	7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR
- C. **PART 150 NOISE COMPATIBILITY STUDY ADVISORY COMMITTEE – August 12, 2026**
- 17. **ADJOURN:**



CENTENNIAL AIRPORT COMMUNITY NOISE ROUNDTABLE MINUTES

DRAFT

June 3, 2026

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

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.

1. **CALL TO ORDER, ROLL CALL, and QUORUM:** The meeting was called to order at 6:31 p.m. by Vice Chair Pam Thompson. The following were in attendance, and a quorum was present:

Arapahoe County:	Rhonda Fields online	Foxfield:	Pam Thompson
Douglas County:	DJ Beckwith	Greenwood Village:	Donna Johnston
Douglas County:	Alison Biggs	Highlands Ranch Metro:	Andy Jones
Elbert County:	Brenda Dyche	Parker:	Cynthia Liston Thyme
Aurora:	Brad Pierce	ACPAA:	Michael Fronapfel
Castle Pines:	Chris Eubanks	AOPA:	Joe Patton
Castle Rock:	Sandy Vossler online	CABA:	Don Kuskie
Centennial:	Don Sheehan	Wings Over the Rockies:	Bill Wasmund
Cherry Hills Village:	Dave Heller online		

Also present: Castle Pines Alternate Representative Ron Cole online; ACPAA Alternate Representative Zach Gabehart; AOPA Alternate Representative Mike Koscielniak; Jennifer Redding, FAA Senior Program Analyst, Northwest Mountain Region; online; and ACPAA Staff Matt Frenette, Aliyah Then, and Lauren Wiarda.

Additional attendees or online guests: Michael Gradis, City of Centennial Staff, online; Randy Johnson, citizen online; Nathan Moran, Mead & Hunt, online; Joe Panem, citizen; Brad Rolf, Mead & Hunt, online; and pilot/instructor Bill Ward, online.

Absent: Arapahoe County:	Sreenivasan Alakappan/Vacant	Lone Tree:	Vacant/Chuck Darnell
Elbert County:	Mike Buck/Shawn Fletcher	CDOT Aeronautics Div:	Todd Green/Vacant

SPECIAL ANNOUNCEMENT: Before the beginning of the meeting, Chris Eubanks announced he would be resigning the Chair position for CACNR at the end of this meeting. Various work and personal commitments had made it very difficult for him to give that position the attention and time he felt it deserved. Per the bylaws, the Vice Chair automatically assumes the Chair, until the next election, and the Chair would then appoint someone to the Vice Chair position, subject to approval of a majority of the Regular Member Representatives present at the meeting when any appointment was made.

Eubanks was thanked for his work on behalf of CACNR, both as Chair and as a member of the CACNR Study Group Committee. He indicated he would remain as the Castle Pines Representative to CACNR, and on that Committee. Interest in the Vice Chair position was solicited so that an appointment could be made at the August CACNR meeting.

2. **CONSENT AGENDA:** The Consent Agenda included the draft CACNR Minutes from May 6, 2026; the Treasurer's Report from May 29, 2026, showing a balance of \$27,587.53; and the CACNR Attendance Record through May, 2026. On the motion of Alison Biggs, duly seconded, the Consent Agenda was approved.

3. **ITEMS REMOVED FROM THE CONSENT AGENDA:** None.

4. **PART 150 STUDY UPDATE:**

A. **UPDATE** - Zach Gabehart reported continuation of the refinement and finalized modeling of noise alternatives. The consultant team was scheduled to attend the August CACNR meeting to bring a finalized version of the draft noise compatibility plan. The Part 150 Noise Compatibility Study Advisory Committee would meet to receive the information on the same day as CACNR. Comments received at those meetings might be used to make changes. The public hearing on the plan could be scheduled for September. The plan would then be taken to ACPAA which would decide on the final version as the official recommendation from the airport to the FAA, possibly by mid-October.

Requests were made for the consultants to date their reports and to number the pages. More importantly, request was again made for the reports to be provided in a timelier fashion so they could be included in the pre-meeting e-mailing instead of just being made available at the meeting. Without receiving the reports before the meetings, those Representatives who could only attend online had no

opportunity to review the material and provide comments or questions. Not receiving the reports until after the meetings was considered unfortunate for them at the least. It did not seem as though the content of reports received had been so time sensitive that they could not have been prepared in time for inclusion in the CACNR e-mailings, and it was asked that this not occur for the August CACNR meeting.

B. REPONSES TO PAST CACNR QUESTIONS - Questions pulled from past CACNR meetings had been submitted to the consultants; some had been answered by them, and some had been referred back to the airport. Responses were provided. It was noted many of the inquiries which had been indicated would/could be considered during the upcoming Part 150 had been deemed not within the scope of that study.

Clarification was sought about the status of the portable noise monitor currently labeled P1 becoming permanent in the Greenwood Village area. The FAA will no longer install or recommend installation of anything outside the 65 DNL noise contour as it did when the current noise monitors were installed following the last Centennial Airport Part 150. From the airport's perspective, the current Part 150 would look at areas that potentially need a permanent noise monitor, and if they were not eligible for federal funding, then different funding avenues could be explored by the airport, possibly in conjunction with the jurisdictions involved. Such monitors would be integrated into the airport's current system for data collection and reporting and maintenance. Since the FAA would not assist with funding, there would be no reason to wait on the FAA any longer to begin the process of making the P1 monitor permanent. The exact required expenditure was unclear, and Greenwood Village had not budgeted for it this year, pending an FAA ruling. There would also need to be some agreement on what the monitor would be called, to assure recognition of its location as well as continuity with the data already collected from the portable location.

Discussion noted if the FAA will not pay for any noise monitors outside the 65 DNL noise contour on a nationwide basis, how would airports without current noise monitoring systems know where their noise contours were, and what was outside the 65 DNL? If airports cannot access that information, they cannot truly identify or measure the noise in their surrounding communities. It did leave the impression that the FAA did not really want to know about noise issues facing the public, perhaps not a good message for the FAA to be sending.

Frustration was again noted that when questions and concerns had come up in prior meetings, it had been easy to say they could be looked at during the Part 150, and then it turned out they were replied to with generalities or weren't considered within the purview of the Part 150 study after all. A listing of meetings the consultants indicated they had attended, either in person or virtually, with various groups, including CACNR was provided. It was noted the group the consultants called the FAA Study Group was actually CACNR's Study Group Committee.

C. PART 150 NOISE COMPATIBILITY STUDY ADVISORY COMMITTEE – No report.

5. NOISE REPORTS:

A. APRIL 2026 - The April 2026 Noise Report included the following information:

April Local Operations:	11,757	April Total Operations:	23,814
Year to Date Local Operations:	48,322	Year to Date Total Operations:	99,037

23,814 Total Operations in April resulted in 755 complaints from 53 households.

April Noise Events:

<u>April Total:</u>		<u>April 60 – 69 db:</u>		<u>April 70 – 79 db:</u>		<u>April 80 – 89 db:</u>	
Golf Course	7,907	Meridian	6,702	Golf Course	3,427	Airport East	380
Meridian	7,876	Golf Course	4,278	Meridian	1,142	Golf Course	197
Airport East	2,651	Parker	2,032	Airport East	792	Lone Tree	42
Parker	2,243	State Park	1,435	State Park	498	Meridian	30
State Park	1,944	Airport East	1,434	Port. Station 31	264	Port. Station 31	18
Port. Station 31	1,523	Port. Station 31	1,241	Parker	210	State Park	11
Grandview Estates	1,288	Grandview Estates	1,140	Grandview Estates	142	Grandview Estates	5
Castle Rock	951	Castle Rock	894	Greenwood Village	70	Castle Rock	2
Greenwood Village	781	Greenwood Village	710	Castle Rock	55	Castle Pines	2
Lone Tree	624	Lone Tree	506	Castle Pines	48	Parker	1
Hunters Hill	399	Hunters Hill	379	Lone Tree	36	Greenwood Village	1
Castle Pines	241	Castle Pines	191	Hunters Hill	19	Hunters Hill	1
Sagebrush Park	78	Sagebrush Park	72	Sagebrush Park	6	Sagebrush Park	0

April Noise Events in the 90+ decibel range: Airport East – 45 Lone Tree – 40 Golf Course – 5 Meridian – 2 Grandview Estates - 1

<u>April Noise Complaints per Municipality</u>		<u>Numbers of Households:</u>		<u>YTD Complaints and</u>		<u>Number of Households:</u>	
Unincorporated Douglas County	277 (37%)	UAC	15 (28%)	UDC	673 (29%)	UAC	24 (23%)
Unincorporated Arapahoe County	148 (22%)	UDC	14 (26%)	UAC	494 (22%)	GV	23 (22%)
Centennial	142 (19%)	Greenwood Village	12 (23%)	Centennial	397 (17%)	UDC	23 (22%)
Unincorporated Elbert County	73 (10%)	Centennial	2 (4%)	UEC	354 (16%)	Other	8 (8%)
Greenwood Village	60 (8%)	Lone Tree	2 (4%)	GV	266 (12%)	Lone Tree	6 (6%)
Lone Tree	44 (6%)	Highlands Ranch	2 (4%)	Lone Tree	57 (2.5%)	Centennial	5
Highlands Ranch	4	Other	2 (4%)	Other	21	HR	5
Denver	3	Castle Rock	1	Denver	10	Parker	3
Other	2	Denver	1	Highlands Ranch	8	Denver	2
Castle Rock	1	UCE	1	Castle Rock	6	UEC	2
Parker	1	Parker	1	Parker	4	Castle Pines	1
Aurora	0	Aurora	0	Castle Pines	2	Castle Rock	1
Castle Pines	0	Castle Pines	0	Aurora	0	Aurora	0
Cherry Hills Village	0	Cherry Hills Village	0	Cherry Hills Village	0	CHV	0

Year to Date, the top five households complaining were:

Household #1 358 (16%) Centennial
Household #2 353 (15%) Unincorporated Elbert County
Household #3 289 (13%) Unincorporated Douglas County

Household #4 212 (9%) Unincorporated Arapahoe County
Household #5 166 (7%) Unincorporated Douglas County
Remaining Households 914 (40%)

In April, 78 noise complaint responses were completed from 755 noise complaints, with 72 of those by email and 6 by telephone.

In April 675 complaints were received from 7:00 a.m. – 9:59 p.m. (89.5%)
80 complaints were received from 10:00 p.m. – 6:59 a.m. (10.5%)

In April props accounted for **91% of the complaints by aircraft type**; **jets** accounted for **6% of the complaints**, and **helicopters** caused **3%**. Comparatively, **Year to Date** figures showed propellers had caused 91% of the complaints; jets caused 7%, and helicopters caused 2%.

In April departures were responsible for **22% of the complaints**, **training** was responsible for **69% of the complaints**, and **arrivals** were responsible for **9% of the complaints**. Comparatively, **Year to Date** figures showed training had caused 66% of the complaints, departures had caused 24%, and arrivals had caused 10%.

A graph was provided showing the **April number of complaints by the hour** in which they were made, with a peak at 7 a.m. hour; followed by a secondary peak at 10 a.m. An early evening bump in complaints is observed at 8 p.m.

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

- Looking at noise complaints month to month, they seemed to be going up even though operations have been trending down: 421 complaints from 25,866 operations in January 2026 to 755 complaints from 23,814 operations in April.
- Could there be a relationship between the higher number of complaints and the decibel levels noted in some neighborhoods? For example, Lone Tree's noise monitor recorded 40 flights in the 90+ dB range, almost as many as Airport East on the airport's grounds. Last month Lone Tree had only eight in that range. Staff reported having noticed the seeming discrepancy and was examining the situation. Flight tracks had not appeared to correlate to the number of events recorded, so all related aspects of these numbers were being explored.
- It was noted complaints from Unincorporated Douglas County were up rather significantly, as were those from Centennial. Greenwood Village complaints had stayed steady. The Unincorporated Douglas County complaints were heavily attributed to one or two households in the northwestern part of the county. For Greenwood Village, comment was made that jet traffic there had moved toward Cherry Creek High School, and fewer of the flight schools were circling by the fire station. The number one Centennial house was located west of the airport, west of I-25. Nighttime complaints had also increased from 47 to 80 although that might be attributed to the effect of daylight savings time's longer daylight hours encroaching on clock hours.
- Representatives were asked to self-monitor their areas to see what was happening regarding fluctuations in noise and complaint data over both the short and long terms, and to bring that information to future CACNR meetings.

B. PORTABLE MONITOR, The Canyons, Castle Pines – The location of this portable monitor was in the Canyons subdivision of Castle Pines, about five miles directly south of the airport, right in the ILS approach corridor for the airport's main runway. This approach has a ground based precision approach which is used in any sort of inclement weather because it can get aircraft closest to the ground in bad weather. That approach is critical, very precise, and cannot be deviated from.

- The portable monitor was in place during the month of April before the prevailing winds had switched into summer mode out of the south. Jets were the aircraft most using the approach related to the location of the portable monitor; 916jts, 558 propellers, and 10 helicopters. There were 907 arrivals, 440 departures, and 130 training flights.
- Question was asked about the altitude, which had been between 1,500 and 2,000 feet, going below that about five miles out where the pilots are also powering back to slow down, deploying flaps, etc., all of which increases the noise footprint. That was not really any different than any other north flow April.
- It was noted the residence where the portable monitor was located was directly under the approach path, so every aircraft using the path is right over that residence. The topography also might be contributing to the problem, as the sound down in the canyon there seemed different than other locations. The majority of noise events at the portable monitor were in the 60-69 decibel range, with a smaller number in the 70-79 decibel range.
- There had been a noticeable increase in the number of complaints coming from the area, which had not even been completely built out yet. The Outer Marker Road within the community had been there for a very long time, as the outer marker to the instrument approach to the runway.
- Because of these factors, the airport had opposed this development and had requested navigation easements and notifications to perspective buyers, but the home builder had declined to do that. If prospective residents do not do their due diligence, they are met with unanticipated noise.
- It was reported that the main developer in the area does provide one paragraph in its contracts saying you are moving into an area where there is slight activity, and they ask the buyer to sign the statement. It was unknown how many actually looked at flight activity in the area before signing. Apparently other builders are doing something similar. It was noted being given something within the myriad of papers needing to be signed at closing was too late to be meaningful in relation to the airport and aircraft noise.

Developers do not want to disclose anything which might affect their sales. It would be positive if there was differing notification being done by any developers.

- There was discussion of what to do with results from the portable noise monitors, or any of the monitors for that matter. Given the constraints in place from the FAA, the need to use a precision approach flight path which cannot be changed, and the complaints CACNR receives from a variety of locations, it was obviously a challenging situation. It was noted the frequency of overhead flights seemed to be of particular concern, and that was something CACNR was attempting to address with the flight schools at least.

- Question was asked what the response of the homeowner who had asked for the portable monitor had been about the results. Some questions had been asked and information provided to help with understanding, such as why the ILS could not be moved, and some discussion of the frequency annoyance issue. There had been no further communication from the resident.

6. **PUBLIC COMMENT:**

A. MEETING OR VIRTUAL ATTENDEES – There was no one attending in person who wished to speak.

- Online, Randy Johnson of Louviers reported noting 352 planes over his area, mostly training flights; 215 had come from Centennial and 175 from Rocky Mountain Metropolitan, with occasional ones from Spaceport. On their highest days, 15 had come from Centennial and 17 had come from Rocky Mountain. His overall highest days included one day of 38 planes, two days of 36 and one of 33. He had submitted 116 complaints to Centennial, the highest he had ever done, and 13 to Rocky Mountain, which was a little low because he was so busy with Centennial's.

Once again, Johnson felt multiple planes had been purposely flying directly towards Louviers and then doing a similar turning pattern which included flying over Louviers area residences. He had been able to identify which flight schools had been involved, including Aspen, Independence, and Epic. It had appeared to him that Epic had added planes, and they did not normally fly close. He had also noted some new plane numbers but did not provide specifics about those.

- Online, Bill Ward, flight instructor and pilot at Centennial commented on the home closing disclosure documents mentioned earlier. He had previously felt and continued to feel that a paragraph in a closing document comprised of countless pages was not enough. He felt Shea Homes and Richmond America Homes were two of the most difficult for giving notice. He had toured the Summit at Meridian, Cityscape at Dove Valley, and the Canyons in Castle Pines and had asked about the airport at each. Responses had included such comments as "Oh, the airport is subject to restrictions," or "the airport's not that busy," or "they don't even use that runway," or "you don't really get any noise."

He felt it should be made clear to people moving right next to the airport or in the path of the ILS that they are going to be subjected to 24-7-365 noise from the airport. The results from the portable noise monitor provided an honest picture of what being under a precision approach is like. Centennial Airport objects to developments being built in that location as did many other people, because the ILS cannot be moved or curved or otherwise fixed.

He suggested one thing CACNR might do was to look at some way to strengthen disclosures about the noise sensitive areas around the airport, whether it was through CACNR itself or Representatives working with their jurisdictions' governing bodies. Prospective buyers need to be helped to look at a map, and a heat map, and understand the development's relationship to the airport, and understand what a navigation easement means before they sign one. It had been observed that the housing market or the housing developers and the aviation industry were eventually going to come head to head. It did not seem appropriate or safe to keep allowing building and selling single family, not as well insulated homes in areas where they are being placed right now. He noted he had recently flown over a development to the unacceptably Immediate south of the airport that was being unfortunately heavily populated and wondered how many of those residents were really aware of the implications of their decisions.

B. RECEIVED BY CACNR –

1. Randy Johnson was commended for the work he did and does to keep airport staff and CACNR apprised of the flight activity in his area. He had spoken about his results for the month as noted above.

2. Brenda Dyche from Elbert County also had provided explicit records of flight activity in her area, including for today showing four planes which were recorded as being between six to eight hundred feet over the top of her house. Factors which might have affected the accuracy of the measurements could have been cloud cover, barometric pressure, etc. There may also have been aerial surveying going on, or some kind of photography. Knowing that did not necessarily make the accompanying noise any less annoying.

3. Laurie Boshart from Douglas County, a new development east of Hilltop and Singing Hills Road, basically had requested flights going to the training boxes observe the voluntary fly quiet hours. Although there were both late-night and morning violations, the very numerous 5:30 a.m. wake-up flights were the most prevalent and annoying.

4. Joe Panem was in attendance and also regularly communicated with CACNR and airport staff. His emails agreed strongly with Boshart, as he had been expressing for several months. Planes seemed to be using an older, retired training box even though there was one only five minutes away. And unfortunately, planes had to go over Randy Johnson's location to reach that location. For Panem, it frequently started around 4:00a.m., and he shared some personal information about the impact such noise had on his family. He was thanked for putting such a real life perspective on the situation. All agreed there had to be a better way to get the flight schools to respect those on the ground more than had been evidenced so far.

5. Lisa Esquivel was in the area involved by the Study Group Committee, and it was the first communication from someone in that area for a long time. Her point was she was getting a lot of training flights, some seeming as low as 450 feet over her house, from 5:00 a.m. to 11:00 p.m.

It was noted that concerns as noted above are brought to CACNR's attention, and responses are provided to the questions asked.

7. EXECUTIVE COMMITTEE:

A. ACPAA MEETING - Pam Thompson had provided the written report given to the May meeting, and reported the members of the ACPAA Board were very concerned about noise. Two on that Board were Douglas County Commissioners, and all would have these minutes to read, plus having heard Thompson's report on June 18th. She noted there were now areas from Elizabeth to Louviers, with Chatfield, Ridgeway, Castle Pines and Meridian coming for more anticipated noise complaints. It would be a challenge to determine what to do with all of them, since it would be difficult to form a targeted Study Group to address each of them. Those who had been complaining for some time would not want to take a back seat to the newer developments, even if those were actually closer to the airport.

The ACPAA Board was very sympathetic to the noise problems, but there was little it could do since so many of the affected areas were not within its jurisdiction. FAA regulations also limit actions airports can take regarding noise abatement and aircraft. Voluntary noise abatement guidelines were perhaps its best offense for working with the flight schools. One of the pilots connected to CACNR had commented that when he was in a training box and noticed he was over houses, he made the conscious effort to relocate his training. That kind of thinking would be nice to instill in all pilots and pilot instructors. The concept was being discussed at the pilots' association, and at the Colorado Aviation Business Association (CABA), but was taking a very long time to trickle down,

B. WEBSITE RFP – Andy Jones was excited to bring information about updating the website, which had not occurred for a very long time. The goal was to have a website which was simple but sophisticated, visually appealing, user friendly, and which would effectively inform and educate CACNR Members and Representatives and the public about airport noise issues, noise mitigation efforts, noise abatement procedures, and the roles of CACNR, ACPAA, and other related or involved organizations.

Jones noted CACNR was not a governmental agency and therefore was not required to obtain multiple bids to do the update and maintenance of its website. He had created a draft RFP which the Executive Committee had seen and he had shared it with Altitude Design Agency (ADA), run by an individual he knew and had worked with for a long time who was currently based in Bentonville, Arkansas. He had received ADA's proposal the day before this CACNR meeting. He had spoken with his friend extensively and believed he had already started working on the website even without a contract. He was suggesting changing the content management system to one which would be very easy to use and to regularly update. He understood the website should be a repository for information to be accessed and used by CACNR Representatives and by the general public

The cost of the ADA proposal to update the website would be the full \$5,000 included in CACNR's budget for both the update and maintenance of the website. ADA requested \$2,500 at the start of the project, and \$2,500 when the update was completed to CACNR's satisfaction. Details and timelines were included in the proposal, beginning with this meeting, with the update completed by the August CACNR meeting. There would be another month for training on the use of the site, and completion of any necessary adjustments.

Question was asked if there would be any kind of service agreement for perhaps at least a year. There did not want to be any reliance on airport staff to do maintenance or updating of the site on a regular basis. ADA would do so but would require a separate agreement at a special rate to CACNR of \$200 an hour. The cost of ongoing maintenance would certainly need to be under consideration, unless CACNR Representatives would take on the task. There would also be a cost factor related to the new content management system, and how that would compare with the cost of the Go Daddy current platform, domain registration fee, etc. was unclear. Although ADA's proposal did not include these types of additional costs, it was noted CACNR did have budgeted reserve funds, as well as unexpended funds in other categories. Such costs should be clarified before the 2027 budget needed to be created.

Question was asked if ADA had its own hosting site or would host on its own mainframe, or would it be taking over the current CACNR Go Daddy account, and what kind of refreshing would go along with either. Security of the site was also brought up. The proposal did address some of these more technical topics, which were included in the proposal's cost.

Jones encouraged proceeding with the ADA proposal in order to have something operable by the August CACNR meeting. Observation was made that would preclude any interest which might be expressed by any other vendors, with perhaps a different cost factor. Request was made for next steps which needed to be accomplished. Per Jones, it appeared CACNR should approve the draft RFP, with a price point not to exceed \$5,000; the timeline written into the RFP splitting the cost into \$2,500 initially and \$2,500 when CACNR was satisfied with the update. CACNR would supply the content, although Jones would ask the airport for the use of any archived photos or videos not currently in use and for which CACNR would not have to include attribution. He next wished for approval of the proposal from ADA to be signed no later than July 10th, provided no one had major modifications between now and then.

Question was asked about the different dates in the version of the RFP which had been shown on the screen, and what was correct. It was noted the majority of CACNR Representatives had not seen the RFP or the ADA proposal before getting it tonight, and was there a definitive reason for taking action now? It did not seem appropriate to approve something in that fashion. It was noted the website had needed to be updated for a very long time, so waiting another couple months would probably not make a lot of difference, but would allow everyone to know what they were voting on.

Considerable additional time was spent clarifying deadlines and deciding how to handle the RFP and the vendor (s) proposal(s). Finally, on the motion of Brad Pierce, duly seconded, it was agreed to approve the RFP with the issuance date changed to June 10th, and to postpone any decision on a vendor proposal until the August meeting. (Secretary's note – other dates in the RFP also needed to be changed to accommodate final action on a proposal not taking place until August.)

C. WORK PROGRAM – Alison Biggs reported Bill Wasmund (see #13), Mike Koscielniak and Andy Jones were the three who had so far volunteered and were working on aspects of the Work Program. Volunteers were still needed.

8. **CACNR STUDY GROUP COMMITTEE:** Chair Brad Pierce reported the committee greatly appreciated the active participation of two representatives from the air traffic control tower at its last meeting and looked forward to their continued attendance. He also thanked Jennifer Redding from the FAA Regional Office for approving their return to the committee.

He next reported that, as requested, the committee had looked into possible mitigation strategies to reduce the number of overflights and low-flying aircraft within the 3 Towers and Elizabeth practice areas. It had also been asked to include the practice areas in the group's scope of work by providing data analysis and developing operational mitigations. Its findings and recommendations had been included in the email for this meeting.

The report provided background on the development of the practice areas, the growth of the Elizabeth, Elbert County, and Kiowa areas, and the FAA's mention of minimum safe altitudes for aircraft flying over "congested areas," leaving the application and definition of "congested area" to individual assessments.

The current study area was located within the Centennial Airport Class D airspace, which enabled collaboration between the airport, the local FAA control tower, based flight schools, and CACNR. The 3 Towers and Elizabeth practice areas were in uncontrolled airspace approximately two miles southeast of Centennial's airspace boundary or approximately nine miles from the center of the airport. The airport and local FAA tower do not have jurisdiction in that area.

Consideration had been given to the challenges presented for pilot training in areas surrounding Centennial Airport, including the existence of nearby Denver International Airport, Buckley Space Force Base, and Colorado Air and Space Port. The vertical cap provided by the overlying Denver Class B airspace allowed separation of larger and faster jets from the smaller propeller aircraft used for training, but did increase congestion and limit flexibility for use of certain other areas. Population density differences were also a factor.

The committee acknowledged the seriousness of the issue with aircraft noise and repetitive flights in the requested study area, but after considerable consideration, it had been determined the committee's current scope of work did not include developing operational mitigations or providing continuous data analysis of the 3 Towers and Elizabeth practice areas. However, the committee made three recommendations for CACNR to

1. Request flight schools to avoid ground reference maneuvers in the 3 Towers and Elizabeth practice areas. Such maneuvers require aircraft to be lower to the ground, generally a thousand feet above ground level. These would be requested to be conducted in the more easterly practice areas. For reference, some based flight schools have already adopted this practice as mandatory in their standard operating procedures.
2. Request flight schools to adopt a standard altitude entering and exiting the 3 Towers and Elizabeth practice areas to allow for maximum vertical separation between the aircraft and communities. This practice would help flight schools be good neighbors while transversing through the practice areas.
3. Continue working with the Colorado Pilots Association to address and relay concerns about flight training activities in the practice areas.

It had been noted that any concern about low flying or erratic maneuvered aircraft should be directed to the FAA through the Denver Flight Standard District Office (FSDO), the regulatory body which would determine any possible violation of FAA regulations.

Discussions, clarifications and observations:

- The three training boxes to the west of the airport were considered unacceptable or of concern to flight instructors due to the rising terrain, more frequent turbulence and wind shear, traffic congestion and airspace constraints.
- The 2020 population figures used did not reflect the current populations of the areas involved. This had made the comparisons cited by the committee in that paragraph of its report inaccurate and the paragraph should be stricken.
- Although pilots were already asked to voluntarily refrain from doing ground reference maneuvers in these training boxes, there had never been an official CACNR recommendation to that effect, thus recommendation #1.
- Question was asked what the standard altitude was or would be as referenced in recommendation #2? Response was it would not be for 'us' to determine but would be up to the flight schools; it was anticipated it would be close to two thousand feet. The topic was on the agenda for the next flight school meeting.
- It was noted CACNR had never worked formally with the Colorado Pilots Association or attended any of its meetings. Having one

of CACNR's Alternate Representatives also be an active board member of the pilots' group had been very helpful, as he had served as an informal conduit, taking what CACNR had heard from the communities to the broader flying community along the Front Range and the State. Recommendation #3 seemed to make a communication channel between CACNR and the Colorado Pilots' Association more recognizable, official, and useful for the future. Mike Koscielniak was thanked for his role in all of this!

- It was also noted when information had not seemed to be getting to the pilots, the pilots' association had published several templates, map overlays, the Noise Abatement Guidelines, and other items for the use of pilots, and this had been much appreciated. That type of information sharing and the resulting related conversations could result in broader communication channels throughout the state and to other flight schools as well. Mike Koscielniak was again recognized for his actions.
- Question was asked how to get in touch with the Denver FSDO with safety concerns, reports of low-flying aircraft, etc. That part of the FAA can be reached through the airport's website, noise.centennialairport.com, or it could be accessed through the FAA website, FAA.com.
- Noise reports, data, and complaint information from the communities continued to be shared during the mandatory flight school meetings, and some individual schools had also been informed of specific problems involving their school's flights. Some schools were responding by giving instructions to their members about the issues. Others, perhaps not so much.

MOTION TO EXTEND THE MEETING TIME: A motion to extend the meeting time by 30 minutes was made by Don Sheehan, and duly seconded. The motion carried.

- Question, was asked if CACNR should communicate with the Denver FSDO, providing the kind of information available from members of our communities who had tracked planes. It would seem appropriate for CACNR to be on record as having identified safety problems, and would appreciate the FSDO's attention to them. Or should it be on the CACNR agenda so there could be more specific information gathering to create a compelling communication to send to the FSDO? It would need to focus on safety rather than noise for the FSDO to even consider it. Getting any kind of response from the FSDO could be useful in the future.
- There was considerable discussion of the FAA's lack of a specific definition of a congested v. non-congested area, and the frustrations that caused. Leaving the decision up to individual inspectors would result in an incalculable number of different standards. It was again as though the FAA had found another way to prevent careful consideration of the problems aircraft cause for the public.
- Suggestion was made for informational letters about the issues under consideration to be sent to the actual owners or financiers of each flight school. They could be asked to look into the situations with their chief financial officers and their membership, and perhaps others. Mike K. volunteered to bring a draft of such a letter to the August CACNR meeting. It would need to be sent personally to each company owner. Airport staff indicated that information was available for CACNR's use.
- Frustration and disappointment was expressed that with all the work done by the committee to help Greenwood Village, similar assistance was not being provided to those in the 3 Towers and Elizabeth areas. Would there ever be any way to help someplace other than Greenwood Village if the committee was given a different charge? The committee had discussed the problem at length, and the decision had been made as given in the report.

On the motion of Brad Pierce, duly seconded, CACNR adopted the 3 recommendations from the CACNR Study Group Committee.

9. **AIRPORT DIRECTOR:** Mike Fronapfel indicated he would be brief, but did want to note that operations through the end of April were almost identical to that time last year. Fuel sales were 5.8% higher than last year, surprising since operations were flat and fuel costs were higher.

As noted, the FAA had participated with the last Study Group Committee and had been welcomed with open arms. Time had been spent reviewing the activity, mediations, and progress over the last year, as well as the dashboards, which they had not seen.

Work on the Signature hangar was progressing, with completion expected in Spring 2027. Work on the air traffic control tower was also continuing, with completion anticipated late Summer 2026. He reminded that the tower would be closed from 10:00 p.m. until 5:00 a.m., Monday through Thursday through June 12th. There would also be some additional nighttime closures toward the end of July and the exact dates would be provided to CACNR. The Hot Dogs and Airplanes Runway 5K event was the next weekend, with about 2,000 people participating as well as others attending, vendors, sponsors and spectators. Due to an industry conference in Pueblo on a conflicting date, the ACPAA meeting would be on June 18th instead of June 11th.

Question was asked if Centennial expected any differences in operations with the airport in Aspen closing. Most aircraft go to Eagle or Rifle if they don't use Aspen, so only a small difference would probably be noted. In the Winter, some now go to Aspen, drop their passengers and come to Centennial because there is more space to park and fuel prices are lower. If Aspen is closed, more might come here and their passengers would either drive or helicopter to Aspen, but both Rifle and Eagle have more ramp pace, which might or might not fill up. It will likely be a 'remains to be seen' situation.

Zach Gabehart reported the FAA had just notified the airport of a proposed updated arrival procedure into the airport. The change affected a star or standard terminal arrival meant to bring aircraft from high flight levels down into the terminal area and set them up to approach into the airport. It would be used by jet aircraft approaching from the northwest, only when under instrument flight rules, so a fairly small segment of aircraft would be using it; single engine planes would not be. Gabehart provided slides comparing current routes and the proposed revised routes, which had been requested by the air traffic controllers and would require fewer directional changes to aircraft by them since the routes would be in the GPS.

MOTION TO EXTEND THE MEETING TIME: A motion to extend the meeting time by 30 minutes was made by Andy Jones and duly seconded. The motion carried.

Although this would affect aircraft approaching from the northwest, that westward shift would make a change for those outside that airspace, so those in the foothills could notice an increase in traffic because of the FAA's action. Questions were asked if the FAA was telling anybody about this, or if an environmental study had been done on the shift. The FAA is apparently only required to do an environmental assessment if it is 3,000 or less feet above ground, and there is only one segment of this approach that met that criteria. It seemed that one change segment had been evaluated as part of the 2020 Denver Metroplex project and had been included as an approval in that overall assessment. Anything above the 3,000 foot buffer does not require any sort of environmental action.

As far as advance notice is concerned, apparently the FAA has some sort of an internal comment process about which Centennial Airport staff had no knowledge and which comment time had closed; Centennial was now signed up to receive such notices. Comments which could have been made would have included that people in the foothills would be impacted negatively by the change; The shift of traffic from a more populous to a less populous area might be considered a positive by the FAA, but it likely would be noticed more because of that, as well as because the different terrain reflects noise more dramatically. It would also be harder to find a landing spot in the foothills in the case of an emergency. Observation could also have been made that operators would likely experience more turbulence and more discomfort over the foothills, as well as the safety concerns mentioned. It was noted this change had been sent out to corporate pilots as soon as it was available and would likely be discussed at that group's monthly meeting and their observations shared with CACNR in August.

10. **OLD BUSINESS:** Dave Heller had provided a report from the UC Davis Noise and Emissions Symposium which he had attended along with Chris Eubanks and Pam Thompson. The cover page of the report had been in the mailing, but the referenced attachments had been missed and were provided on site. There had been some discussion during previous CACNR meetings, but to recap, the symposium was a great networking and learning environment, and particularly helpful for those new to CACNR and aviation noise. There had not been much specific to general aviation airports, but there was still a lot of relevant noise and related topics.

Thought was expressed that it might be time to become more aggressive about getting some general aviation topics on the agenda, or to have general aviation represented on some of the panels. That had been mentioned by the CACNR representatives when they completed the post-conference evaluations.

11. **NEW BUSINESS:** None

12. **PUBLIC COMMENT EXTENSION:** Not needed

13. **REPRESENTATIVES COMMENTS:** Nothing from members of the Colorado Municipal League.

- Bill Wasmund reported Wings Over the Rockies was having a breakfast fly-in on June 13th. About 1,000 people were expected at the event, from 7:30 a.m.- 11:30 a.m. If they could arrive on time, two F-16 Vipers would take part in the fly-in, and would be there until about 9:00 p.m. This was all in support of a Dos Gringos (an American fighter pilot band) concert that evening, from 5:00 p.m. - 8:30 p.m.

The June 2026 issue of *Flying* magazine contained an article about Wings Over the Rockies, about 6-7 pages long and well done. A copy had been provided so it could be shared with CACNR, and it would be attached to the minutes.

For part of his volunteer work with the CACNR Work Program, Wasmund had created two 30-minute presentations that could be used for new CACNR Representative and Alternate Representative orientation and also for airport tour participants. The first was an introduction to Denver airspace and the flight school practice areas. The second one was called Sound, Noise and Human Perception and was an abbreviated version of the Noise 101 course that many have taken. It condensed much of that information into about 30 minutes; if viewers required additional information, Wasmund volunteered to help them individually.

It was anticipated these would be put on the updated website, and Wasmund had also shared them for CACNR distribution before the website was operational.

- Brenda Dyche first wanted to formally request a data comparison to be done for one of the flight training areas in Douglas County compared to 3 Towers.

Second, she had found an article stating "*A congested area in the eyes of the FAA is defined by the number of complaints that come from a given area or individual. A single phone call to the local FSDO turns one person's house into a congested area. An enforcement action has in the past been taken against pilots who operated aircraft below 1,000 feet in what the pilot considered a sparsely populated area. The following is an FAA chief council opinion taken from the federal aviation regulations explained (Jeppesen, 2005). 'Congested area' is determined on a case-by-case basis. Examples of what was determined by the [NTSB to be congested areas] are 1. an area consisting of 10 houses and a school, 2. a university campus; 3. a beach area along a highway; 4. over a camp where there are numerous people on the dock and children playing on the shore.*" Dyche noted some of these criteria fit the 3 Towers area and the Elizabeth area as being congested.

Third, in response to the concern about the additional cost to training flights for going further east, she observed if they can pay for flying lessons, they can probably afford the gas to take a straight line from the airport east over less congested areas instead of flying down south, directly into 3 Towers, buzzing the houses there, and then making a beeline north and east to the less congested areas. Numerous violations of aircraft flying below 1,000 feet out there had been reported but nothing was being done about them. She had heard nothing from the FAA, nothing.

She recommended the 3 Towers training box and the Elizabeth training box both be closed entirely due to the large amount of development in those sites. Less congested space is available further east. Listening to recordings of what the neighborhood sounds

like when the planes are not there and when they are gives some idea of what the neighborhood deals with on a far too regular basis from before 7:00 a.m. until after 10:00 p.m.

- Brad Pierce thanked Chris Eubanks for chairing CACNR during the past couple years. He noted appreciation that Ebanks was staying on CACNR representing Castle Pines.
- Alison Biggs issued a "ditto" to Pierce's comments to Eubanks, followed by further commendations by the other Representatives around the table.
- Reminder was given that the Vice Chair position would need to be filled at the August meeting, so volunteers were being sought or no one would leave the room on August 5th!
- Mike Koscielniak indicated as he was working on the Work Program on noise study issues, looking at GA airports with roundtables and noise monitors and had found that Aspen and Jackson Hole Wyoming had dashboards and noise monitors. Surprise! In addition, there were 20 airports in Colorado that had some sort of noise abatement in effect.

14. **RECOMMENDATIONS TO ACPAA AND OTHERS TO POTENTIALLY REDUCE NOISE OVER AFFECTED COMMUNITIES:**

None

15. **NEXT MEETINGS:**

- A. **CACNR** –
- | | |
|--------------|---|
| July 1, 2026 | NO CACNR MEETING |
| Aug 5, 2026 | 6:30 p.m. 7565 South Peoria Street, Englewood, CO 80112 |
| Sept 2, 2026 | 6:30 p.m. 7565 South Peoria Street, Englewood, CO 80112 |
| Oct 7, 2026 | 6:30 p.m. 7565 South Peoria Street, Englewood, CO 80112 |
| Nov 4, 2026 | 6:30 p.m. 7565 South Peoria Street, Englewood, CO 80112 |
| Dec 2, 2026 | 6:30 p.m. 7565 South Peoria Street, Englewood, CO 80112 |
- B. **ACPAA** –
- | | |
|---------------|---|
| June 18, 2026 | 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR |
| July 9, 2026 | NO ACPAA MEETING |
| Aug 13, 2026 | 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR |
| Sept 10, 2026 | 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR |
| Oct 8, 2026 | 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR |
| Nov 12, 2026 | 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR |
| Dec 10, 2026 | 3:00 p.m. 7565 South Peoria Street, Englewood, CO 80112, Pam Thompson for CACNR |

C. **PART 150 NOISE COMPATIBILITY STUDY ADVISORY COMMITTEE** – August 5, 2026

16. **ADJOURN:** Before adjourning the meeting, Eubanks asked for a warm welcome for Pam Thompson as the next Chair of CACNR. Such was given. The meeting was adjourned at 9:18 p.m.

Alison Biggs, Secretary

Some issues/observations raised at CACNR meetings related to the Part 150 study: (not in any order of priority, but as they came up at various meetings)

Is Part 150 looking at:

1. The effect of Covid and Metroplex on the airport and the surrounding communities
Part 150 assesses noise from aircraft operations originating from or ending at the Study airport and represents the existing condition and five years beyond the existing condition. Therefore, the effect of COVID (2020) and the Metroplex implementation (2020) will not directly be assessed; they are considered existing conditions.
2. The effect of Next Gen on the airport and the surrounding communities
Please see response number 1.
3. Is there any useful information the consultants have learned from other airports/ roundtables/Part 150 studies elsewhere
APA hired the consultants with the most Part 150 experience; with Mead & Hunt and HMMH having conducted more Part 150 studies than any other competing firms (over 100 studies between the two firms). In addition, no firm has more experience with airport noise roundtables than HMMH. This team was selected to bring their experience to APA, and all alternatives within the study were formulated based on the combination of the public and stakeholder process paired with lessons learned from their industry-wide experience.
4. Will the set of summary notes only be available at the conclusion of the 7 Study Advisory Committee meetings, or will a summary of each meeting be prepared and available before each subsequent meeting? It seems waiting for a set to be prepared and presented until after all meetings are concluded would not be the most useful to the committee as its work progresses.
The presentation for each SAC meeting has always been posted on the website and notes regarding questions, comments on alternatives or the Study itself have been addressed in the FAQs, which are regularly updated. Also, we have addressed substantive questions that have come up in the SAC meetings and addressed those questions in the subsequent round of meetings. The SAC included a member from the CACNR to report back and create a cohesive link between the two groups for information sharing. One of the important roles of the SAC members is to bring back notes to their respective community at the meetings.
5. In addition to identification of completed measures from the previous Part 150, will there be some indication of the accuracy of the forecasts from the last Part 150
No. This Part 150 is being done so that the noise exposure maps represent current and forecast conditions as known today. It does not look backward. Additionally, Part 150 has a provision to update the NEMs if future operations end up being substantially different than the forecasts.
6. The work would seem to merit more than one public hearing. Having the only public hearing to be held on the final document may leave the public feeling it is being presented with a fait accompli, so why have a hearing? Not seeing a proposed document until it is final may not meet the needs of our currently so-very-involved public. Or don't call it 'final' if there will still

be further work to be done after that public hearing.

Part 150 requires a public hearing for the public to comment on the APA-recommended measures in the draft Noise Compatibility Program (NCP) update to address the noncompatible land uses identified in the Noise Exposure Map (NEM). APA expects to not only present measures to address noncompatible land uses, but also aircraft noise exposure concerns raised by the public through the open houses. The materials presented in the hearing will be materials that the stakeholders have seen in various formats during previous meetings and presentations. However, it will be focused on those alternatives that are recommended to move forward. Revisions to the document may be made based on comments in the public hearing and comment period. The draft document will also be available at least 30 days prior to the public hearing.

7. Also, having the one public hearing immediately following a 4th workshop bodes for a very long night, and no opportunity for the input from the 4th workshop to be rolled into a real final document. Combining these two does not seem quite right.

The 4th workshop is designed to present the APA-recommended NCP measures so that the public can provide their comments on the recommended measures at the public hearing. This is not the first time the public will have seen these measures, but it will be the first time they have been presented as “recommended” because APA will consider public comments received during the process before making recommendations. APA will not submit the NCP with the recommended measures before hearing from the public – that is the purpose of the public hearing. The format will follow closely with the last public meeting, with an open workshop first, followed by a short presentation, and then the opportunity to submit verbal and written comments.

8. Will there be acknowledgement or mention of the *Denver Post* article reporting Denver has a 50 decibel limit for noise in residential areas at night; article also noted the negative effects of chronic noise exposure and sleep disturbances caused by noise; one investigator recommended sound levels of 35 decibels or less in sleeping areas

No. Part 150 has identified land uses compatible with various noise levels as reported using the Day-Night Average Sound Level (DNL) and has determined that all land uses are compatible with noise below 65 dB in terms of the DNL metric from aircraft operations. That is the required metric for this Study. The health effects of noise are something that the FAA is studying, though if/how it might affect the Part 150 process or requirements is currently unknown.

9. Part 150 would benefit from more community involvement rather than less, even though it might take longer

Thanks for your comment. Part 150 only requires that the public be provided the opportunity to review the NEM and NCP documents; and an opportunity for a public hearing prior to submitting the NCP to the FAA for review and subsequent approval/disapproval of the Airport-recommended measures individually. However, the Airport has included a much broader

stakeholder involvement plan as part of this Study. Below is a summary of all the meetings to date in which members of the Study team have attended to present information on or answer questions pertaining to the Part 150 Study (through the upcoming meetings in May 2026). By May 2026, the Study team will have attended 87 meetings in total for the purpose of informing stakeholders about the Part 150 Study.

Meeting	In Person	Virtual
Study Advisory Committee	5	0
Centennial Airport Community Noise Roundtable	6	11
Arapahoe County Public Airport Authority Board	5	23
FAA Study Group	15	19
Public Workshops	3	0
Total	34	53

10. How will the Part 150 study consider or utilize the airport's Strategic and Master Plans
Part 150 requires that all projects approved by the FAA and to be implemented within the five-year forecast horizon be included in the Forecast Noise Exposure Map. So, any substantial changes, particularly to the airfield, would need to be included. No changes to the airfield that could affect noise are expected in the next five-year period.
11. Will there be mention of safety concerns over the increasingly populated areas surrounding the airport – including those at some distance from the airport - recent and more frequent crashes, the accident rate involving Centennial related aircraft
Not directly. The Part 150 is solely focused on land use compatibility with noise from aircraft operations. However, safety will be assessed for any suggested change in aircraft flight procedures potentially recommended as a noise abatement measure. Vetting of all operational changes will require coordination with FAA and a detailed safety review.
12. Will the anticipated effect of increased capacity (including JSX) be modeled or considered, and to what detail (touch and goes, transient or airport based, scheduled "charter" flights, etc.)
At the direction of FAA, JSX was added to the forecast condition Noise Exposure Map, and is included in the accepted NEM.

13. What else is being modeled or will be; who decided what to model, any input from the public
Each and every suggested measure to address the noncompatible land uses around APA will be considered. Those that can proceed with modeling (after feasibility assessment), will be modeled to determine the potential noise benefit in terms of noncompatible land use.
14. Consider making Greenwood Village portable noise monitor permanent
Part 150 requires an assessment of the noise monitoring program be completed as the system was acquired with federal funds through the Part 150 program. This has been suggested to the Airport. Therefore, this will be assessed. However, it is the current FAA policy to not fund any noise monitor outside of the 65 dB DNL contour as reported in the FAA-accepted NEM, so if the Airport moved forward with this recommendation, it could be at their own cost.
15. Consider moving any current noise monitors, or adding additional noise monitors to identified “problem” areas, both currently and anticipated due to already approved land use developments?
Part 150 requires an assessment of the noise monitoring program be completed as the system was acquired with federal funds through the Part 150 program. It is the current FAA policy to not fund any noise monitor outside of the 65 dB DNL contour as reported in the FAA-accepted NEM. This can be included in the measure, but likely would not be federally funded. The Airport already has a portable noise monitor that can be used in some of these areas.
16. Will the public’s concern that flight schools are seemingly allowed to do whatever they want be addressed - frustration that NAG are only allowed to be voluntary
Flight training activity has been a major discussion topic throughout the Part 150 process. Many of the complaints around flight schools deal with the extension of the pattern to the north during busy time periods. The FAA Study Group has been working on this challenge and has already implemented voluntary measures to reduce the extension with positive results. (<https://tinyurl.com/26hpsebx>). All public concerns raised during the process will be assessed if applicable to Part 150. It is correct that many operational measures (such as preferential runway use, etc.) are voluntary, and at the purview of the tower and the pilots, as the top priority is safety.
17. What will Part 150 forecast in relation to the noise exposure maps
The forecast assumptions are detailed in the [Final NEM package](#).
18. Anything new on how the Part 150 will address incompatible land uses around the airport, considering what has already occurred and is planned or approved by some jurisdictions – almost too late for Part 150 to influence anything
Part 150 is solely focused on land use compatibility around an airport with noise from aircraft operations. However, land use development is the sole responsibility of the local land use jurisdictions. Neither the FAA nor the Airport can control land use development outside the Airport property. A major focus of the Study has been to review the existing land use measures. The Study team and Airport have collaborated with the land use jurisdictions from the beginning to understand constraints. The update of the Airport Influence Area would be helpful for consistency in limiting noncompatible land uses near the Airport. It is imperative

that the local land use jurisdictions adopt measures to maintain land use compatibility with noise from aircraft operations, but this is outside the Airport's control.

19. Can CACNR have updated specific progress reports re Part 150 at every or every other meeting, in time for consideration before meeting – don't just refer us to the website – we were promised close involvement but does not seem to be happening

The CACNR has a representative on the SAC and the Part 150 Team has kept the Roundtable apprised of progress at the CACNR meetings, which has also been supplemented by the team presenting at meetings at key points in the Study. Additionally, the Study team has virtually attended every CACNR meeting that wasn't attended in person and took notes for the full Study Team. Please see the list of meetings attended above for reference.

20. Could flights take off over Cherry Creek Reservoir – this recommendation was made in the last Part 150 and the FAA turned it down – it should/ought to be reconsidered and brought up again

The Part 150 is including assessment of jet aircraft turning right 10 degrees to have them fly over the Reservoir. This analysis will be presented in May.

21. Will the FAA's recognition of Elizabeth as a densely populated area be reflected in the study – it should be

Part 150 includes existing land use by parcel and estimated population based on the 2020 Census for areas on the Noise Exposure Maps. The town of Elizabeth is well outside of the area that is the focus of the Part 150 Study. The airport acknowledges the concerns being raised from areas within the training boxes and is exploring potential approaches outside the scope of the Part 150 study to address them.

22. Will the need for the FAA to unmask tail numbers be addressed

Unmasking of tail numbers is not a necessary component for the Part 150 Study as unmasking of tail numbers has no bearing on compatible land use. However, the Airport has been working with the FAA and potential third-party providers to find a way to better track users through the voluntary fly quiet dashboard.

23. Will the current administration's refusal to let the FAA interact with Centennial (and others) be addressed

No. Part 150 requires interaction with various entities of the FAA for which we have had the cooperation required. If we do not continue to get the cooperation required, then this will have to be brought to the FAA's attention, as the Part 150 Study cannot be completed without such cooperation. While not pertinent to the Part 150 Study, the Airport recognizes the frustration of the Roundtable in having the FAA depart the Study Group for the last few months. The Airport recently received notice that the FAA plans on re-engaging with the CACNR subcommittee (FAA Study Group), which has been on pause for a number of months.





RICK DURDEN

FLYING The Ultimate Issue 45 June 2026

TREASURE TROVE OF AEROSPACE

Denver's Wings Over the Rockies museum continues legacy of learning where history meets the future

Rick Durden

Douglas B-18A Bolo bomber, developed from the DC-2 airliner.



good air museum is a treasure for pilots—a great one is a treasure for everyone.

The Wings Over the Rockies Air & Space Museum, with its separate 15-acre Exploration of Flight campus, qualifies as a great air museum. The Denver facility is a treasure that celebrates our military and civilian aerospace history, the myriad people who made it happen and, welcoming the future, uses forward-looking technology in teaching how to be involved in what's to come in aviation and space.

The History

What would become the Wings Over the Rockies Air & Space Museum started as a small part of a large Army Air Corps base in 1937. Beginning in 1988, an evolving group of volunteers who recognized the contributions of the tens of thousands of people who served and trained at what became Lowry Air Force Base kept some aircraft (parked outdoors), memorabilia, records, newspaper clippings, and jotted notes of the human history, events, and aircraft in a space devoted to keeping memories alive and called the Lowry Heritage Museum.

Volunteers stored what they could collect from the time Lowry was established after the Army Air Corps reacted to the



A McDonnell Douglas AV-8B II+ Harrier, noted for the third highest combat time of any Harrier in the world.



RICK DURDEN

deterioration and several fires at its Chanute Field in Illinois by soliciting bids for a replacement training facility in 1934. With the military's budget cut repeatedly during the depths of the Depression, there wasn't money to make needed fixes to the badly neglected buildings at Chanute, and it was determined it would

be cheaper to build new.

Denver submitted a bid and followed up by purchasing a tuberculosis sanitarium and grounds. The Works Progress Administration converted the grounds to an airfield, and in 1937 the Denver Branch of the Air Corps Technical School was formed with departments of

photography and armament. Those departments were only a first hint at the magnitude of the base that would later that year be named Lowry Field after Francis Lowry, the only Colorado aerial observer killed in World War I.

In addition to the often-hectic aircraft operations routine to an air base, Lowry would be dedicated to training the thousands of enlisted men and officers for the hundreds of specialized jobs that would be required to integrate into the process of hurling mechanical invective at the country's enemies in WWII.

An 8,550-foot paved runway was completed in 1941 in recognition that the heavy bombers being developed were going to require much more concrete than in the Air Corps' inventory. It also served notice that the base and its buildings were going to need to be massive to handle the needs of an aerial wing of the U.S. Army that was growing at a rate unimaginable even a few years earlier. Hangar One, the home of the main part of the museum, covers 100,000 square feet and can hold a B-52—an aircraft not even on the drawing board when the hangar was built.

As the Army Air Corps became the U.S. Army Air Forces in 1941 and then the U.S. Air Force in 1947, Lowry grew and evolved.

Even after WWII, in addition to flight operations, Lowry was a school. It taught virtually everything and everyone in the Air Force—photographers (air, ground and intelligence for aerial reconnaissance); bombardiers; accountants; clerks; pilots; flight engineers; operational crewmembers; combat reporters; armorers; rocket propulsion experts; radar-operated fire-control system crewmembers; missile crewmembers; handlers of nuclear weapons, and maintainers of gun and rocket sights to name a few. Thousands graduated from the schools annually. According to Wings Over the Rockies museum curator Stewart Bailey, there were 20,000 people on the base at any given time.

The U.S. Air Force Academy inducted its first class of cadets in 1955 at Lowry, which would be its home for three years while the current AFA facility was constructed in Colorado Springs. In 1966 the Air Force ceased flight operations at Lowry, closing all runways. However, a variety of aircraft remained on the base



as they were essential for the training that continued to be conducted until the base was closed in 1994.

The Lowry volunteers didn't shut down when the base did. Instead, joined by civilian volunteers, they successfully petitioned the Air Force and the city of Denver to turn over a portion of it to them for a museum. The transfer of Hangar One and adjacent land took place in 1994, and the museum was formed. Through hard work, extensive fundraising, and perseverance, Wings Over the Rockies became Colorado's official air and space museum in 1997.

What started as a determined group of volunteers has grown to one of the larger collections of historic military jet aircraft with a nice mix of significant civilian aircraft presented in a way that helps bring them to life. There are large-screen videos beside several of the aircraft, many featuring descriptions by those who flew and maintained them. Many of the volunteer docents worked with the aircraft before they retired from the military and now bring a personal touch to their tours.

As we talked with Bailey about the museum, he emphasized that the people behind it wanted it to be much more than a display of "just another silver airplane." He said they sought to bring to life how the aircraft came to be and the thought processes of those involved in designing, flying, and servicing them.

Exploring Inside

There's a desire to look up and understand how a 100,000-square-foot area could be covered with a clear span that left all the floor space open. The technology of 90 years ago took the much smaller, wood-truss structure design of WWI hangars and hugely inflated it using steel so that airplanes not even conceived could fit inside without effort.

There's so much to see immediately. The floor, save for the very center, is covered with aircraft of all shapes and sizes. Around the perimeter and on the mezzanine sit galleries in rooms dedicated to such things as the Colorado Air National Guard, military uniforms,

avionics, Lowry AFB, cameras, armaments, Colorado astronauts, and flight breakthroughs.

A Douglas B-18A Bolo is displayed without the right engine cowl, allowing a clear view of its 1,000 hp Wright R-1820-53 radial engine. There are only six B-18s left in the world, and it feels appropriate that the museum has one because a B-18 was the first airplane to land on Lowry's newly built unpaved runway in 1938. It was to be used for training because the bomber was already obsolete. It's a striking juxtaposition to the B-52—the type parked in front of the museum—which is still in service after more than 70 years. Consider that airframe and engine development was moving so fast at the time that the first B-18 landed at Lowry, having only been in service four years, and its 216 mph maximum speed and puny armament made it so out of date that it would have been a slow-motion death trap against fighters that were already more than 100 mph faster.

The display includes a video with detailed information on the development of the bomber during the depths of the Depression as the Army tried to get the most for every scarce dollar. Douglas took the DC-2, increased the wingspan slightly, moved the wings from a low-to a mid-fuselage position while deepening the fuselage to allow space for a bomb bay. It also created a Plexiglas nose for a bombardier and nose gunner and added a top turret. Spending some time looking at the airframe it's evident how hard Douglas worked to keep manufacturing costs down by using as many components from the DC-2 production line as possible.

The Bolo on display was a bombardier trainer during the war—although not at Lowry. After the war it was sold and used as a freighter, crop duster, and survey aircraft. In 1958 it was caught running guns to Cuban dictator Fidel Castro and confiscated by the U.S. Border Patrol. Now owned by the Air Force, it was loaned to Wings Over the Rockies, where its painstaking volunteers restored it to its prewar bomber configuration.

A walk around the floor of the huge hangar is initially sensory overload as one famous aircraft after another is encountered. A Bell UH-1M "Huey" gunship is displayed—shark's teeth and

all—sitting in a revetment as it would have appeared when it flew in combat during the Vietnam War. Colonel Bill McPherson flew the helicopter on display when he was in Vietnam, acquired it after the war, and piloted it around Colorado to meet veterans' groups before donating it to the museum.

Nearby, also in a Vietnam revetment display, is a McDonnell Douglas F-4 Phantom II. Placards and a video provide information about this incredibly versatile Mach 2+ fighter that served with the Air Force, Navy, and Marines as well as with 15 other nations. This cannon-equipped fighter also represents the learning curve that went on in combat after military leaders originally decreed that the F-4 be armed only with missiles for "modern" air-to-air engagements. Real life proved that to be a serious mistake, so guns were added, allowing greatly increased success. The fighter on exhibit was used in flight and ground test programs for the Air Force before being transferred to Lowry in 1982 as a munitions loading trainer—yet another airplane that served at Lowry to educate Air Force personnel that continues in a new life teaching the public about U.S. military history.

Tucked between an F-102A Delta Dagger and F-101Voodoo sits the diminutive but terrifying F-104C, a Mach 2.2 design from the 1950s with a total wingspan of only 21 feet, 9 inches, and a wing loading that made for challenging handling at low speeds. It set numerous altitude and speed records, including flight at over 100,000 feet. It was a lethal weapon in the hands of a well-trained, experienced pilot. Unfortunately, the process of getting pilots to the needed level of skill proved difficult, and the series had a frighteningly high accident rate. The display airplane is another of those in the museum that saw combat, flying with the 435th Tactical Fighter Squadron from Udorn Royal Thai Air Force Base during the Vietnam War.

The museum is arranged so that it's possible for visitors to move close to the aircraft. It's fascinating to be able to clearly see the "alert start" switch on the landing gear of the B-1A Lancer. It was a button slapped by crewmembers that started the engines as they raced up into the jet for an immediate take-off. You can also see the wing-folding

Army Bell UH-1M (top). Spare engine for AV-8B II+ Harrier (middle left). Grumman F-14A Tomcat (lower right).

RICK DURDEN (3)



Boeing B-52B Stratofortress, the seventh manufactured (left). A sculpture tribute to WWII soldiers (below).

mechanism in the Grumman EA-6B Prowler and the ducting for the vectored thrust capability of the AV-8B Harrier, which boasted the third-highest number of combat hours of any Harrier. The Harrier was the centerpiece of the museum's celebration of the 250th anniversary of the U. S. Marine Corps on November 9, 2025.

Yes, Wings Over the Rockies gives you a lot to experience.

There's the innovative but hopelessly screwy Hiller XROE-1 Rotorcycle—a tiny, folding helicopter that was to be dropped to downed fighter pilots. A pilot could unfold it, fire up the diminutive piston engine and—if they knew how to operate the cyclic, collective, and anti-torque pedals of a helicopter—fly it home. One of seven that survived from the sensibly abandoned project is on display.

Then there's the Schweizer SGS 2-33 glider used for training at the Air Force Academy. It's not just any academy glider. Once the museum received it on loan and went through the logbooks, volunteers discovered that one Chesley "Sully" Sullenberger made training flights in it as a cadet. Those lessons paid off some years later when he safely landed a far larger glider carrying 155

people on the Hudson River—an Airbus A320 that lost both engines after hitting a flock of birds.

Future Forward

Looking more deeply at what's offered by Wings Over the Rockies at both its Lowry location and Exploration of Flight campus is akin to peeling the layers of an onion—there is simply so much to see.

At both campuses there's an Aerospace Exploration Pathway that prepares students in grades 6-12 for careers in aerospace—"hands-on experiential learning in a real-world context that allows students to find out, firsthand, what it takes to succeed in the aerospace industry." At the Exploration of Flight campus there are classes on becoming a drone pilot and how to make a living doing so, a pathway toward obtaining a pilot certificate that includes ground school, and some scholarships for flight training that provide funds raised by the Captain Jeppesen Foundation.

There's also a Teacher Flight program that provides a "total immersion

in the aviation industry for K-12 formal educators with direct support toward certifying new Career and Technical Education (CTE) pathways." Former NASA astronaut Eileen Collins serves as the honorary chair of the program and supplies information in a video on the museum's website.

There are summer camps, Scout programs, teacher workshops, and field trips. Many flight simulators can be rented for pilot training. Speakers regularly are invited to make presentations at the Exploration of Flight campus. Want to go to the Air Force Academy? There's a good chance that there will soon be another program featuring current cadets talking about their experiences applying to and attending the academy.

Chances are, you won't be able to get enough of your time at Wings Over the Rockies Air & Space Museum. Its location on a former Air Force base renowned for its dedication to teaching and learning is somehow symbolic of the ongoing goals of the museum. It's successfully carrying on the biggest part of its avowed mission: "To inspire innovation and action for the next generation of aviation and space explorers." 

Rick Durden is a retired aviation lawyer, active CFII, and holds an ATP with type ratings in the Douglas DC-3 and Cessna Citation 500 and 680. He is the author of *The Thinking Pilot's Flight Manual* and *How to Survive Flying Little Airplanes and Have a Ball Doing It*.



'LEST WE FORGET'

One of the most powerful displays at the Wings Over the Rockies Museum in Denver is a sculpture entitled "Lest We Forget: The Mission." The three, life-size bronze statues of World War II fighter pilots on and around a ready room bench are a duplication of a part of the full sculpture that was first unveiled at the museum and is now on display at the National WWII Museum in New Orleans. Conceived by artist Fredric Arnold at age 87, he completed it at 94. At 19, Arnold joined the Army Air Forces shortly after the Pearl Harbor attack and was trained as a fighter pilot, going into combat in North Africa in P-38 Lightnings. Of the original 14 pilots who initially went into combat together against experienced German fighter pilots, Arnold was one of only two still alive after six months. Arnold completed 50 combat missions, being shot down once and escaping. Knowing that he'd be killed by the Germans if he were captured because he was Jewish and facing deep-seated antisemitic hostility from many of his squadron mates, he never believed he would survive the war. In 1998 Arnold learned that the only other surviving member of his cohort was dying and went to visit him in the hospital. His friend reminded him of the vow the two had made that the last one standing would act to honor the 12 comrades lost in the war. Arnold's honor to his comrades shows composites of fighter pilots he had known and flown with in a ready room at a mission briefing. In the current display, two pilots are sitting on a bench in full flying gear. This moving display is accompanied by a 20-minute video that explains Arnold originally created the sculpture to honor his 12 lost comrades but expanded it to recognize and honor the more than 88,000 Army aviators who lost their lives in World War II.

LEFT: JASON ROBERTS;
RIGHT: RICK DURDEN

CENTENNIAL AIRPORT COMMUNITY NOISE ROUNDTABLE 2026 BUDGET - Approved November 5, 2025; Updated as of 7/31/2026				
		BUDGET	ACTUAL	
INCOME:			as of 7/31/2026	NOTES
CARRY OVER FROM PRIOR YEAR		\$ 34,000.00	\$34,673.10	Carry over from 2025
ACPAA		-	\$0.00	Not to be Invoiced for 2026 - donation still accepted
CACNR REGULAR MEMBERS		-	\$0.00	Regular Members Not to be Invoiced for 2026
TOTAL INCOME:		\$ 34,000.00	\$34,673.10	
EXPENDITURES:				
WORK PROGRAM:				
PROJECT EXPENDITURES		\$ 7,300		
WEBSITE		\$ 5,000		Webmaster; Website Maintenance & Update
EXECUTIVE/WORK PLAN		\$ 500		Annual Report
CONFERENCES:		\$ 9,000	\$6,538.65	3 Reps to UC Davis (Previously 2 in 2025)
				No N.O.I.S.E. Conference held in 2025; \$4,000 had been budgeted
CONSULTATION/EDUCATION:		\$ 2,000	\$546.92	Projects with consultant(s) for entire Roundtable
MEMBERSHIP DUES:		\$ 1,000		N.O.I.S.E.
ADMINISTRATIVE:		\$ 2,000		Consultation on Work Plan
		\$ 3,000		Legal
ADMINISTRATIVE		\$ 1,650		Meeting Space
		\$ 1,500		Recorder
RESERVE		\$ 1,050.00		For presently unidentified and unanticipated expenses and/or CACNR activities consistent with the approved Work Plan.
TOTAL EXPENDITURES:		\$ 34,000.00	(7,085.57)	
CARRY OVER TO 2027		\$ -	\$27,587.53	Actual to be determined at the end of 2026
** 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."				

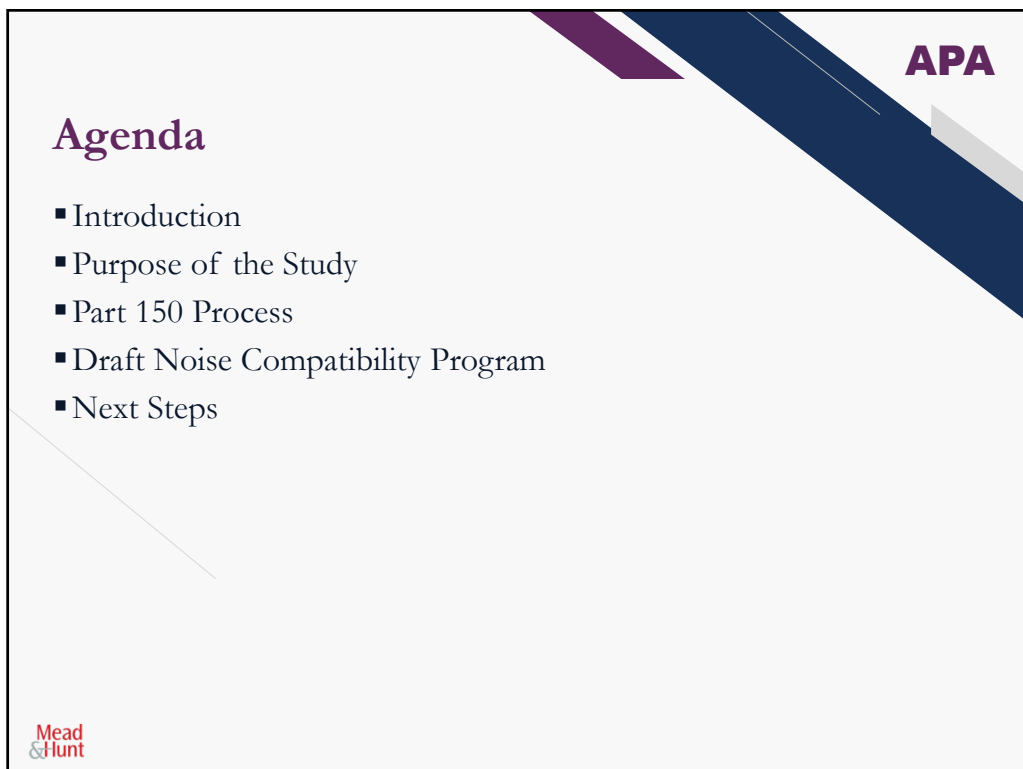
CACNR
Revenue and Expense
For the year ended December 31, 2026

[illegible]

ATTENDANCE RECORD for 2026 - 2027 CACNR MEETINGS		2026	2026	2026	2026	2026	2026	2026	2026	2026	2027	2027	2027	MEMBER REPRESENT	
		APR	MAY	JUNE	JULY*	AUG	SEPT	OCT	NOV	DEC	JAN*	FEB	MAR	%	TOTAL %
ARAPAHOE COUNTY	Rhonda Fields - AC	on line	absent	on line										67%	67%
	Leroy Evans - AC		absent											0%	
	Sreenivasan Alakappan - UAC	absent	absent	absent										0%	0%
	Vacant - UAC	absent	absent	absent										0%	
DOUGLAS COUNTY	Abe Laydon - DC													0%	100%
	DJ Beckwith - DC	X	X	X										100%	
	Alison Biggs - UDC	X	X	X										100%	100%
	Mark Adams - UDC													0%	
ELBERT COUNTY	Mike Buck - EC	absent	absent	absent										0%	0%
	Shawn Fletcher - EC	absent	absent	absent										0%	
	Brenda Dyche - UEC	X	on line	X										100%	100%
	Deidre Dyche - UEC													0%	
AURORA	Brad Pierce	X	X	X										100%	100%
	Maurice Healy													0%	
CASTLE PINES	Chris Eubanks	X		X										67%	100%
	Ron Cole	on line	X	X										100%	
CASTLE ROCK	Laura Cavey		absent											0%	67%
	Sandy Vossler	on line	absent	on line										67%	
CENTENNIAL	Don Sheehan	X		X										67%	100%
	Ryan Dwiggins		X											33%	
CHERRY HILLS VILLAGE	Dave Heller	on line	on line	on line										100%	100%
	Doug Robinson													0%	
FOXFIELD	Pam Thompson	X	X	X										100%	100%
	Frank Lawrence													0%	
GREENWOOD VILLAGE	Donna Johnston	X	X	X										100%	100%
	John Jackson													0%	
HIGHLANDS RANCH	Andy Jones	absent	X	X										67%	67%
METRO DISTRICT	Renee Anderson	absent												0%	
LONE TREE	Mike Anderson/Mike Parr 6/15/26	X	X	absent										67%	67%
	Chuck Darnell			absent										0%	
PARKER	Cynthia Liston Thye	absent	X	X										67%	67%
	Bryce Matthews	absent												0%	
ACPAA	Mike Fronapfel	X	X	X										100%	100%
	Zach Gabehart	X	X	X										100%	
AOPA	Joe Patton	X	X	X										100%	100%
	Mike Koscielniak	X	X	X										100%	
CABA	Don Kuskie	X	X	X										100%	100%
	Mike Straka													0%	
CDOT AERONAUTIC DIVISION	Todd Green	absent	absent	absent										0%	0%
	Vacant	absent	absent	absent										0%	
WINGS OVER THE ROCKIES	Bill Wasmund	X	X	X										100%	100%
	Vacant													0%	
* No scheduled meetings in July '26 or January '27															
CACNR BYLAWS:															
ARTICLE III.c. Members' Representatives and/or Alternates are expected to attend all regular and special meetings.															
If a Regular Member's Representative or Alternate does not attend at least 75% of such meetings annually in the period from April 1 through March 31, the Regular Member will be notified for potential appointment of a replacement(s).															
ARTICLE III .g. If the Representative and Alternate of any Member will be absent for a CACNR meeting, the Representative of such Member may designate a Substitute Representative for that meeting only, and shall notify the CACNR Chair of that desingation, in writing.															
06 29 26															



1



2

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.

3

Part 150 Study Process



4

Noise Compatibility Program Measures

APA

Operational Measures

- ~~1a: Modified Jet Departures on 35R~~
- ~~1b: Modified Nighttime Jet Departures on 35R~~
- 1: Turn to 010 Heading (Northeast) for Jet Departures on 35R (Day & Night)
- 2: Increased Use of 17L/35R for Nighttime Circuit Operations
- ~~3: All Circuits on a Tightened Pattern over I-25~~
- 3: Support Transition of Cessna 172 Training Operations to Electric Aircraft
- ~~5: Displaced Threshold for Touch and Go Operations on Runway 17R~~
- ~~6: Ground Reference for Base Turn in Runway 17R Traffic Pattern~~
- 4: Digital Release of IFR Traffic

Operational Measures 3, 5, 6, 7 Were determined to not meet the purposes of Part 150. Therefore, they are not included in the NCP.

The measures carried forward were renumbered.

5

Noise Compatibility Program Measures

APA

Facility Measures

- 1: Add High-Speed Taxiways to Runway 17R/35L

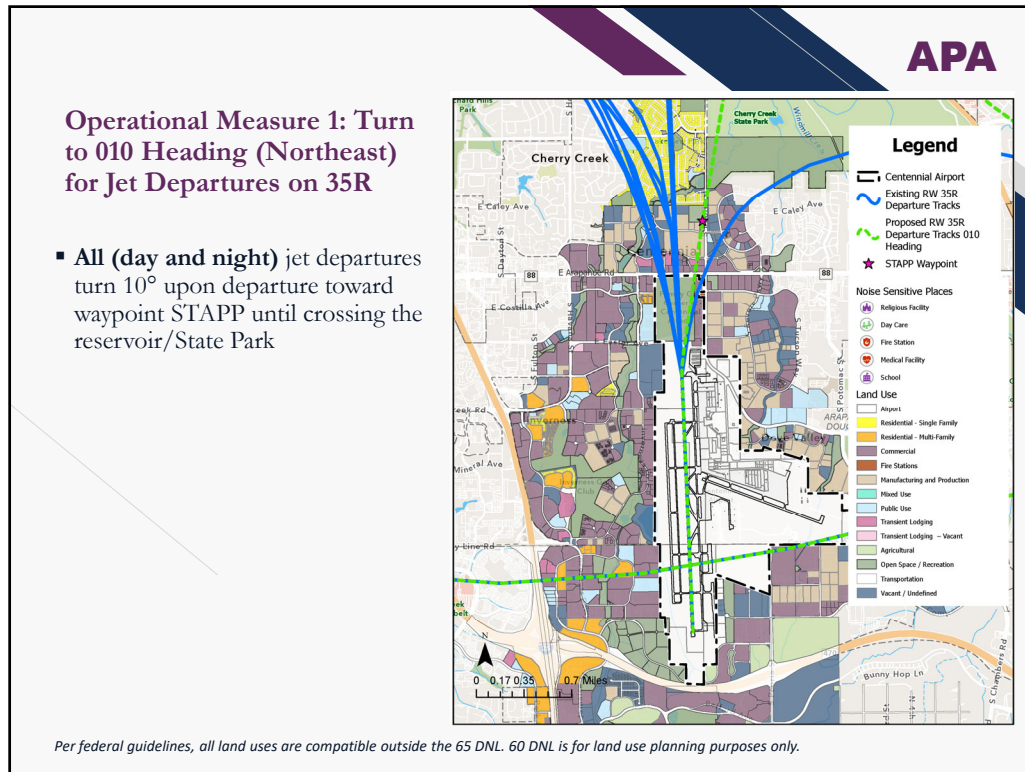
Land Use Measures

- 1: Airport Influence Area (AIA)
- 2: Instrument Landing System (ILS) Flight Corridor Noise Notification Program

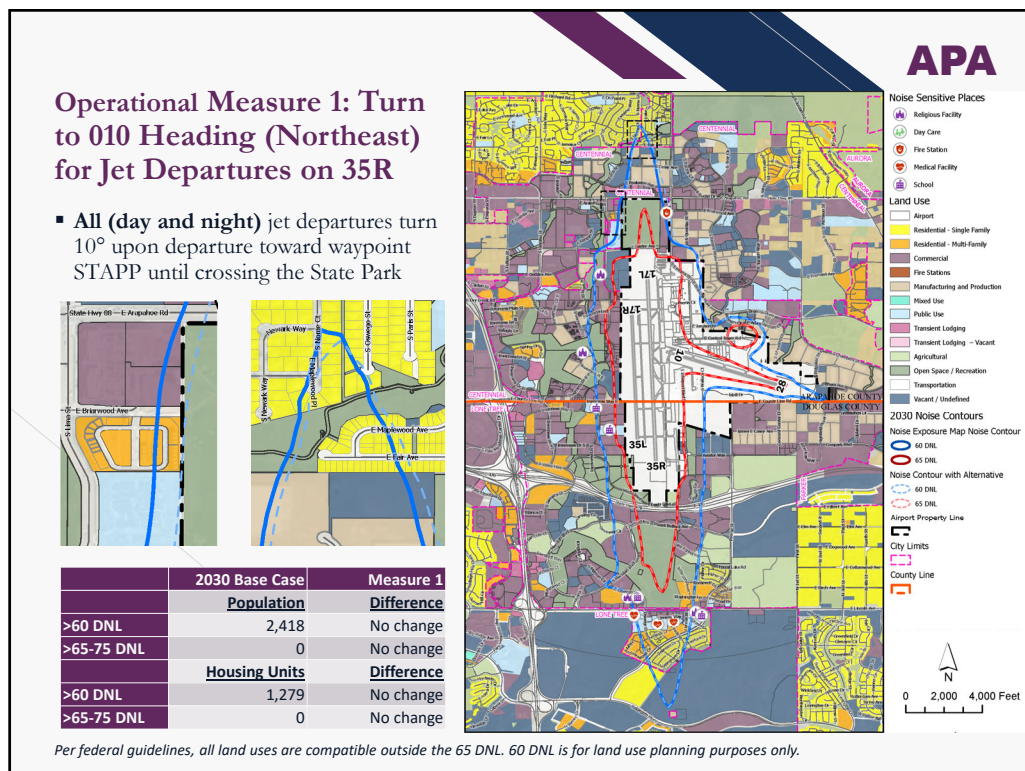
Administrative Measures

- 1: Fly Quiet/Incentive Dashboard
- 2: Airspace Redesign
- 3: Noise Monitoring Program
- 4: Update/Incorporate Noise Sensitive Areas into Electronic Flight Bags and ATCT Monitors
- 5: Continuation of the Centennial Airport Community Noise Roundtable
- 6: FAA Study Group
- 7: Update Noise Exposure Maps/Update NCP

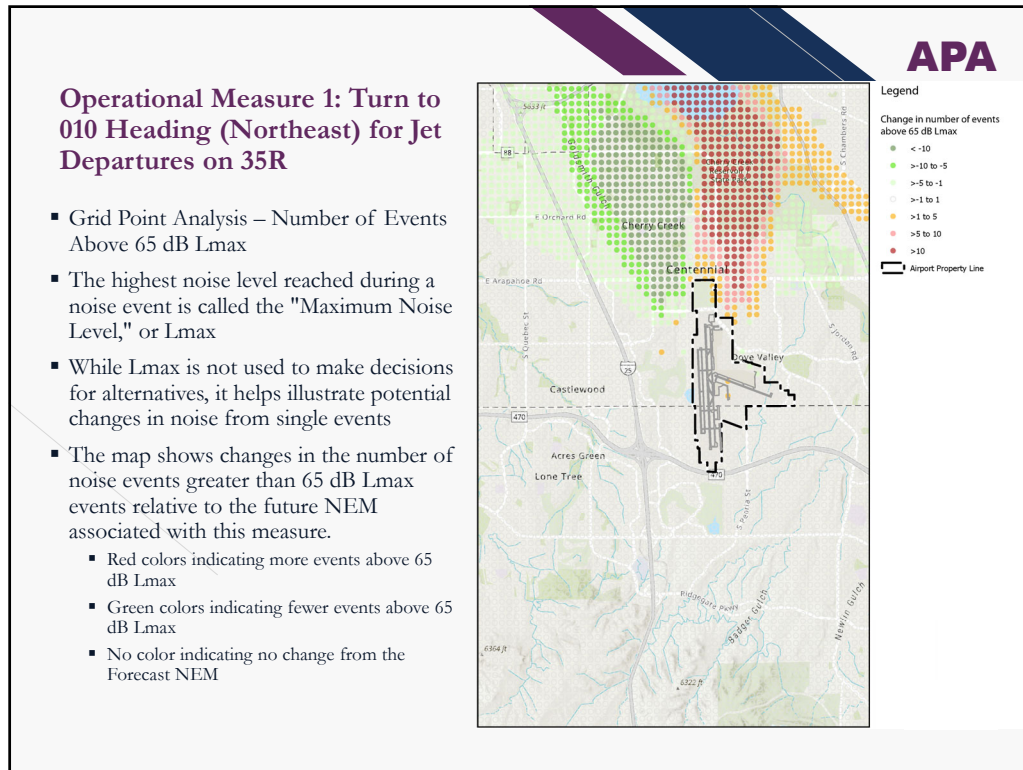
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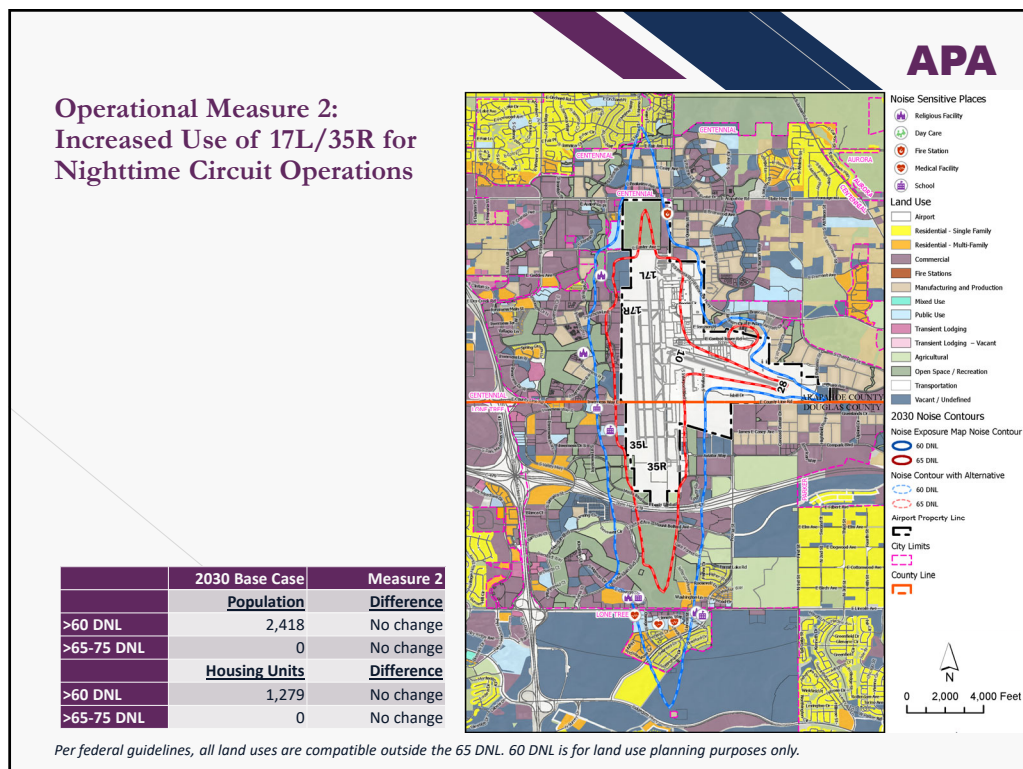
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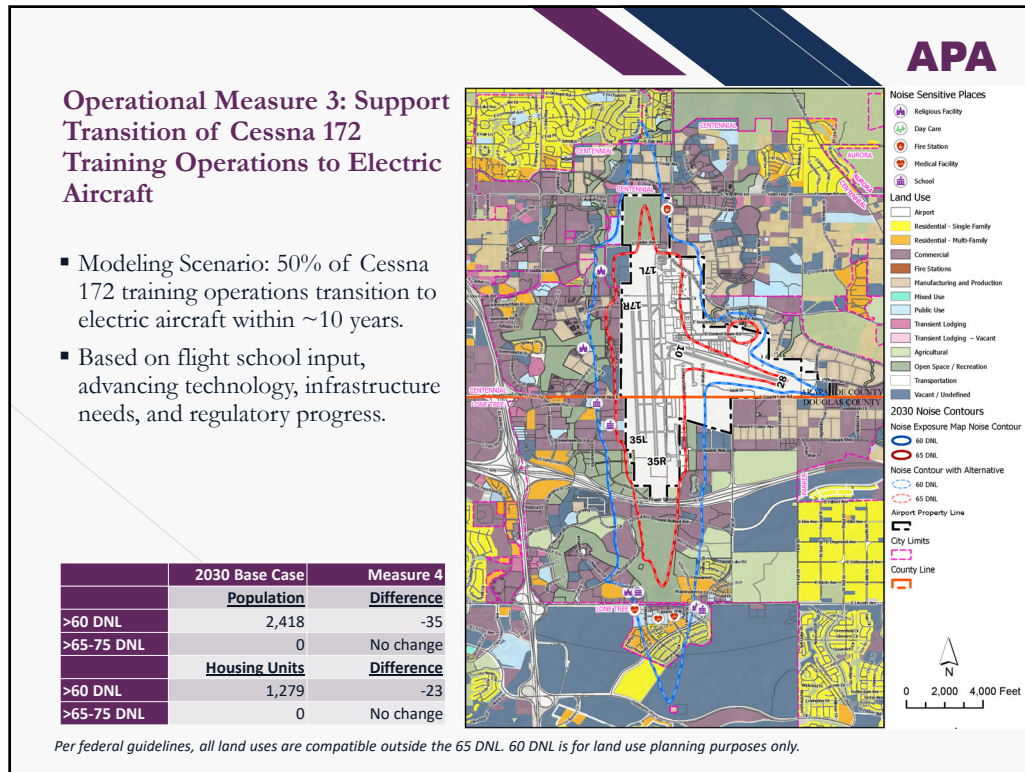
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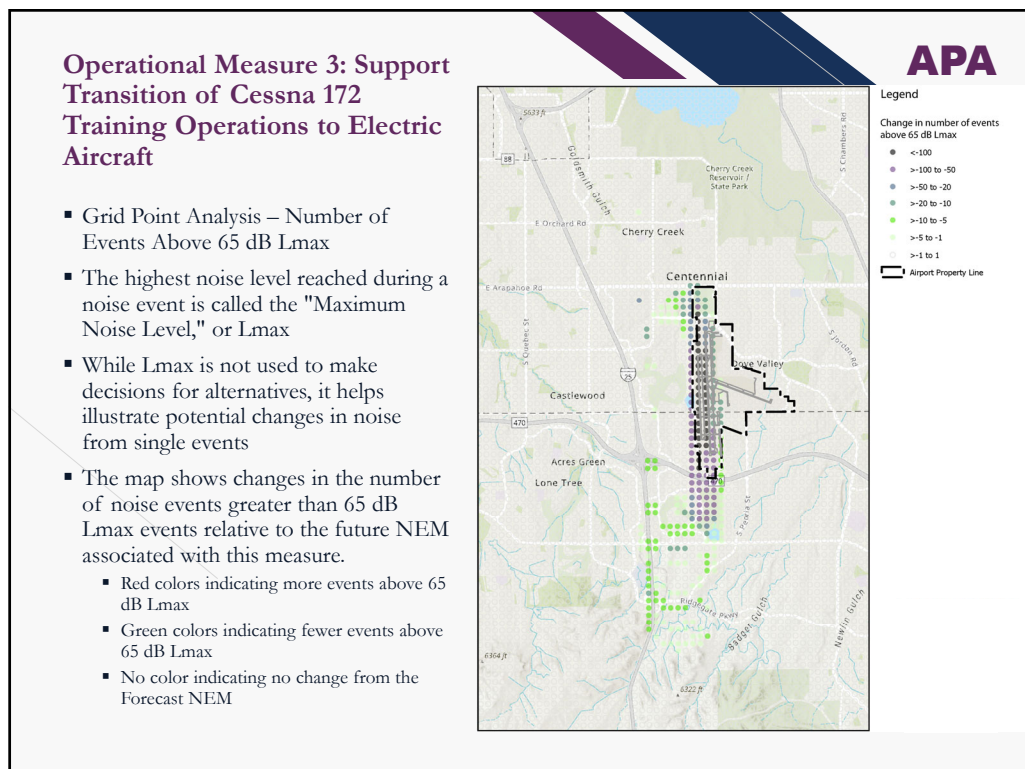
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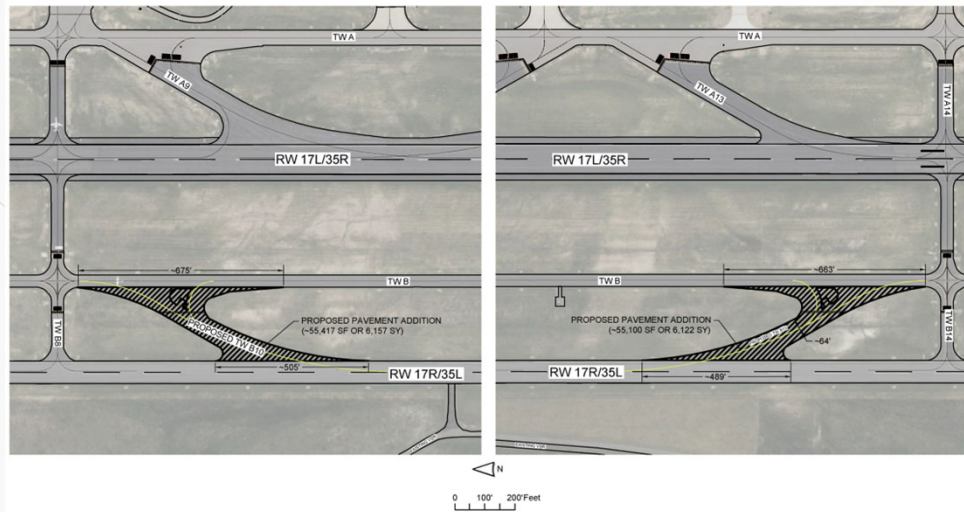


12

APA

Facility Management Measure 1:

Add High-Speed Taxiways to Runway 17R/35L



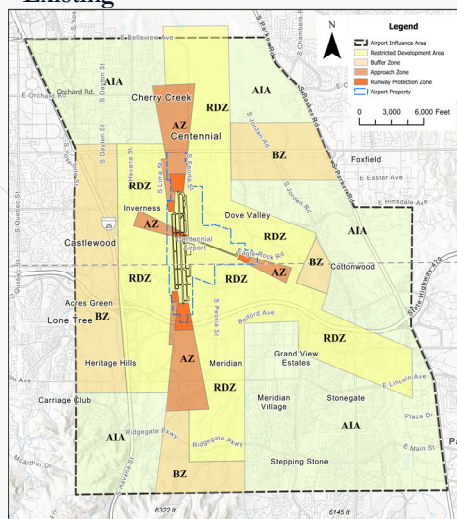
13

APA

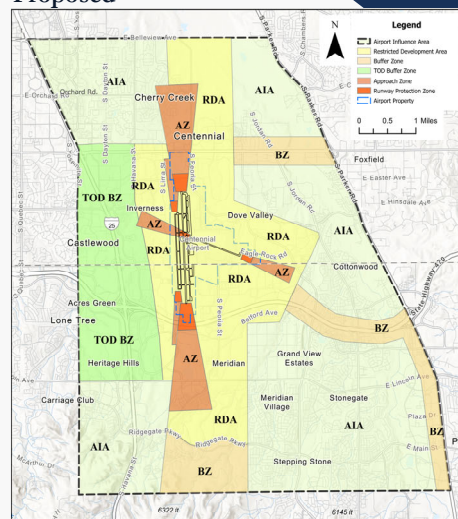
Land Use Planning/Control Recommendation 1:

Update Airport Influence Area Overlay

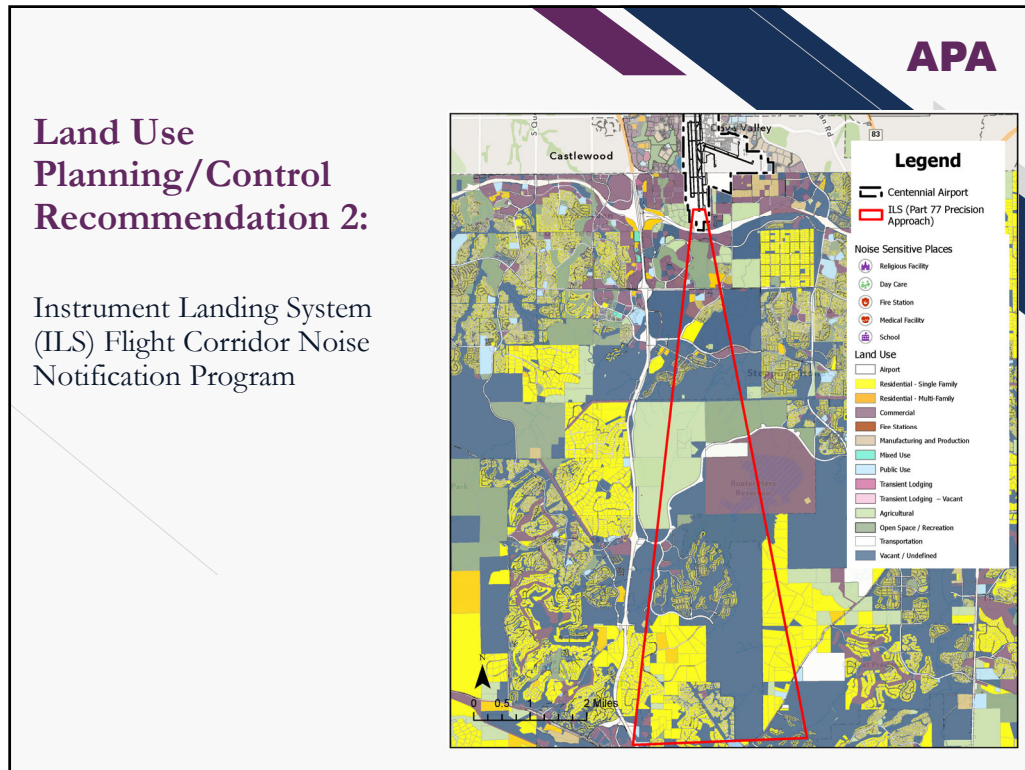
Existing



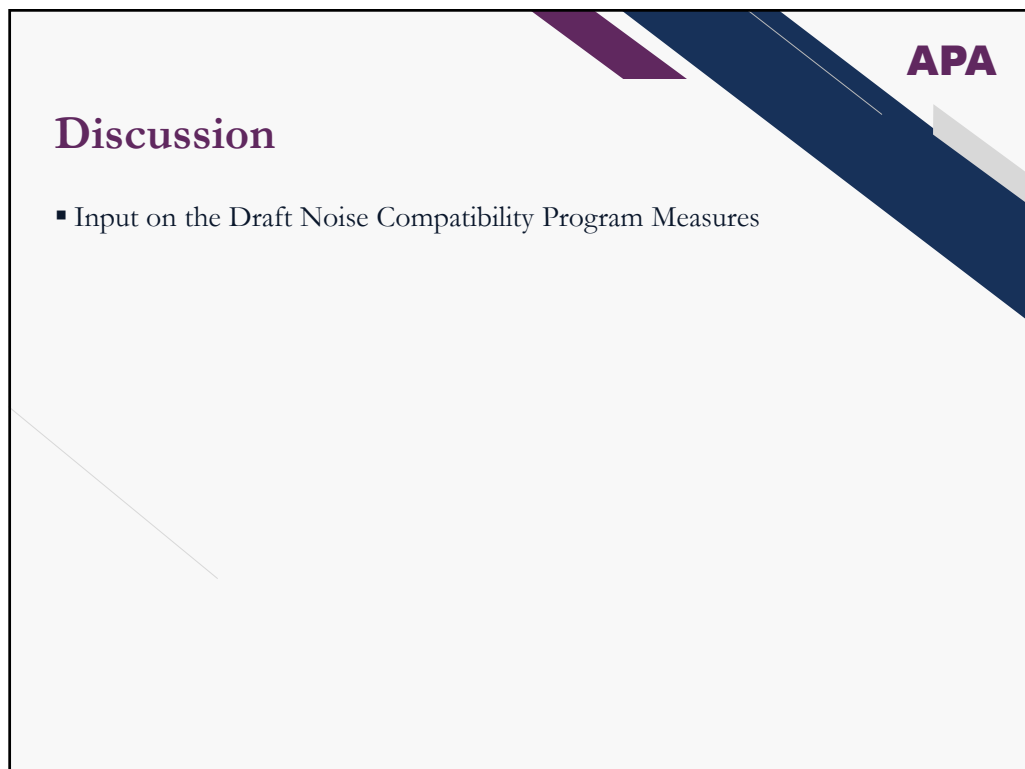
Proposed



14



15



16

Next Steps

- Committee & Stakeholder Input on Draft Measures
- Complete Draft NCP
- Public Hearing Fall 2026
- Submit NCP for FAA Approval/Disapproval of Measures
- Finalize NCP



CENTENNIAL
AIRPORT®

CENTENNIAL AIRPORT
MAY 2026
NOISE REPORT



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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.

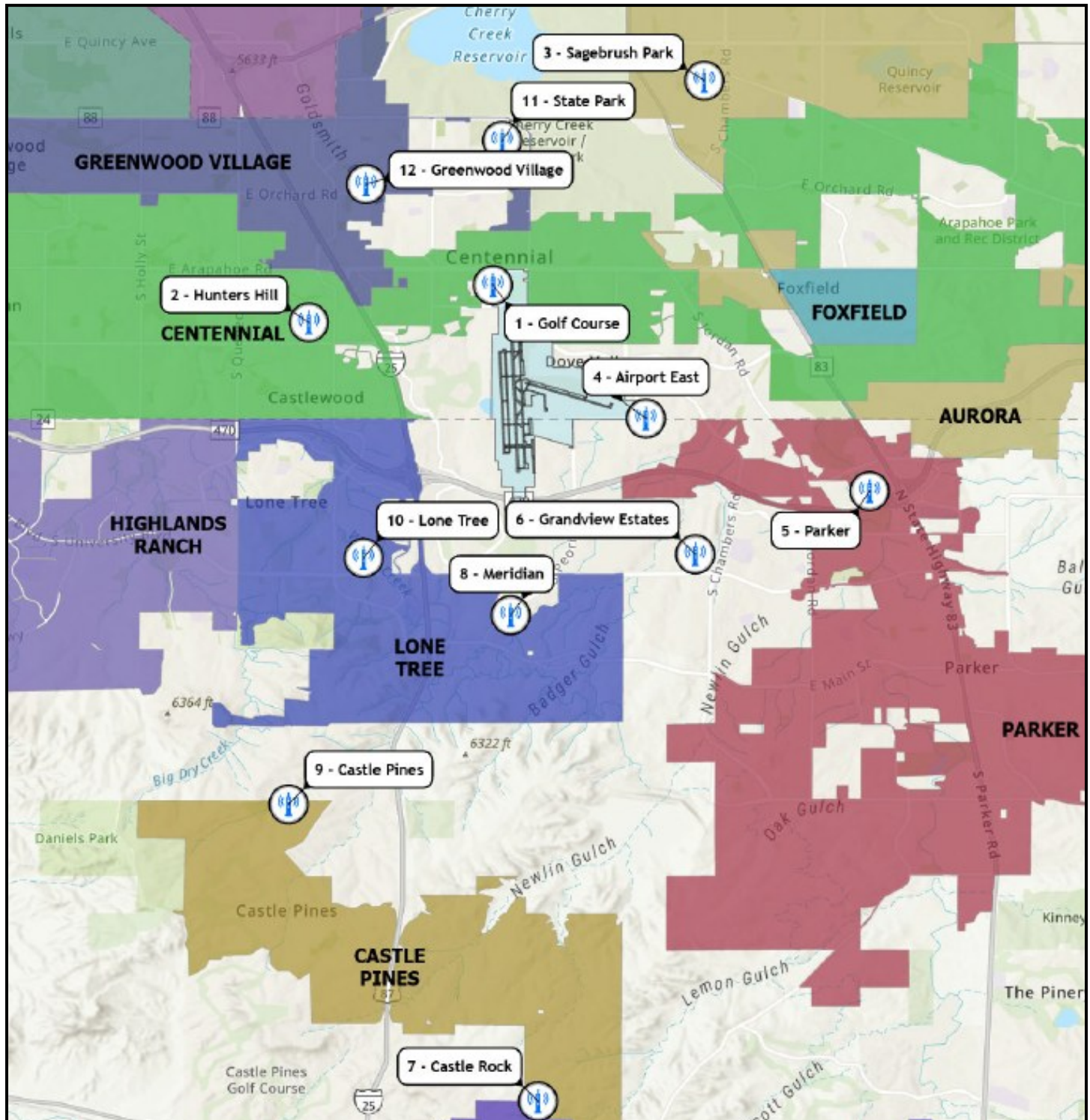
Overflight – Aircraft flight originating and terminating outside the area that transits the airspace without landing.

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.

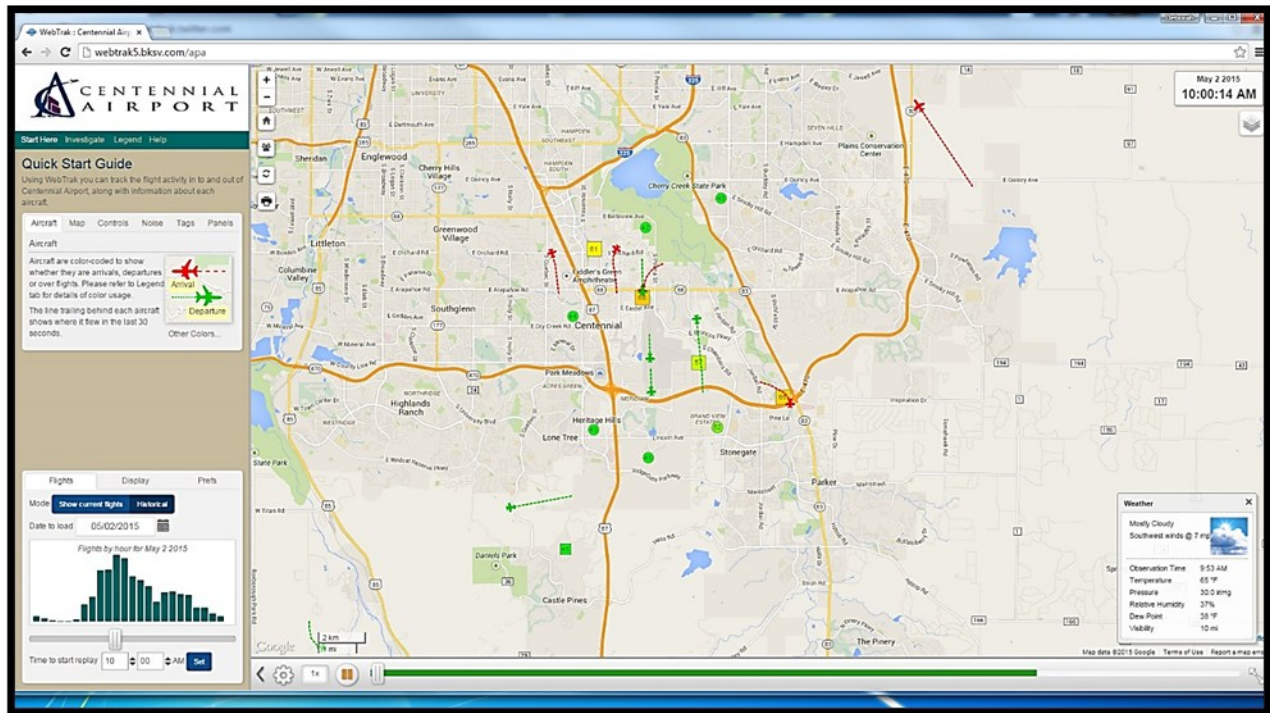
3. ABOUT APA's NOISE MONITORING PROGRAM

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://noise.centennialairport.com/>

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	2,880	2,644	82	5,606	1,713	5,480	44	7,237	12,900	6	12,906
February	2,551	2,367	128	5,046	1,722	5,780	28	7,530	12,353	0	12,353
March	2,787	2,619	106	5,512	1,621	5,491	51	7,163	11,306	0	11,306
April	2,689	2,351	176	5,216	1,454	5,210	47	6,711	11,757	0	11,757
May	2,892	2,632	164	5,688	1,749	6,245	73	8,067	14,095	0	14,095
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	13,799	12,613	656	27,068	8,259	28,206	243	36,708	62,411	6	62,417

	IFR OVERFLIGHTS				VFR OVERFLIGHTS				TOTAL OPERATIONS
	AIR TAXI	G.A.	MILITARY	TOTAL INTINERANT	AIR TAXI	G.A.	MILITARY	TOTAL	
January	3	0	1	4	49	58	6	113	25,866
February	2	0	6	8	57	86	2	145	25,082
March	6	5	1	12	66	214	2	282	24,275
April	1	6	2	9	38	80	3	121	23,814
May	5	11	0	16	25	61	5	91	27,957
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	17	22	10	49	235	499	18	752	126,994

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.

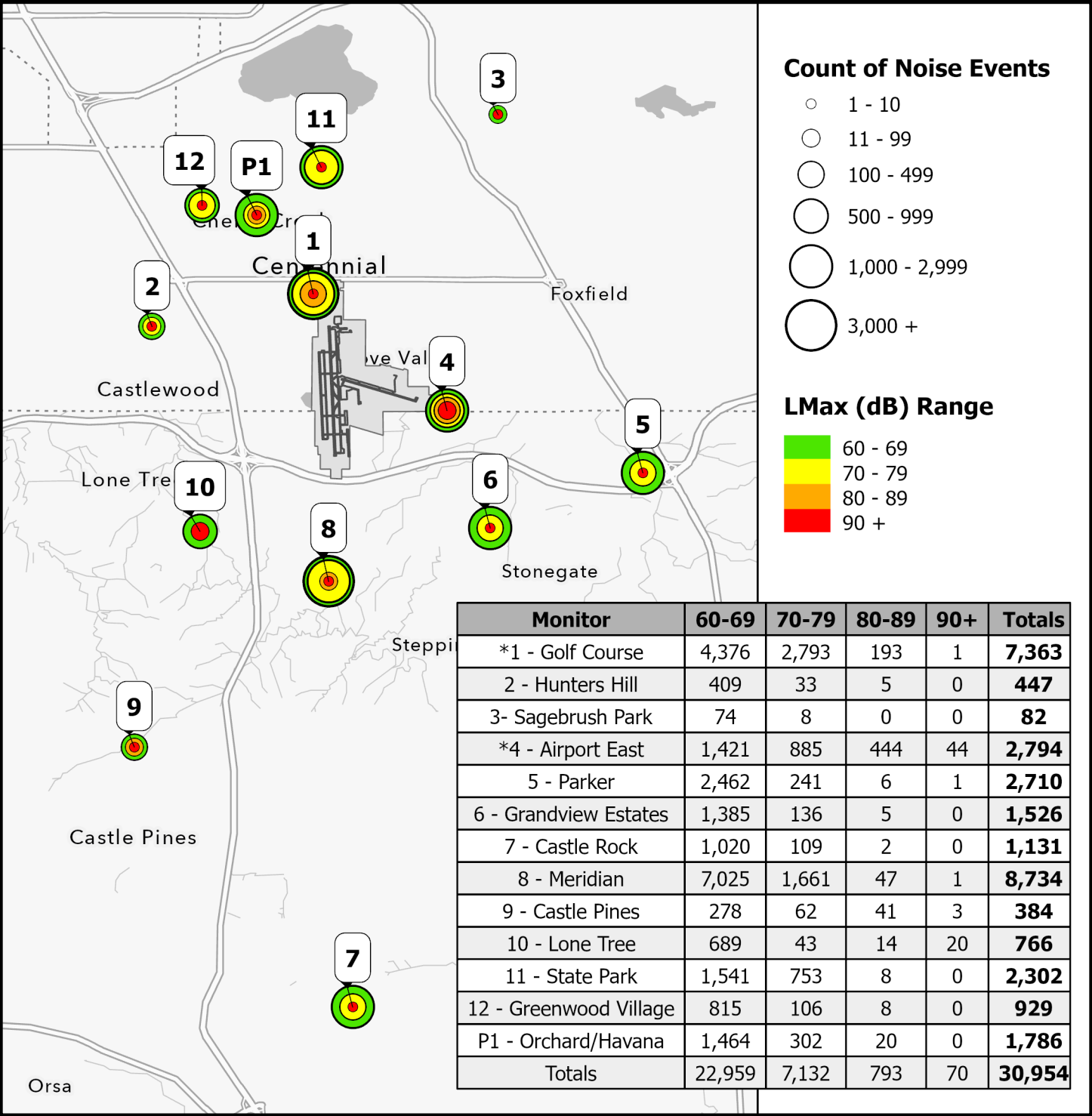
VFR Itinerant – Operations other than local operations conducted under Visual Flight Rules.

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

6. MAY 2026 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.

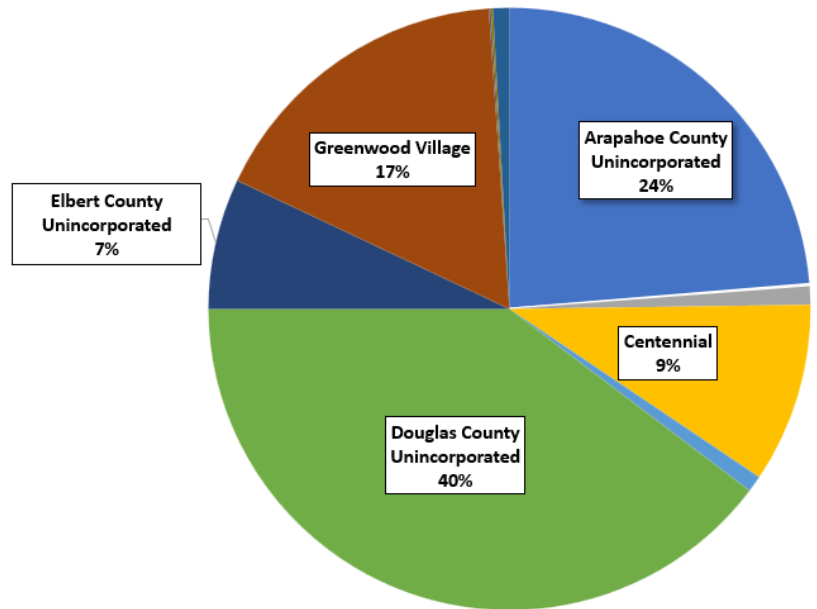


*NMT located on airport.

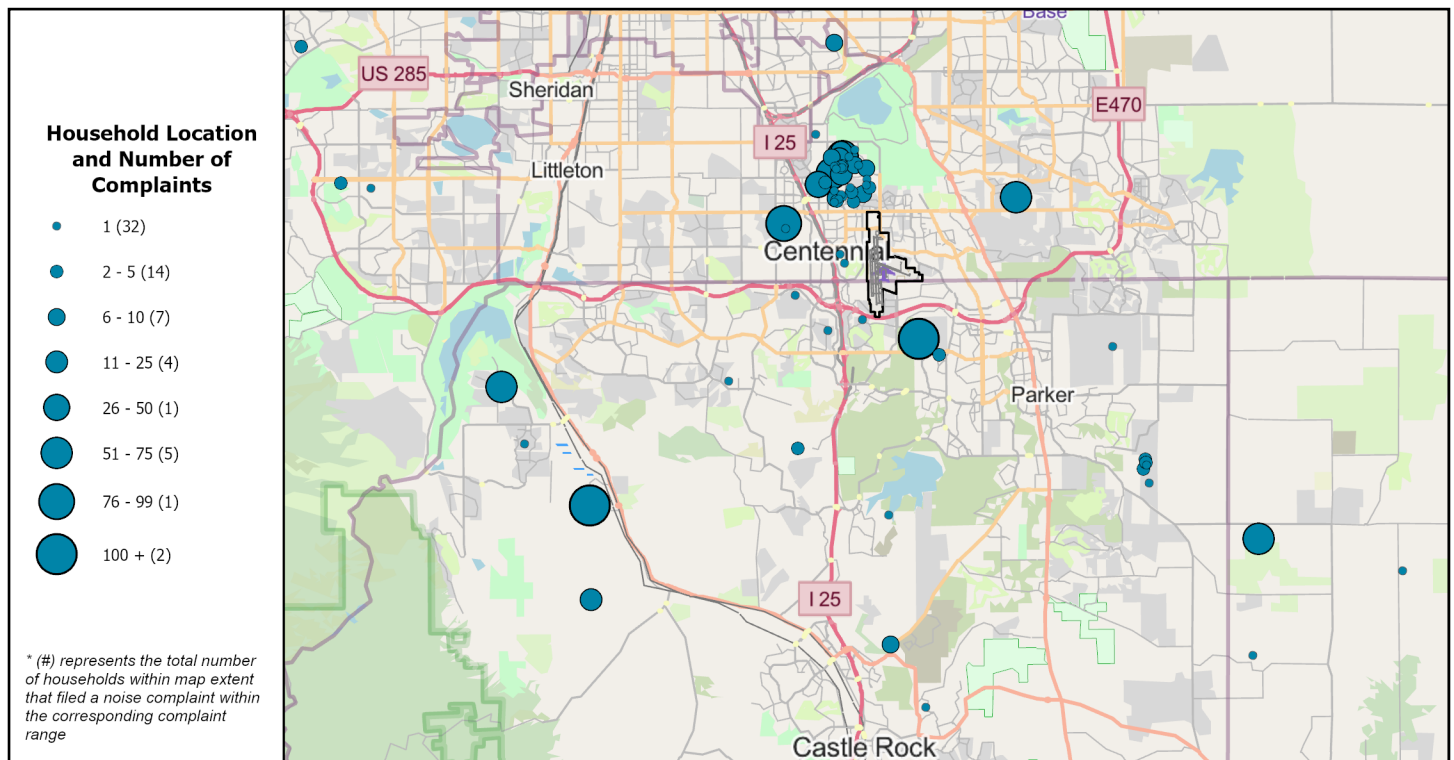
7. MAY 2026 NOISE COMPLAINT STATISTICS

Municipality	Complaints	Households	Population
Arapahoe County Unincorporated	216	25	98,066
Aurora	0	0	399,913
Castle Pines	1	1	14,000
Castle Rock	9	2	86,000
Centennial	88	2	108,422
Cherry Hills Village	0	0	6,442
Denver	8	1	715,522
Douglas County Unincorporated	362	17	276,493*
Elbert County Unincorporated	64	4	29,382
Greenwood Village	154	12	15,691
Highlands Ranch	1	1	103,444
Lone Tree	1	1	14,253
Parker	0	0	68,000
Other	8	5	-
Total	912	71	1,936,078

Complaints per Municipality

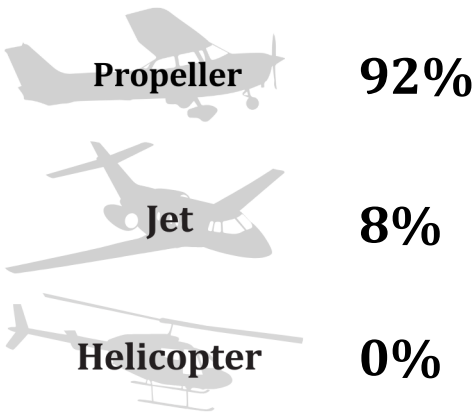


*Douglas County Unincorporated Population with Highlands Ranch Removed



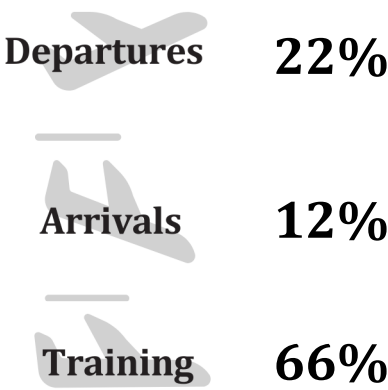
7. MAY 2026 NOISE COMPLAINT STATISTICS

Complaint by Aircraft Type



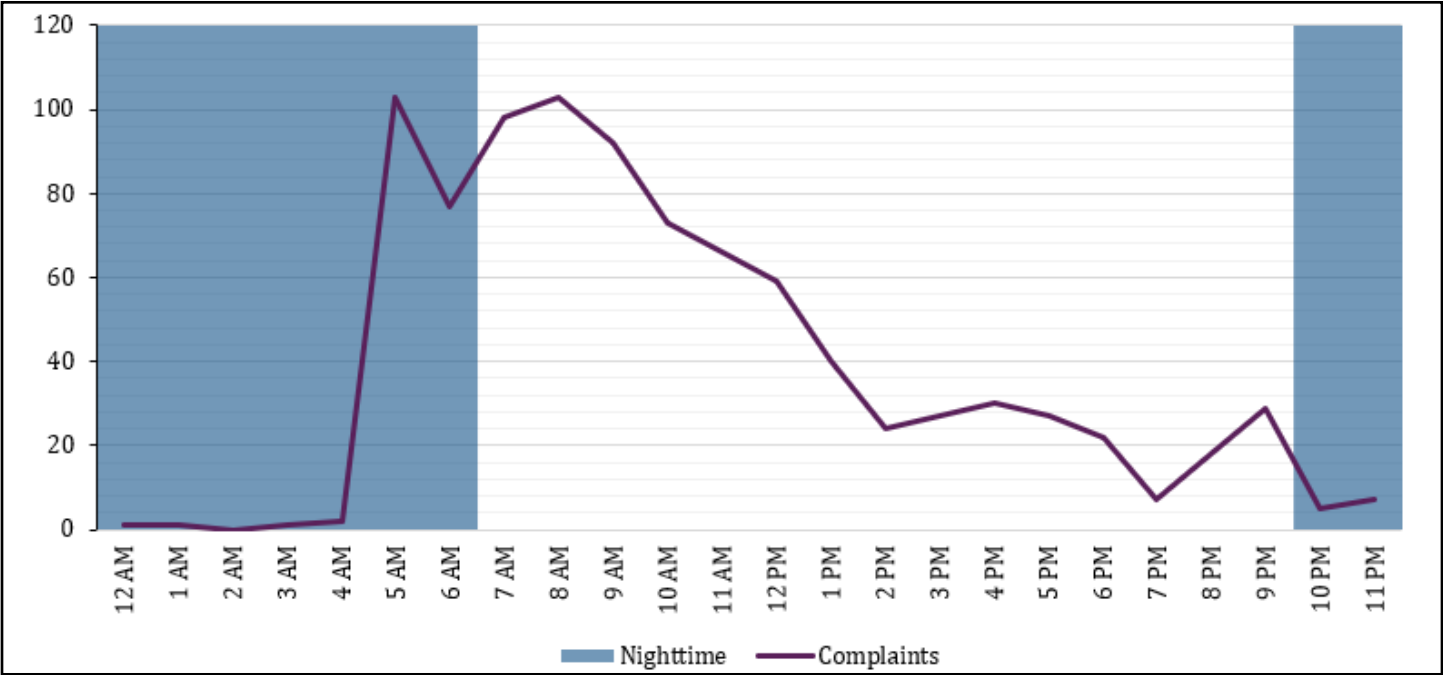
*#1 Household Removed

Complaint by Operation Type



*#1 Household Removed

Complaints by Hour



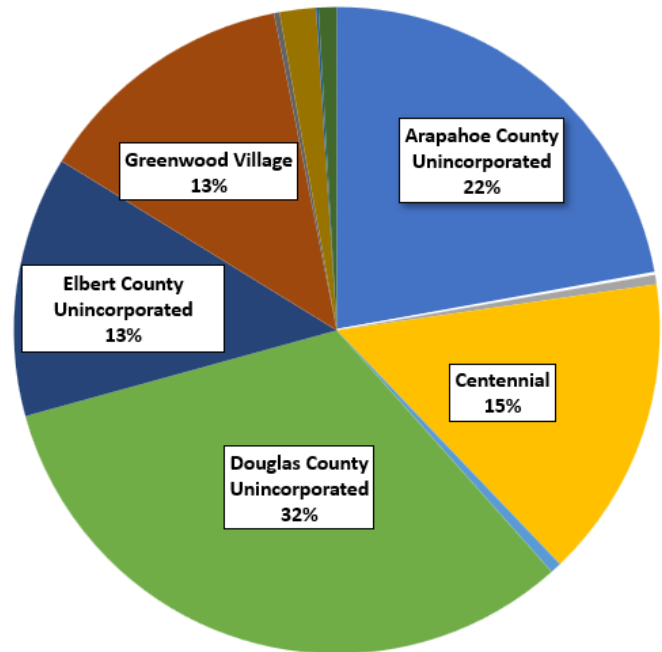
Noise Complaint Responses Completed	
Email	92
Phone	8
Total	100

Time Complaint Received	
Day (7:00 AM—9:59 PM)	715
Night (10:00 PM—6:59 AM)	197
Total	912

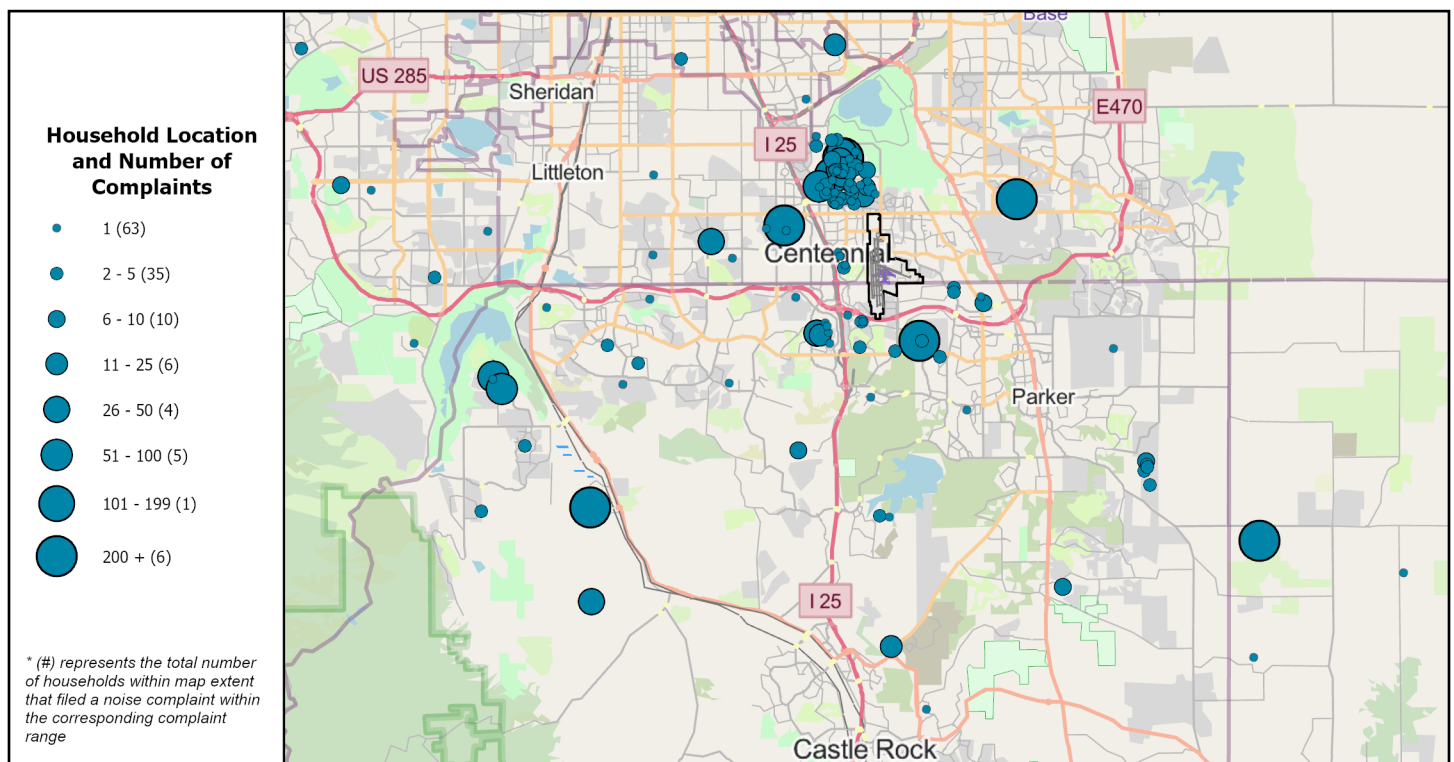
8. YEAR-TO-DATE 2026 NOISE COMPLAINT STATISTICS

Municipality	Complaints	Households	Population
Arapahoe County Unincorporated	710	38	98,066
Aurora	0	0	399,913
Castle Pines	3	2	14,000
Castle Rock	15	2	86,000
Centennial	485	6	108,422
Cherry Hills Village	0	0	6,442
Denver	18	2	715,522
Douglas County Unincorporated	1,035	28	276,493*
Elbert County Unincorporated	418	5	29,382
Greenwood Village	420	28	15,691
Highlands Ranch	9	6	103,444
Lone Tree	58	7	14,253
Parker	4	3	68,000
Other	29	10	-
Total	3,204	137	1,936,078

Complaints per Municipality

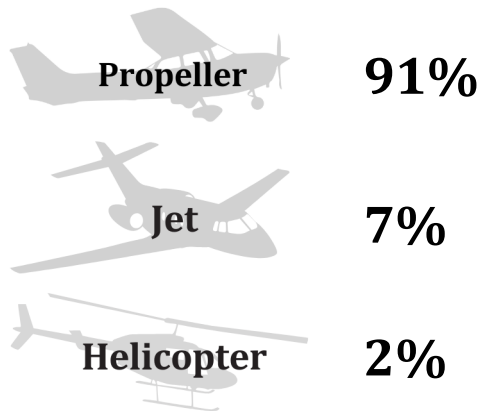


*Douglas County Unincorporated Population with Highlands Ranch Removed



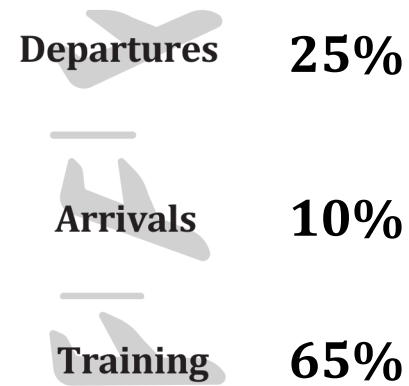
8. YEAR-TO-DATE 2026 NOISE COMPLAINT STATISTICS

Complaint by Aircraft Type



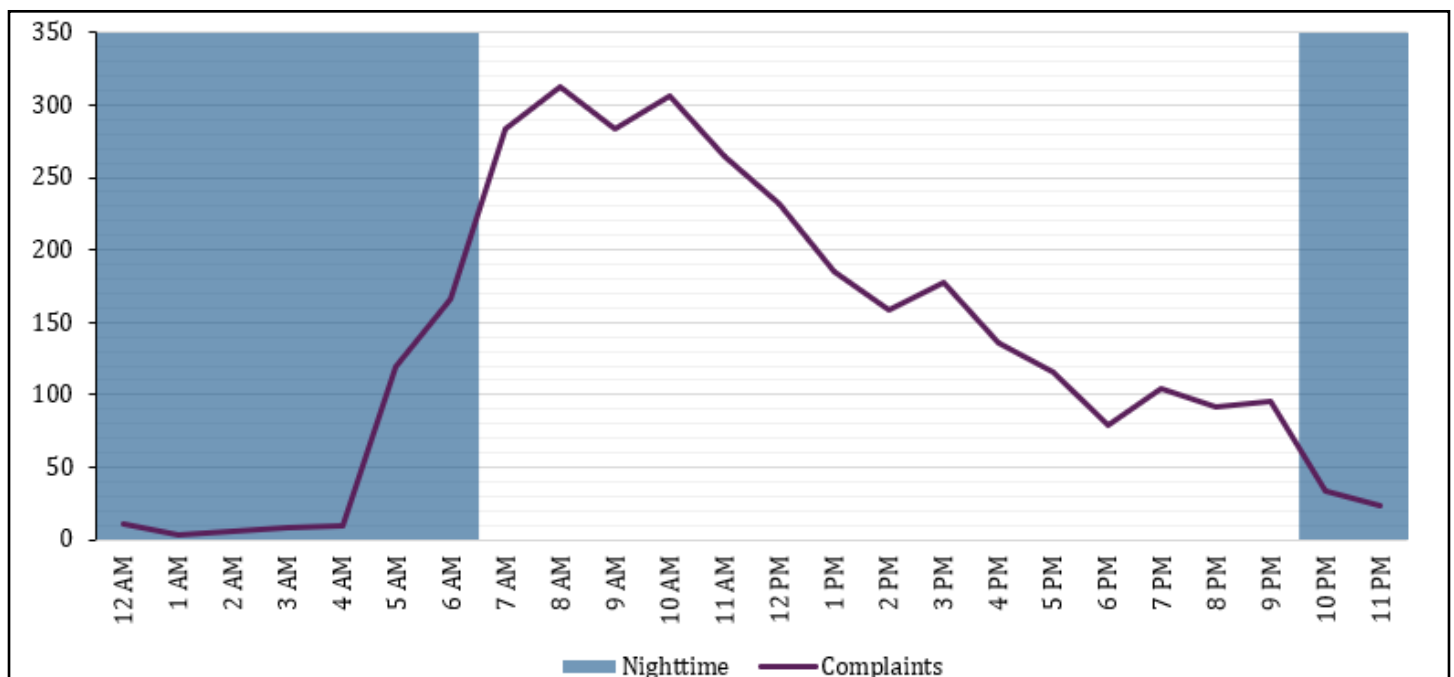
*#1 Household Removed

Complaint by Operation Type



*#1 Household Removed

Complaints by Hour

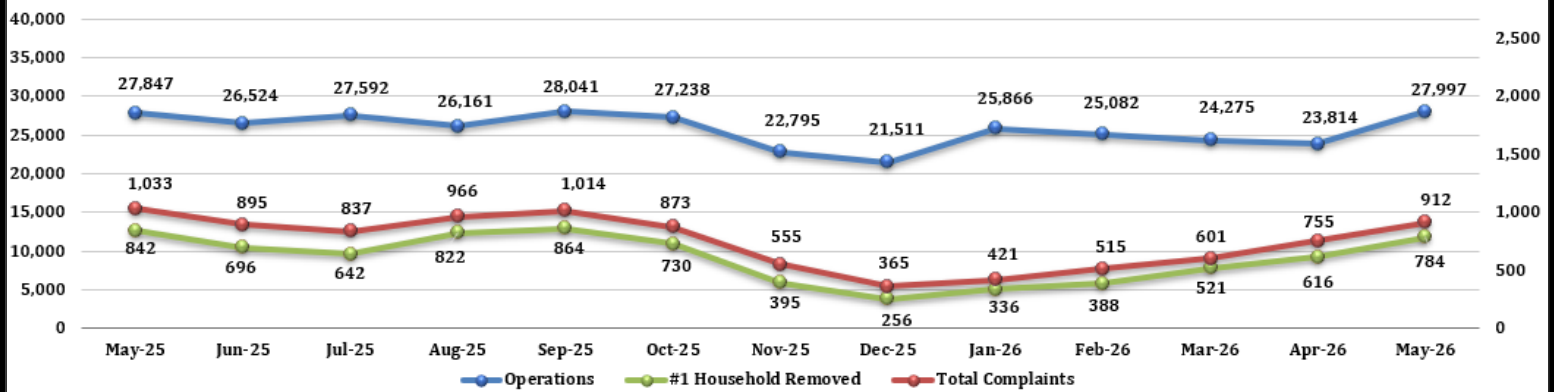


Noise Complaint Responses Completed	
Email	358
Phone	27
Total	385

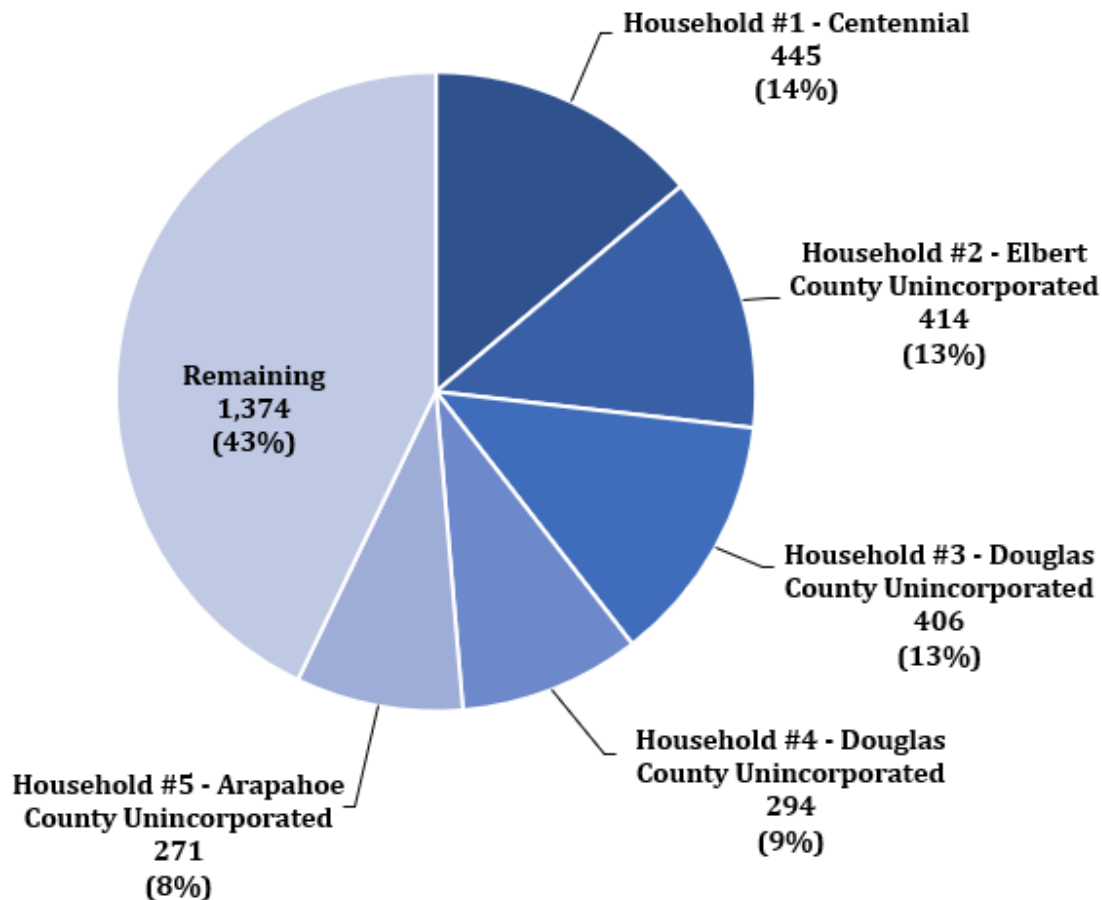
Time Complaint Received	
Day (7:00 AM—9:59 PM)	2,823
Night (10:00 PM—6:59 AM)	381
Total	3,204

8. YEAR-TO-DATE 2026 NOISE COMPLAINT STATISTICS

13-Month Trend



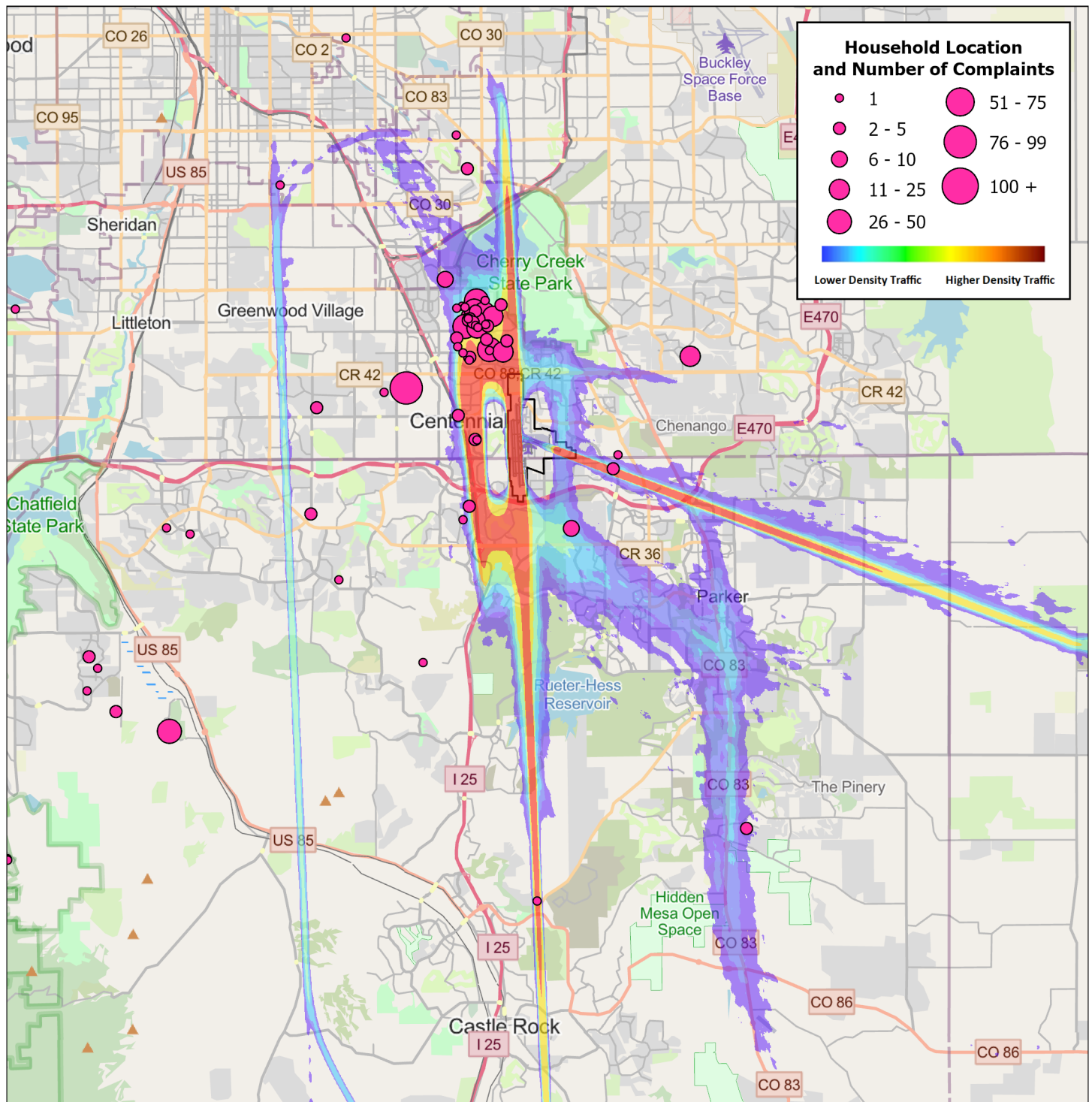
Top 5 Household Complaints YTD



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 overlaid with the monthly noise complaint dot map. This enables a better understanding of where the flight tracks are at in relation to noise complaints, 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.

MAY 2026



10. NOTES AND DISCLAIMER

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

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



Noise Hotline: 303-790-4709

www.noise.centennialairport.com



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CENTENNIAL AIRPORT
JUNE 2026
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.

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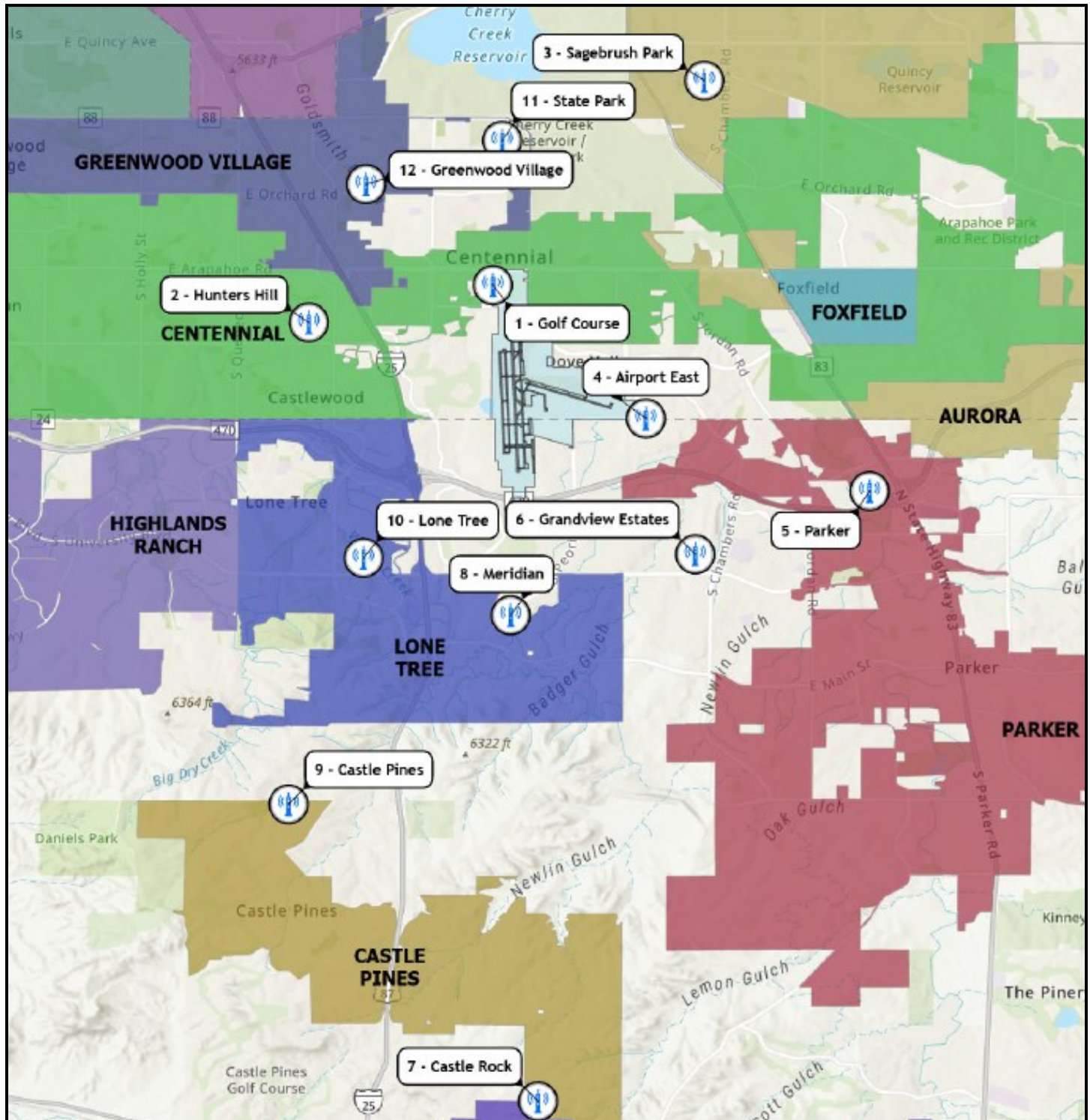
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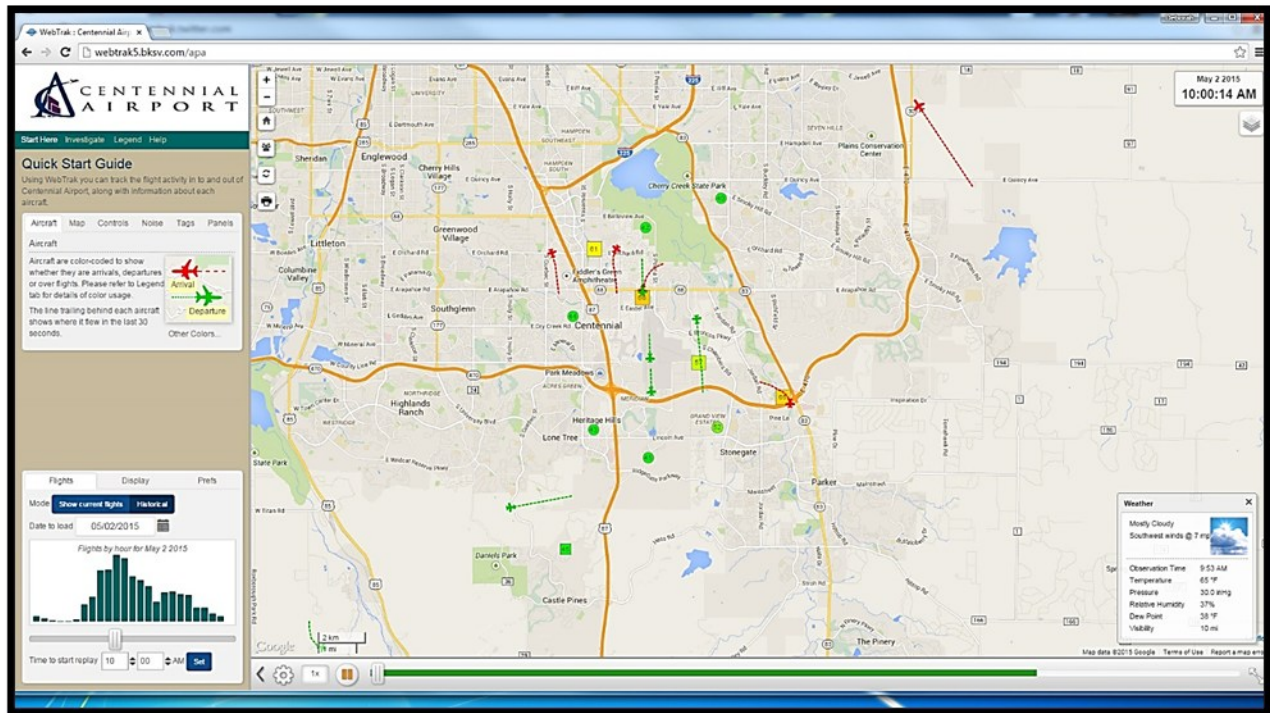
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	AIR TAXI	G.A.	MILITARY	TOTAL ITINERANT	AIR TAXI	G.A.	MILITARY	TOTAL	G.A.	MILITARY	TOTAL LOCAL
January	2,880	2,644	82	5,606	1,713	5,480	44	7,237	12,900	6	12,906
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April	2,689	2,351	176	5,216	1,454	5,210	47	6,711	11,757	0	11,757
May	2,892	2,632	164	5,688	1,749	6,245	73	8,067	14,095	0	14,095
June	2,916	2,873	203	5,992	1,591	6,667	88	8,346	13,877	0	13,877
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	16,715	15,486	859	33,060	9,850	34,873	331	45,054	76,288	6	76,294

	IFR OVERFLIGHTS				VFR OVERFLIGHTS				TOTAL OPERATIONS
	AIR TAXI	G.A.	MILITARY	TOTAL INTINERANT	AIR TAXI	G.A.	MILITARY	TOTAL	
January	3	0	1	4	49	58	6	113	25,866
February	2	0	6	8	57	86	2	145	25,082
March	6	5	1	12	66	214	2	282	24,275
April	1	6	2	9	38	80	3	121	23,814
May	5	11	0	16	25	61	5	91	27,957
June	2	9	2	13	46	75	5	126	28,354
July				0				0	
August				0				0	
September				0				0	
October				0				0	
November				0				0	
December				0				0	
Y-T-D Totals	19	31	12	62	281	574	23	878	155,348

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.

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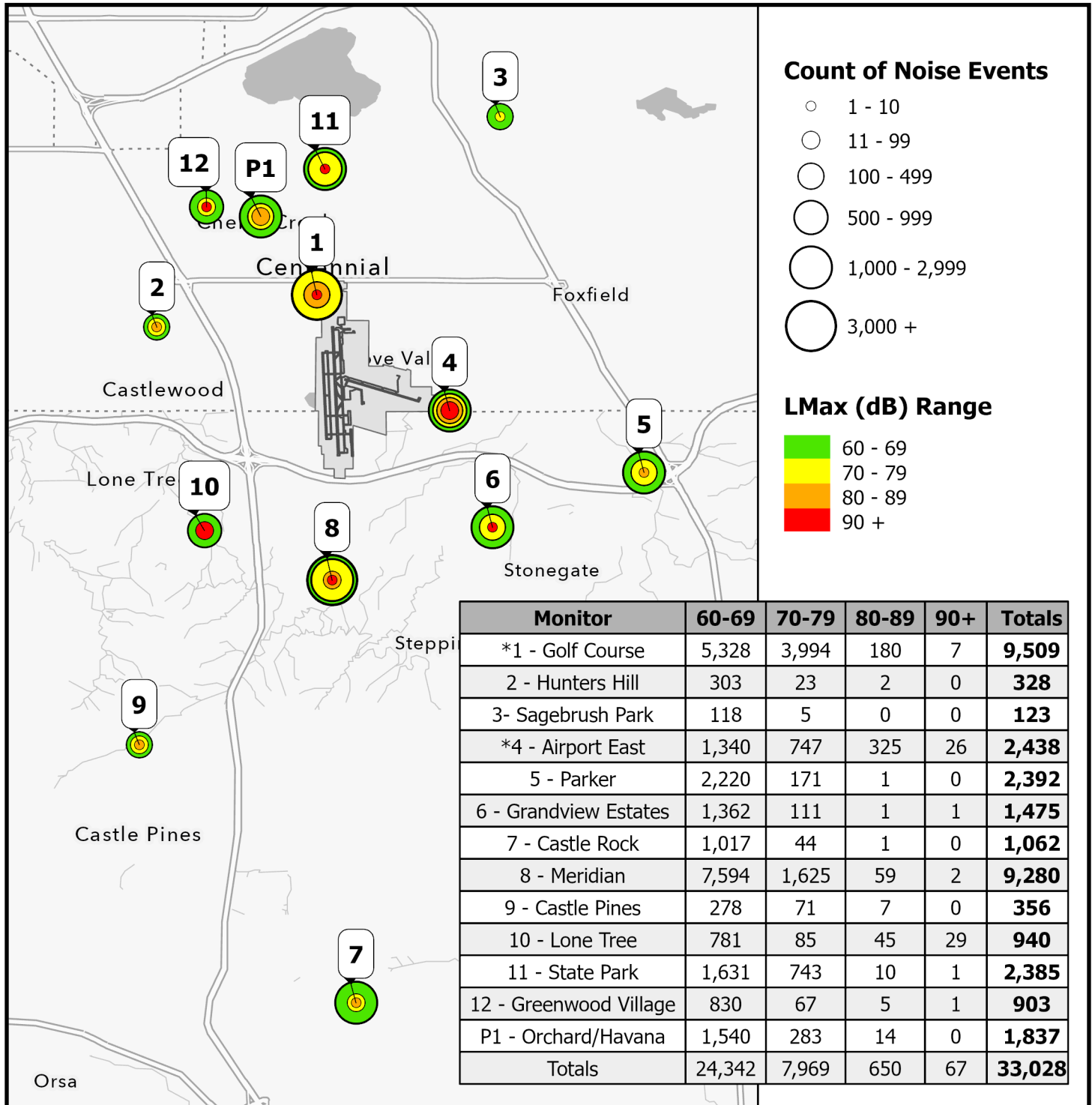
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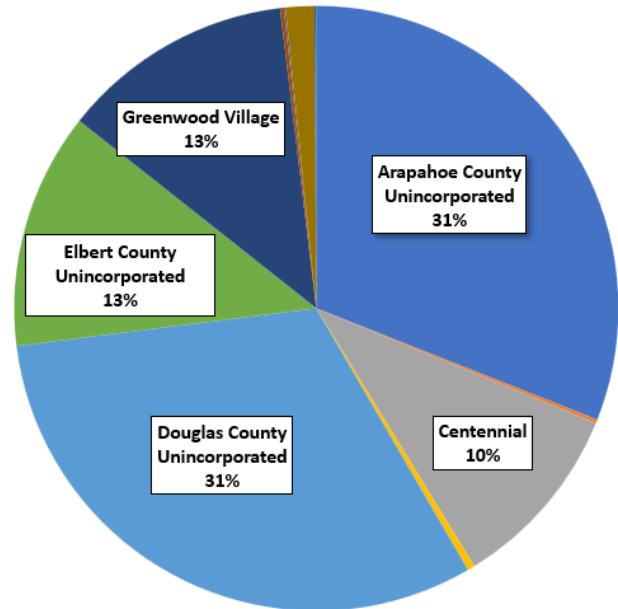
*NMT located on airport.

NMT Downtimes: No notable downtimes.

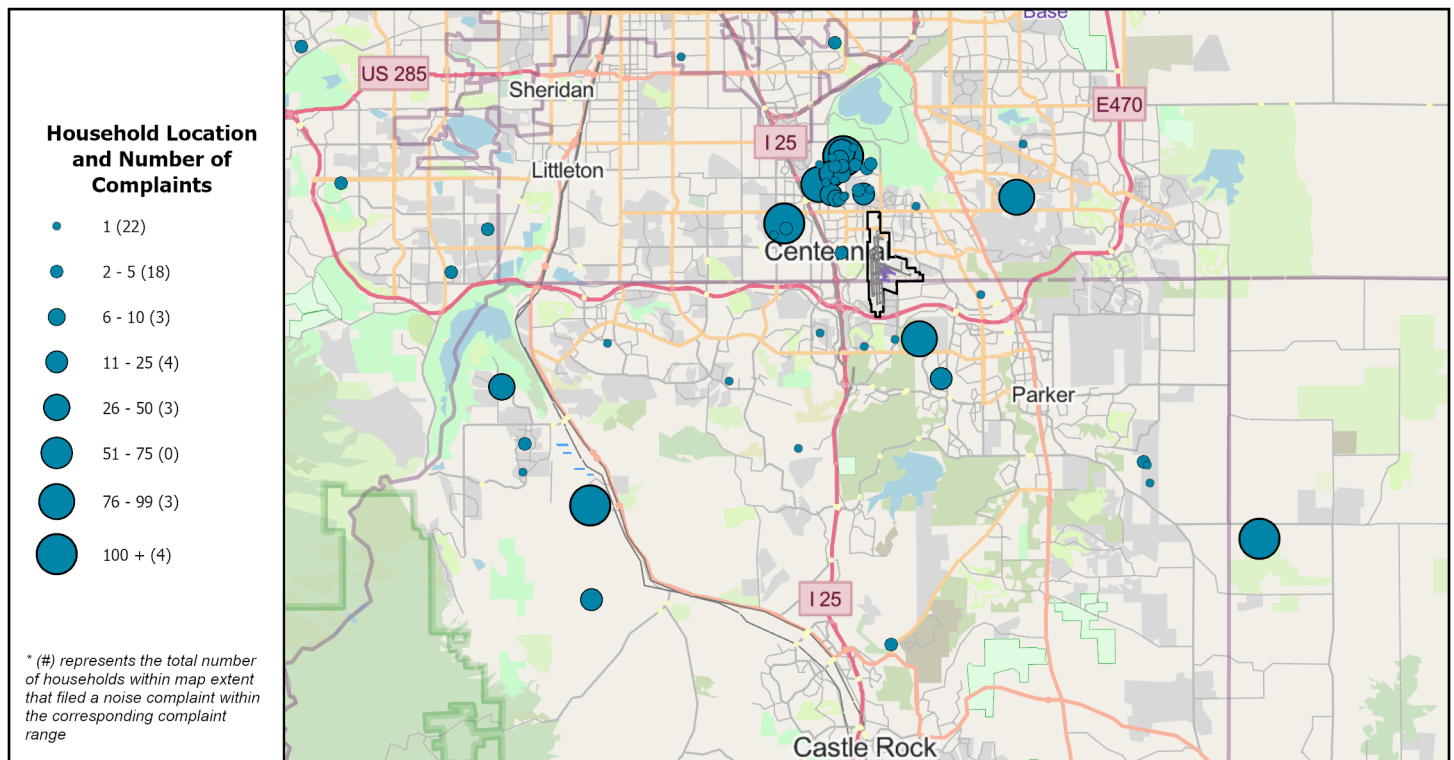
7. JUNE 2026 NOISE COMPLAINT STATISTICS

Municipality	Complaints	Households	Population
Arapahoe County Unincorporated	324	18	98,066
Aurora	0	0	399,913
Castle Pines	0	0	14,000
Castle Rock	2	1	86,000
Centennial	105	5	108,422
Cherry Hills Village	0	0	6,442
Denver	4	2	715,522
Douglas County Unincorporated	328	13	276,493*
Elbert County Unincorporated	132	1	29,382
Greenwood Village	130	9	15,691
Highlands Ranch	2	2	103,444
Lone Tree	1	1	14,253
Parker	1	1	68,000
Other	16	7	-
Total	1,045	60	1,936,078

Complaints per Municipality

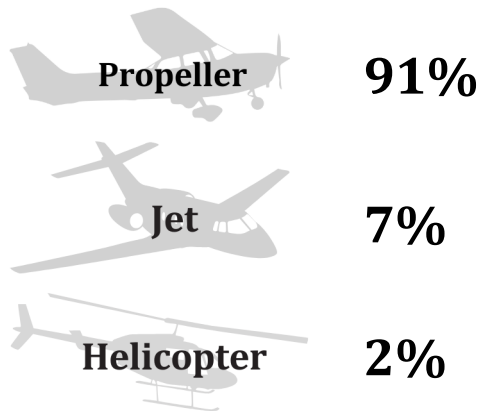


*Douglas County Unincorporated Population with Highlands Ranch Removed



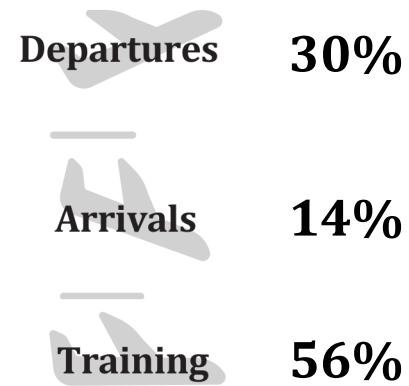
7. JUNE 2026 NOISE COMPLAINT STATISTICS

Complaint by Aircraft Type



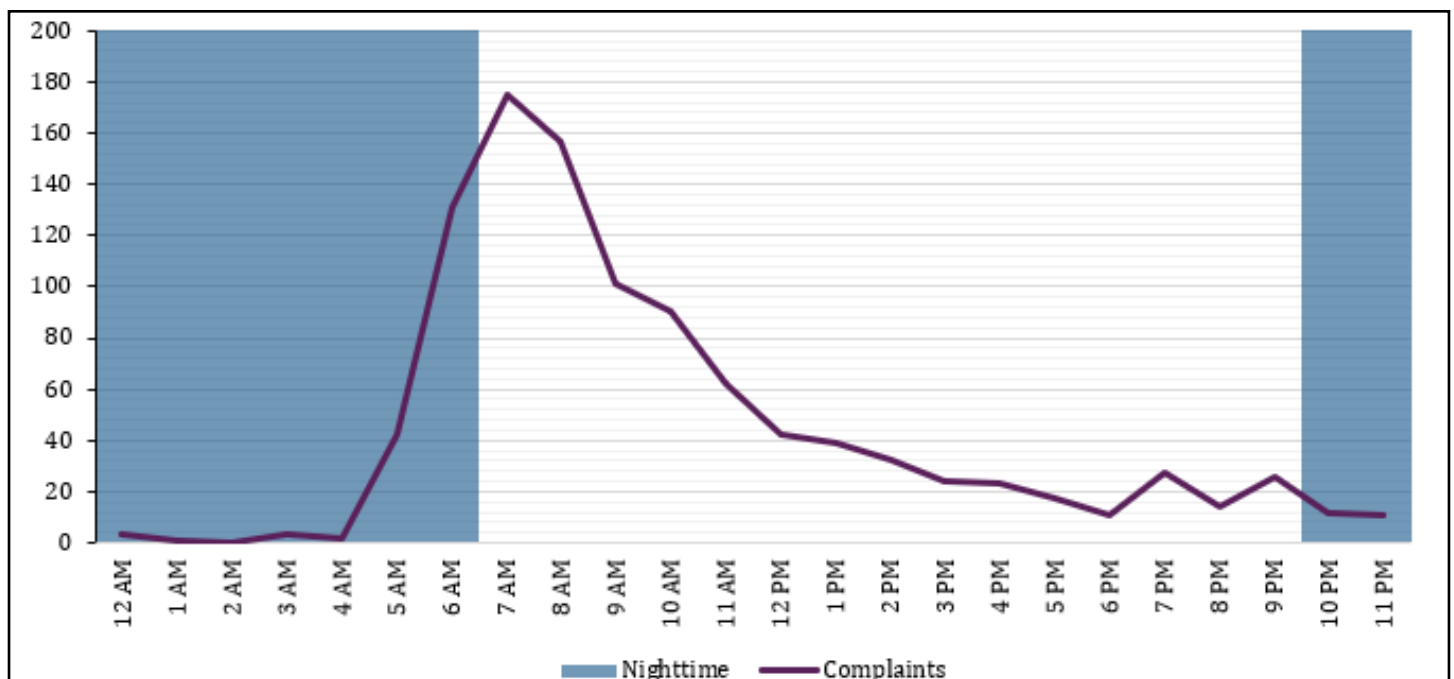
*#1 Household Removed

Complaint by Operation Type



*#1 Household Removed

Complaints by Hour



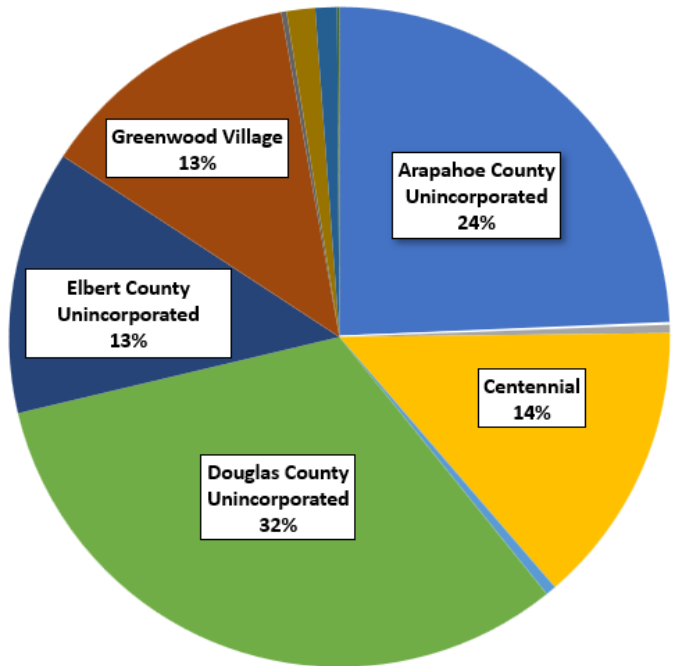
Noise Complaint Responses Completed	
Email	79
Phone	4
Total	83

Time Complaint Received	
Day (7:00 AM—9:59 PM)	840
Night (10:00 PM—6:59 AM)	205
Total	1,045

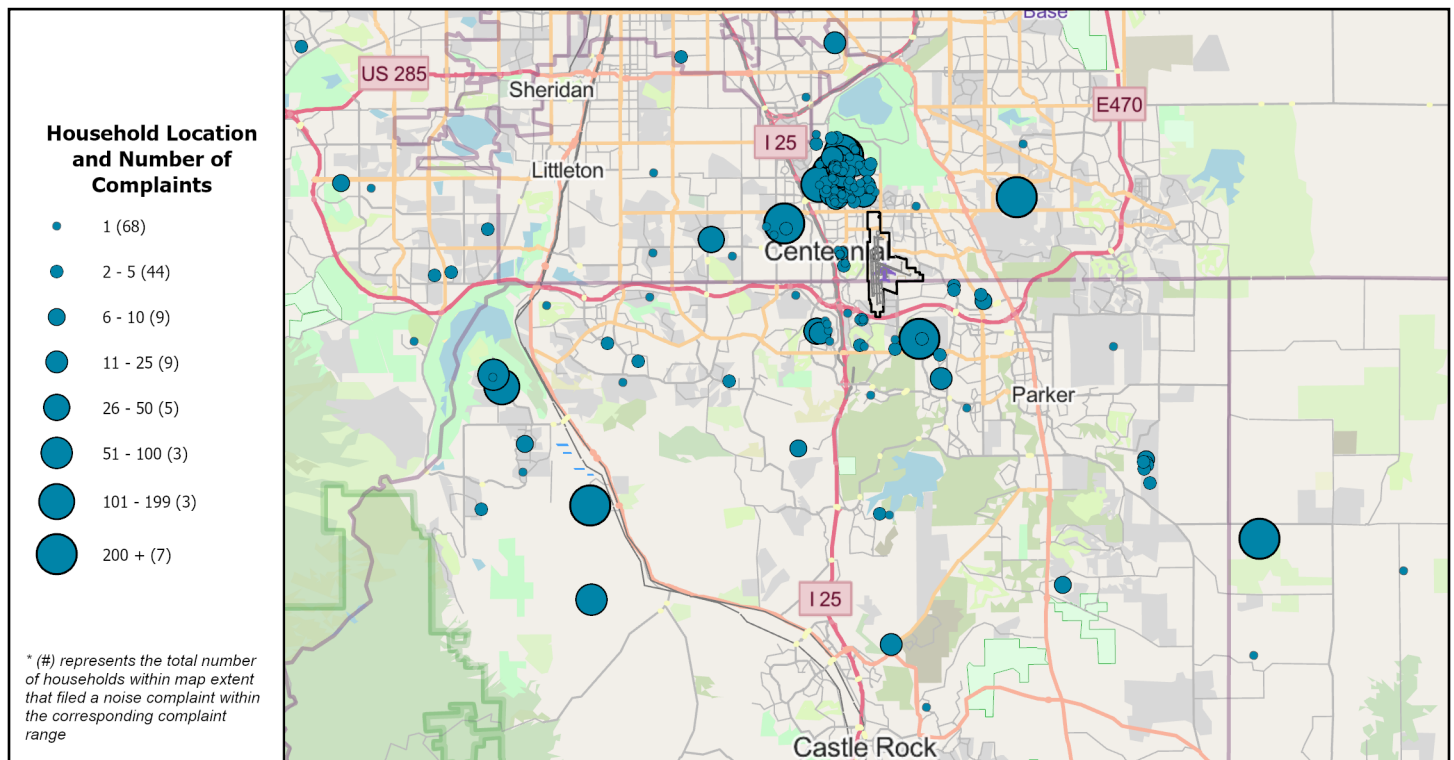
8. YEAR-TO-DATE 2026 NOISE COMPLAINT STATISTICS

Municipality	Complaints	Households	Population
Arapahoe County Unincorporated	1,034	46	98,066
Aurora	0	0	399,913
Castle Pines	3	2	14,000
Castle Rock	17	2	86,000
Centennial	590	9	108,422
Cherry Hills Village	0	0	6,442
Denver	22	2	715,522
Douglas County Unincorporated	1,363	32	276,493*
Elbert County Unincorporated	550	5	29,382
Greenwood Village	550	29	15,691
Highlands Ranch	11	6	103,444
Lone Tree	59	7	14,253
Parker	5	3	68,000
Other	45	13	-
Total	4,249	156	1,936,078

Complaints per Municipality

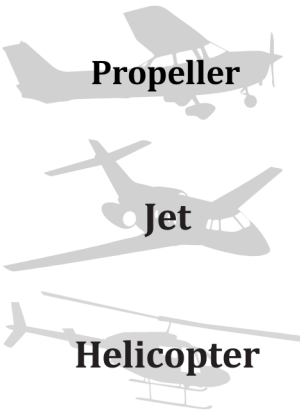


*Douglas County Unincorporated Population with Highlands Ranch Removed



8. YEAR-TO-DATE 2026 NOISE COMPLAINT STATISTICS

Complaint by Aircraft Type



Propeller 91%

Jet 7%

Helicopter 2%

*#1 Household Removed

Complaint by Operation Type



Departures 31%



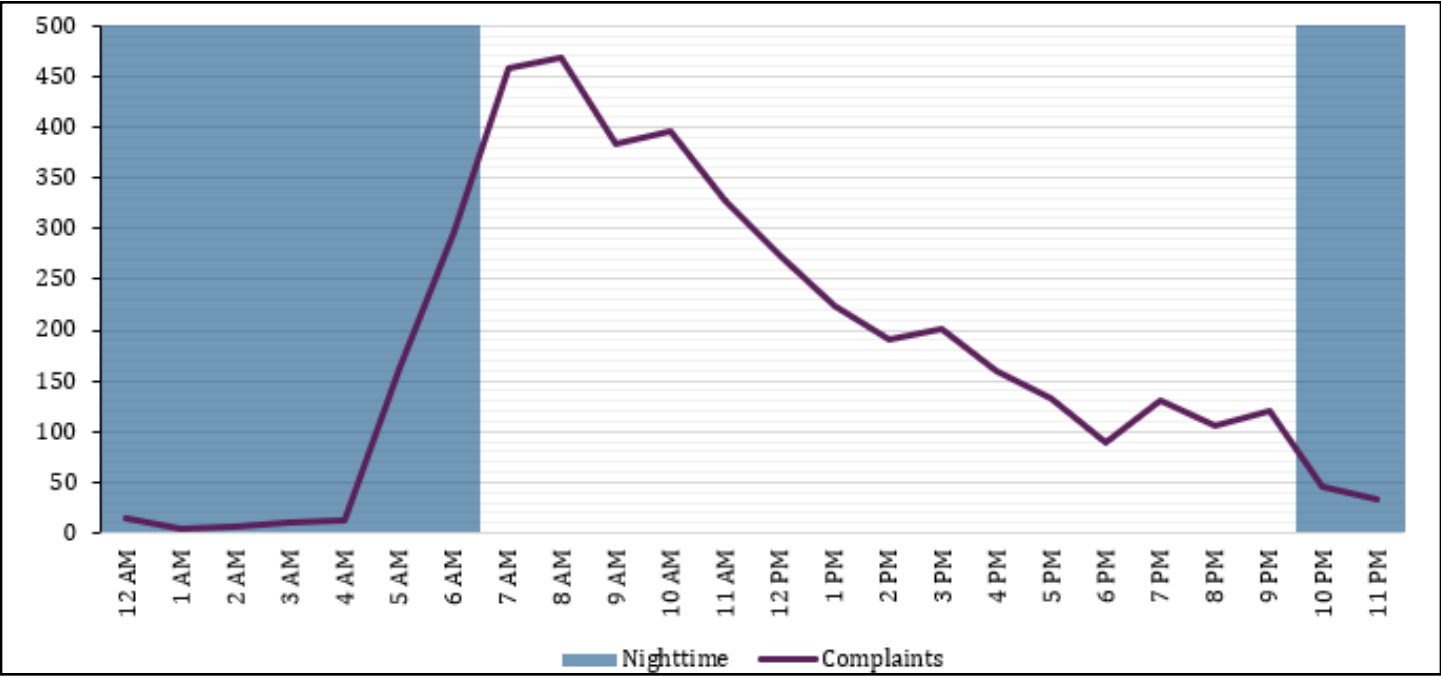
Arrivals 14%



Training 55%

*#1 Household Removed

Complaints by Hour

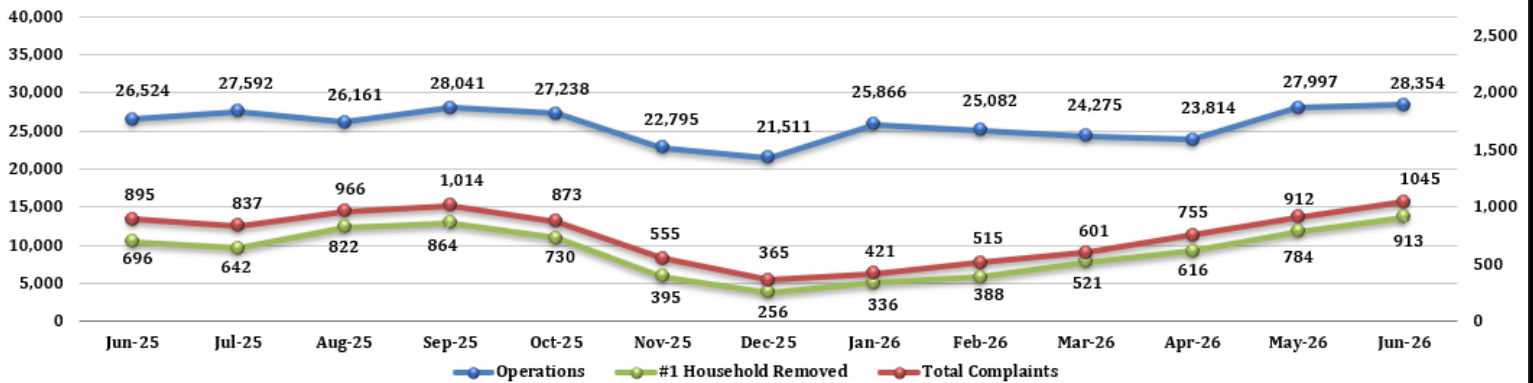


Noise Complaint Responses Completed	
Email	436
Phone	31
Total	467

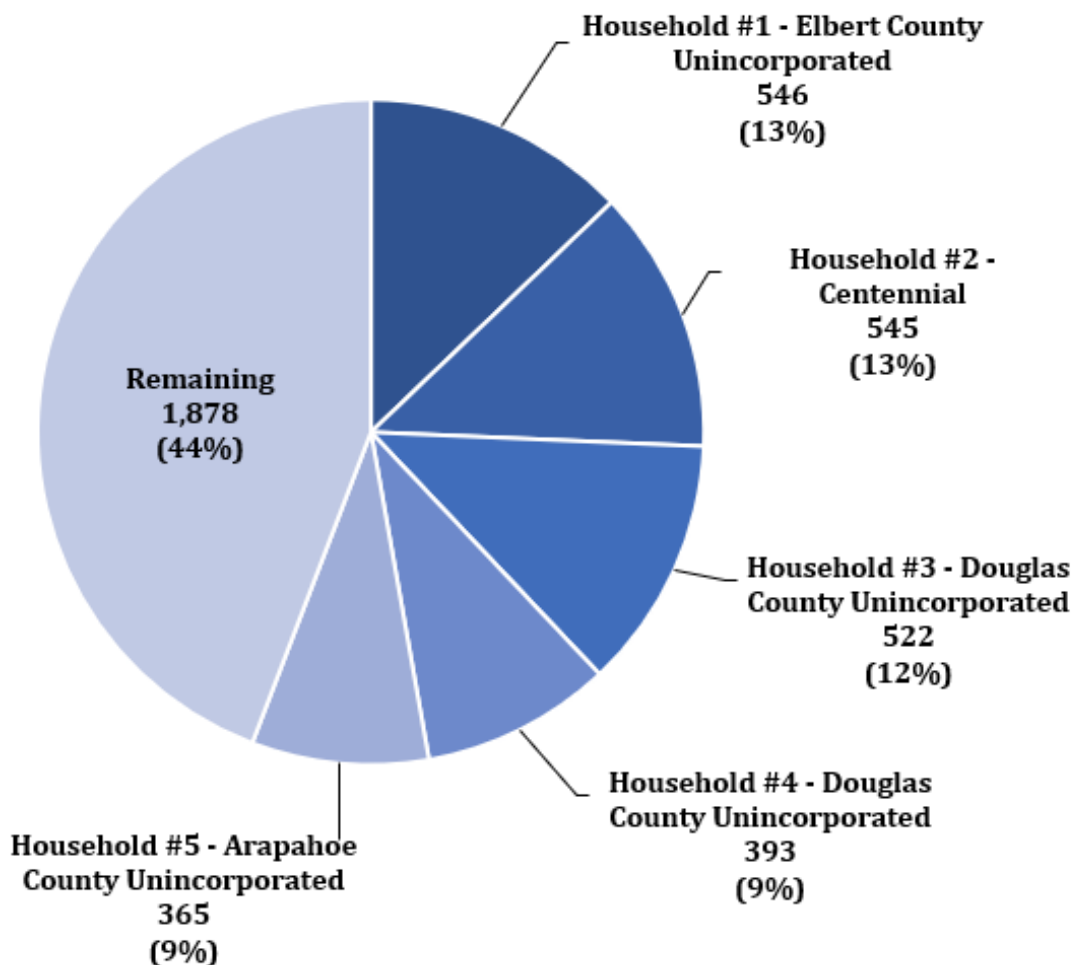
Time Complaint Received	
Day (7:00 AM—9:59 PM)	3,663
Night (10:00 PM—6:59 AM)	586
Total	4,249

8. YEAR-TO-DATE 2026 NOISE COMPLAINT STATISTICS

13-Month Trend



Top 5 Household Complaints YTD



This map takes all of the flight track data for the given time period and creates a line density plot overlaid with the monthly noise complaint dot map. This enables a better understanding of where the flight tracks are at in relation to noise complaints, 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.

Household Location and Number of Complaints

- 1
- 2 - 5
- 6 - 10
- 11 - 25
- 26 - 50
- 51 - 75
- 76 - 99
- 100 +

Lower Density Traffic Higher Density Traffic

10. NOTES AND DISCLAIMER

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



Noise Hotline: 303-790-4709

www.noise.centennialairport.com



CENTENNIAL AIRPORT

PORTABLE NOISE MONITOR REPORT

PORTABLE NOISE
MONITOR LOCATION:

Greenwood Village, CO
(SE of Bellview Ave. & Yosemite St.)

REPORT DATE:
6/24/2026

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 3 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 at a residence just Southeast of the intersection of Bellview Ave. & Yosemite St. in Greenwood Village on May 20th, 2026. The monitor is located approximately 4.1 nautical miles Northwest 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

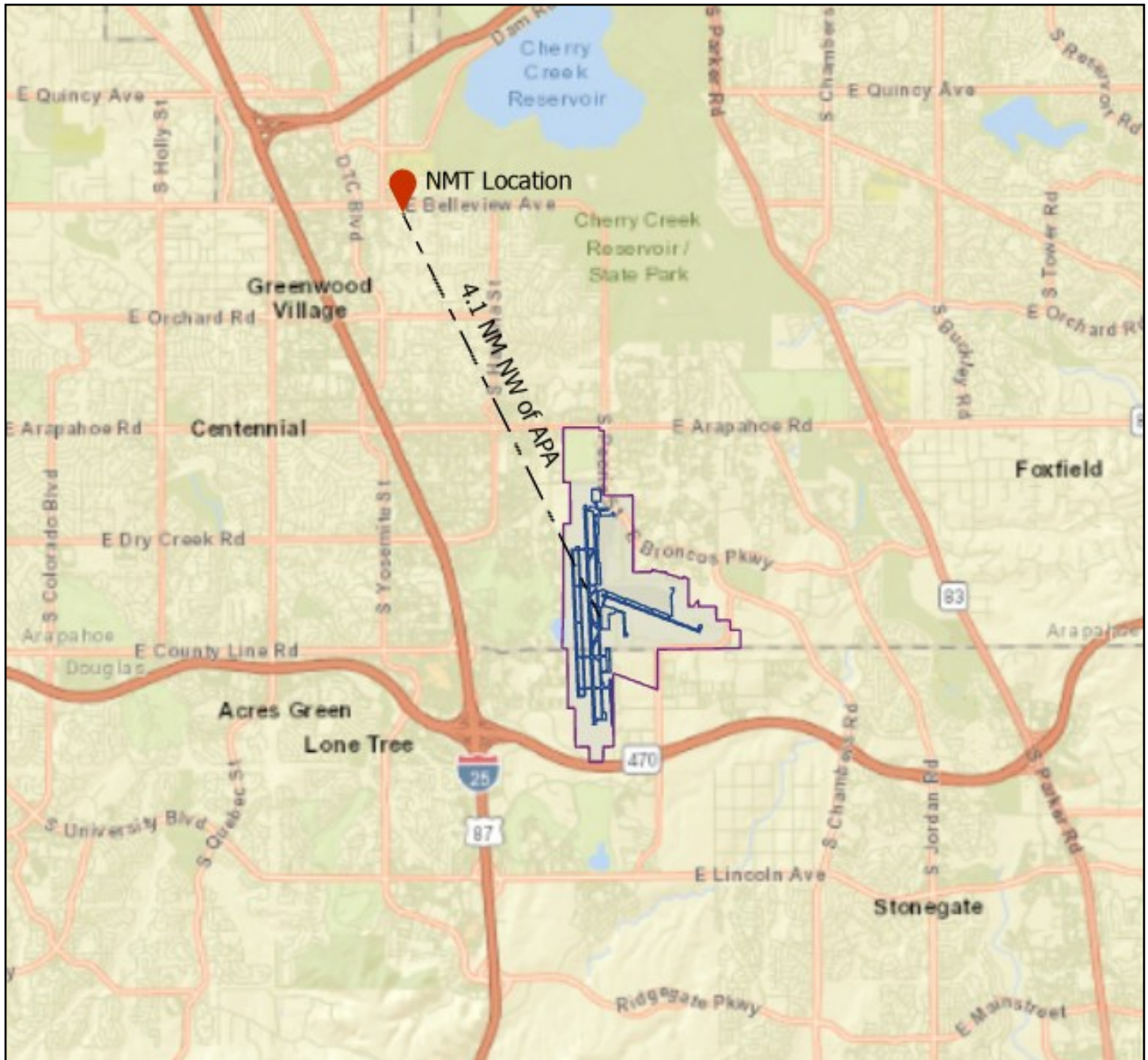
Report Date Range:

5/21/2026 - 6/18/2026

Location of Portable Monitor:

Greenwood Village, CO (SE of Bellview Ave. & Yosemite St.)

4.1 NM Northwest of Centennial Airport



2. NEIGHBORHOOD NOISE REPORT CONT'D

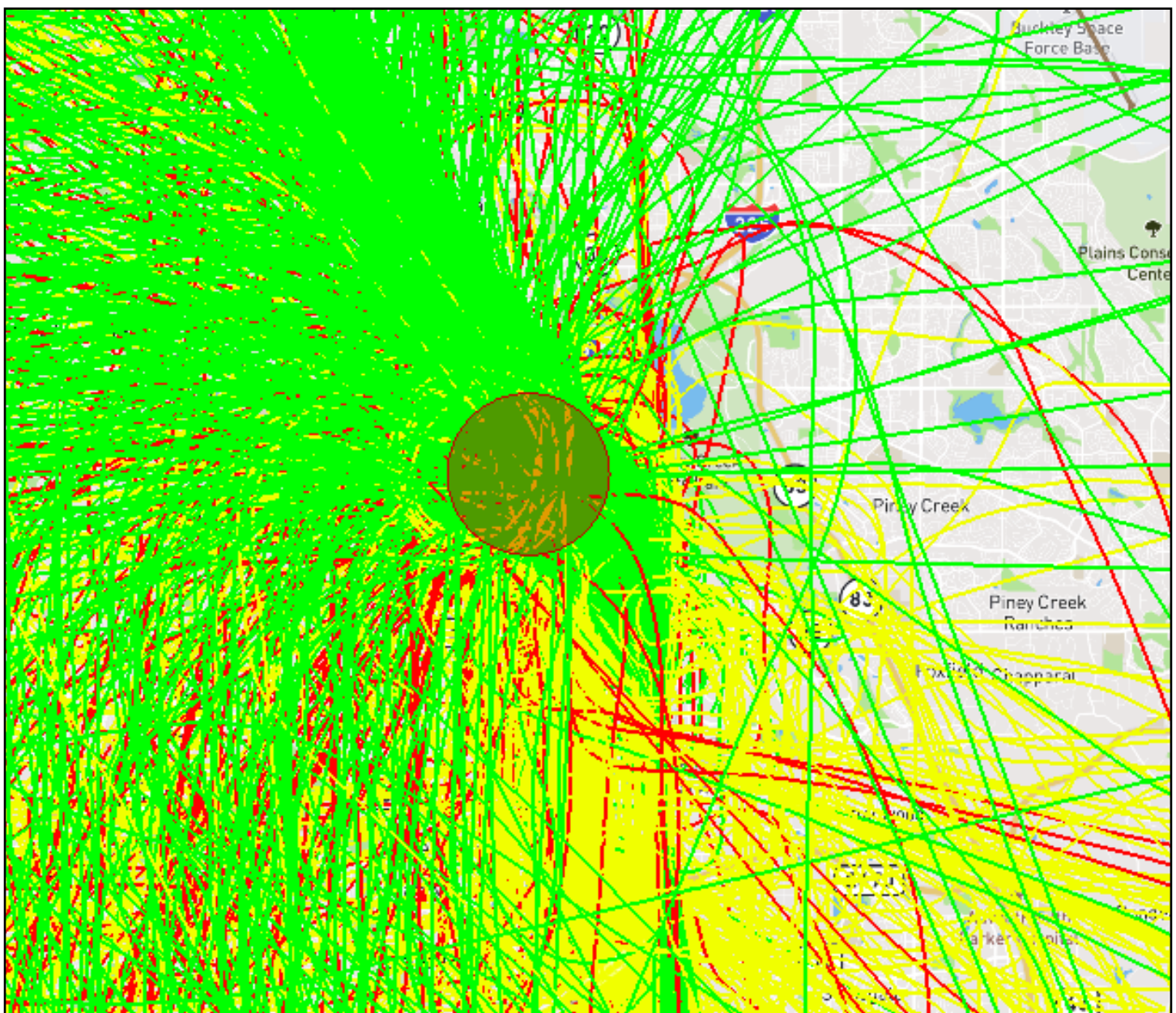
**Centennial Airport Associated Flight Track
within 1 Mile of NMT by Aircraft Type**

Propeller	956
Jet	400
Helicopter	21
Total	1,377

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

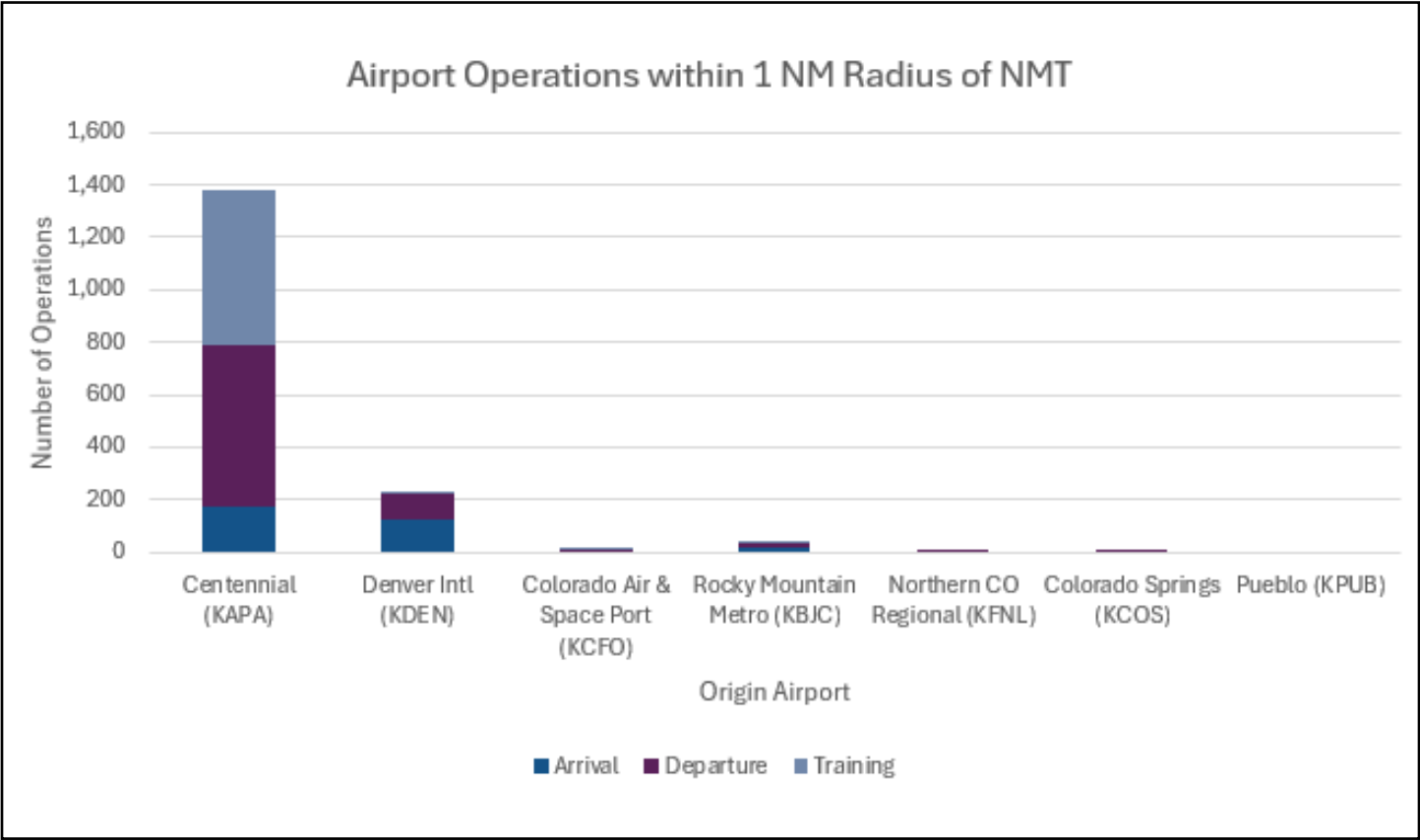
Arrival	173
Departure	613
Training	591
Total	1,377

Map of Flight Tracks that Passed within 1 Mile 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 airports 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)	173	613	591	1,377
Denver Intl (KDEN)	127	96	1	224
Colorado Air & Space Port (KCFO)	1	4	2	7
Rocky Mountain Metro (KBJC)	14	17	8	39
Northern CO Regional (KFNL)	2	1	0	2
Colorado Springs (KCOS)	1	1	0	2
Pueblo (KPUB)	0	0	0	0

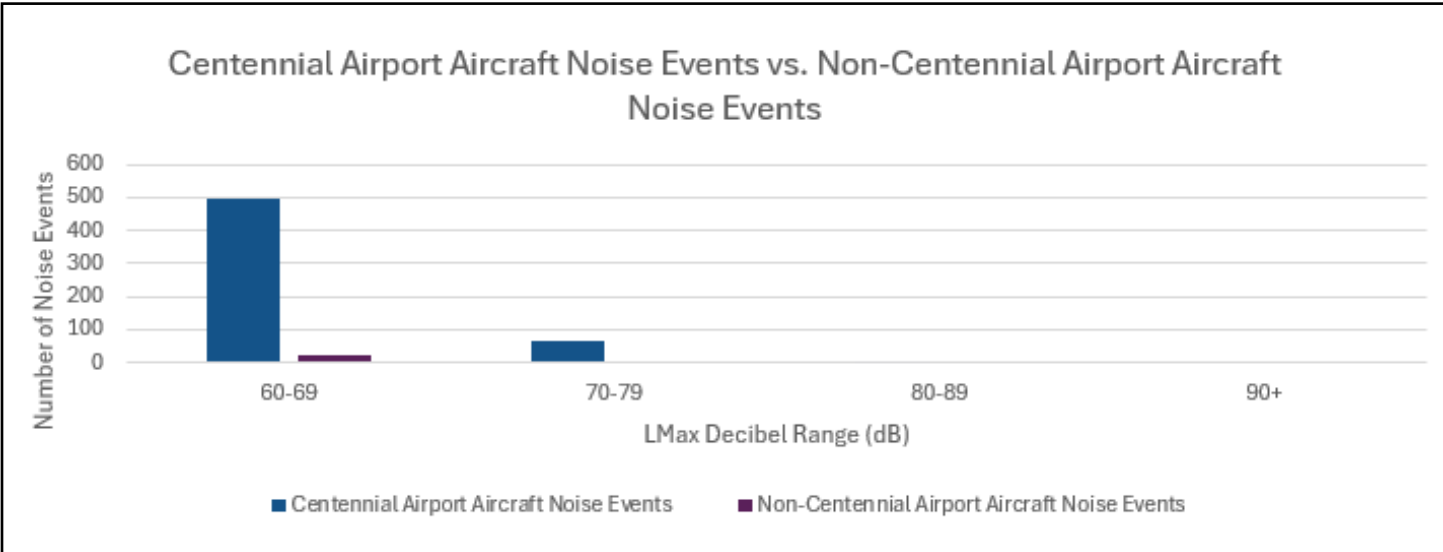
3. NOISE MONITOR STATISTICS

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.

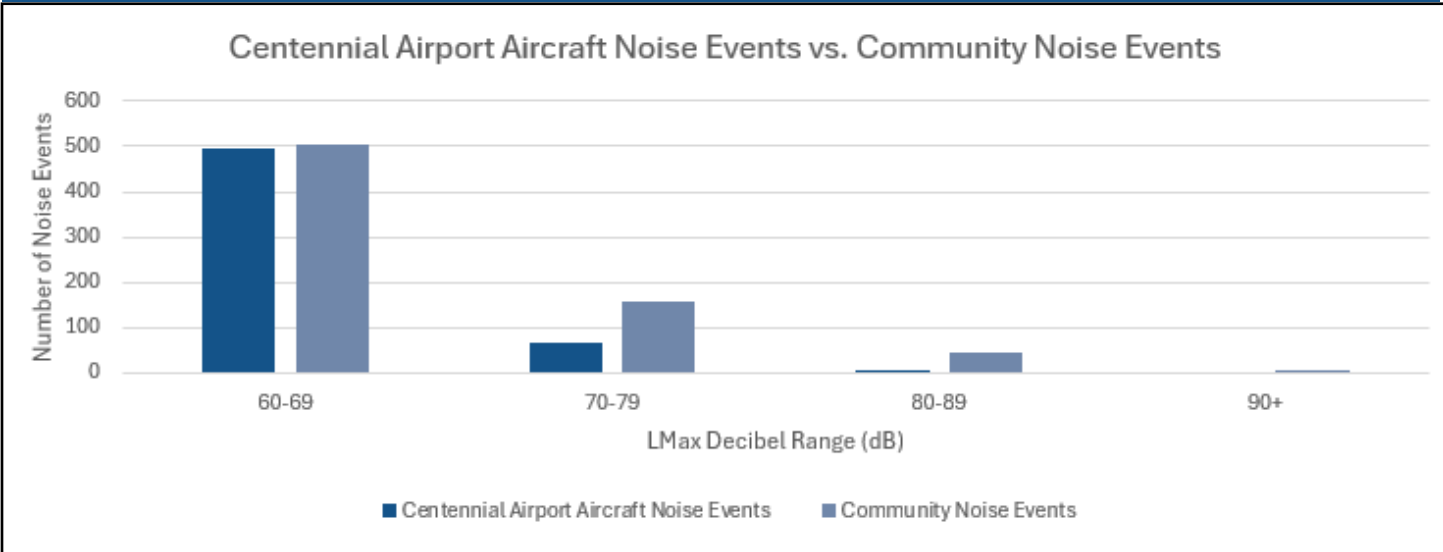
Noise Data		Noise Events	
Aircraft DNL (The 24-hour average sound level of aircraft with a 10dB penalty for nighttime noise events.)	41.5 dB	Centennial Airport Aircraft Noise Events at Noise Monitor	617
Community DNL (The 24-hour average sound level of the community with a 10dB penalty for nighttime noise events)	52.9 dB	Non-Centennial Airport Aircraft Noise Events at Noise Monitor	29
Total DNL (The 24-hour average sound level with a 10dB penalty for nighttime noise events)	53.2 dB	Total Aircraft Noise Events at Noise Monitor	646
Average Aircraft LMax (dB) (The peak noise level for a single aircraft noise event)	67.4 dB	Total Community Noise Events at Noise Monitor	833

- 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	496	25
70-79	68	0
80-89	1	0
90+	0	0

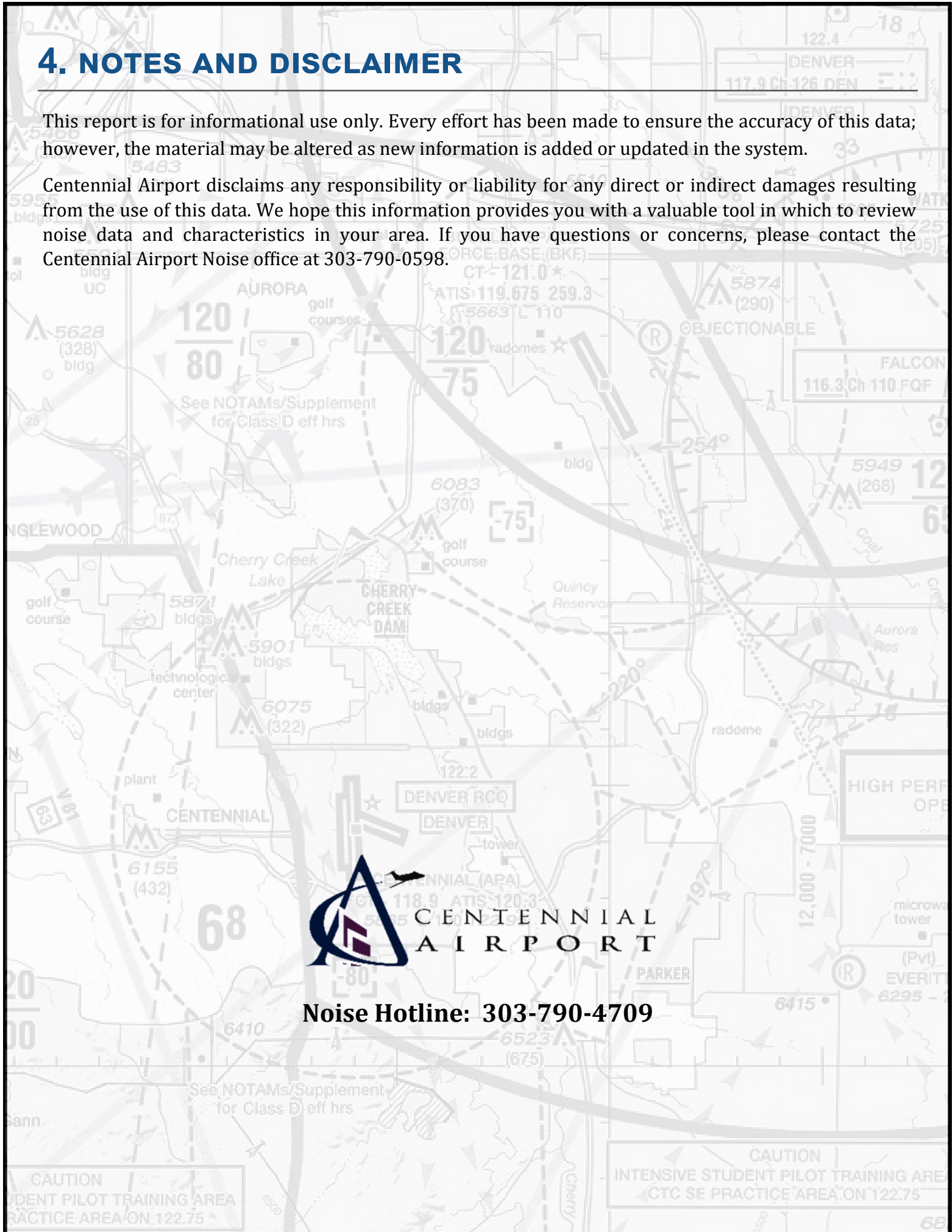


Decibel Range (dB)	Centennial Airport Aircraft Noise Events	Community Noise Events
60-69	496	503
70-79	68	158
80-89	1	43
90+	0	2

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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.

June 3rd, 2026 MEETING

➤ Public Comment

- Louviers
- Elbert County – 3 Towers Training Box
- Email Douglas County
- Email Chatfield Reservoir – Solstice Community
- Email GC Study Area
- Concerned Citizen

➤ April 2026 Noise Report

- Operations / Training / Nighttime Complaints

➤ CACNR Study Group Committee Recommendations for 3 Towers & Elizabeth Practice Area

1. Request flight schools to avoid ground reference maneuvers
2. Flight schools adopt a standardized altitude entering and exiting Practice Areas
3. Continue working with the Colorado Pilot's Association

➤ CACNR Executive Reports

- Website Revamp

ALTITUDE

DESIGN AGENCY

Centennial Airport Community Noise Roundtable

Website Refresh & Public Information System

Prepared for:
Centennial Airport Community Noise Roundtable
Contact: Andy Jones
andyjones@rocketmail.com
720-989-7022

Prepared by:
Dave Johnson
Altitude Design Agency
(720) 725-9578

Date: July 19, 2026

CONFIDENTIAL: Prepared exclusively for the Centennial Airport Community Noise Roundtable.

This agreement is made on the date of signature by and between the Centennial Airport Community Noise Roundtable ("Client") and Altitude Design Agency ("Agency"). In consideration of the mutual agreements made herein, both parties agree as follows.

1. Introduction

The CACNR website is not a marketing asset.

It is a public trust resource. It exists for residents surrounding Centennial Airport who need clear answers about aircraft noise, for elected officials and airport partners who rely on accurate public records, and for a volunteer board that deserves a website it can actually manage.

The current site has served its purpose. But the gap between what CACNR does and what the website communicates has grown. Years of meeting records are buried behind a wall of PDF links. A resident who lands on the site wanting to understand why aircraft fly over

their neighborhood, how to file a legitimate complaint, or what CACNR discussed at the last meeting has to work too hard to find the answer.

That is not only a design problem. It is an information architecture problem.

And it is solvable.

Altitude Design Agency's role in this engagement is straightforward: rebuild the CACNR website as a clean, modern, easy-to-manage public information hub that helps residents find answers, gives CACNR volunteers a system they can maintain, and gives airport partners a public-facing resource they can confidently route people toward.

2. Current Situation & Opportunity

The CACNR website currently operates on a heavily templated WordPress theme. WordPress can be functional when actively maintained, but it becomes a burden when managed by volunteers or staff without technical backgrounds.

The current result is visible.

The site has not been meaningfully updated in several months. Public records are difficult to browse. The document archive presents years of agendas, minutes, reports, studies, and presentations as a long list of PDF links with limited searchability, filtering, or consistent structure.

The navigation also buries important information behind labels that are not always public-facing. Meeting documents currently live under "CACNR Members," which sounds internal even though the documents are public records. The Report Noise function is important, but a frustrated resident may not immediately understand where to go or what process is official.

The homepage does not answer the most important question a new visitor may have: I hear aircraft noise. What do I do now?

There is also potential public confusion between centennialairportnoise.com and Centennial Airport's dedicated noise portal at noise.centennialairport.com. The refreshed CACNR website needs a clearer role alongside the airport's official infrastructure. It should not compete with the airport's complaint systems. It should educate, clarify, and route people correctly.

The opportunity is not simply to make the website look different. The opportunity is to make it work better for every person who needs it.

3. Project Approach

Altitude builds websites as infrastructure, not decoration.

For CACNR, four priorities guide the project.

Public Clarity

Residents, prospective homeowners, elected officials, aviation users, and community stakeholders should land on the CACNR site and quickly understand what CACNR is, what it can and cannot do, how to report a noise concern through official channels, and where to find meeting records, studies, and public information. No hunting required.

Honest Routing

CACNR does not directly process official noise complaints. The FAA controls airspace. Pilots have the legal right to fly in approved airspace. Those facts need to be explained clearly and without defensiveness so residents reach the correct resources instead of lodging invalid complaints or misdirecting frustration. The website should be the calmest and clearest voice in that process.

Governed Document Archive

The current archive is not easy enough to search, filter, or maintain. The refreshed site will organize agendas, minutes, presentations, reports, studies, public notices, governance documents, and airport updates into a structured Wix CMS database. Each record can be tagged by document type, year, and date. The public sees a cleaner, filterable archive. Staff can add future documents through a simple backend system without editing page layouts. The archive becomes structured, not manually rebuilt each month.

Manageable Long-Term System

Wix Studio, supported by Wix CMS and Velo where appropriate, gives CACNR volunteers and approved airport staff a more practical system for posting meeting notices, uploading agendas, and keeping public records current. The goal is not to create a complex custom platform. The goal is to create a website CACNR can realistically maintain.

4. Platform Recommendation

The RFP references WordPress as a preferred option. Altitude recommends Wix Studio with Wix CMS and Velo-supported document management instead.

For a volunteer-led organization with limited technical bandwidth, WordPress can create long-term maintenance challenges. Plugin updates, security patches, theme management, and backend complexity can result in the kind of site neglect visible on the current CACNR website.

Wix Studio gives CACNR a secure managed hosting environment, a cleaner editing experience, reduced plugin and maintenance dependency, built-in CMS tools, Velo-supported development capability where needed, and easier admin training for non-technical users.

For CACNR's actual needs, posting monthly agendas, uploading minutes, keeping meeting information current, routing complaints properly, and preserving public records, Wix Studio is a practical and durable solution.

5. Scope of Work

Altitude Design Agency will deliver the following within the fixed project fee.

Project Kickoff & Current Site Review

Review of existing CACNR website content, structure, navigation, and document archive. Identification of publicly available documents for migration. Confirmation of domain access, admin credentials, approved complaint routing links, visual asset sources, and authorized admin users.

Sitemap & Navigation Restructure

Refined six-page sitemap and navigation architecture designed for public-first clarity. Navigation labels will reflect how residents and stakeholders think, not internal committee structure.

Wix Studio Website Design & Build

Full Wix Studio website build with mobile-responsive layouts across all pages. The design will be clean, modern, civic, and trustworthy. Information architecture and usability will take priority over decorative design.

Updated Body Copy

Existing page copy will be reviewed and rewritten for clarity, plain-language accessibility, SEO structure, and AI-search readability. CACNR's role, advisory authority, and limitations will be stated clearly on relevant pages.

Content & Document Migration

Existing public website content will be migrated to the refreshed site. Publicly available documents from the current CACNR website will be downloaded, organized, and uploaded into the new structured archive.

Structured Meetings & Documents Archive

A Wix CMS database will be built for the document archive. Each document record may include title, date, year, document type, and uploaded file. The public archive page will display documents with filtering by year and document type, along with keyword search by title. Staff will be able to add new documents through a simple CMS interface. No page layout editing will be required.

Document types may include: Agendas, Minutes, Presentations, Reports, Studies, Public Notices, Governance Documents, Airport Updates.

Incentive Dashboard Integration

The refreshed website will incorporate the newly developed CACNR Incentive Dashboard with placement within the appropriate page structure and supporting explanatory copy so public users understand its purpose. This scope assumes CACNR or Centennial Airport will provide all dashboard materials including approved data, graphics, embed code, or link. New dashboard design, live data modeling, custom reporting, automated data feeds, and ongoing dashboard maintenance are not included unless separately scoped and approved in writing.

Complaint Submission Functionality

The refreshed website will include clear complaint submission routing. This includes prominent buttons, links, or approved embedded access to Centennial Airport's official noise complaint process. The CACNR website will not operate as an independent complaint intake system. All submissions will route to official Centennial Airport channels to preserve complaint validity and keep CACNR's advisory role clear.

Noise Education & FAQ Page

Plain-language educational content covering CACNR's advisory role, FAA jurisdiction, local authority limitations, lawful airspace, voluntary noise abatement procedures, flight school operations, touch-and-go operations, the Fly Quiet program, the Part 150 Noise Study, and community mitigation efforts. This page will be written to reduce public confusion and set accurate expectations before residents reach official complaint channels.

Report Noise Page

Dedicated complaint routing page with prominent calls-to-action linking to Centennial Airport's official noise complaint tools, WebTrak resources, airport noise hotline, and approved airport noise staff contact information. This page will explain what information residents need before filing, what the submission process involves, and how CACNR's role differs from official complaint intake.

Homepage

Public-first homepage with clear orientation, next meeting information, prominent Report Noise call-to-action, plain-language What CACNR Does summary, latest notices, and links to key resources. The homepage will answer the question many residents arrive with: I hear aircraft noise. What do I do now?

About CACNR Page

Mission, history, membership structure, advisory role, and a plain-language explanation of what CACNR can influence and what falls outside its authority.

Resources & Contact Page

Links to Centennial Airport, the dedicated airport noise portal, FAA resources, WebTrak, and other relevant public resources. CACNR contact information, public participation details, and member roster if approved for public display.

Visual Asset Integration

Airport-provided photography and video assets will be integrated throughout the site with attribution handled according to Centennial Airport requirements.

Contact Form

Basic inquiry routing form connected to approved CACNR contact information.

Basic SEO Configuration

Page titles, meta descriptions, heading structure, and URL formatting established for search visibility and AI-search readability.

Google Analytics Integration

Google Analytics 4 connected and confirmed before launch.

Mobile, Tablet & Desktop Testing

Cross-device review completed before launch.

Staff Training Session

One 60 to 90-minute training session covering the Wix CMS dashboard, document upload workflow, meeting notice updates, and basic site content management for approved CACNR and airport staff admin users.

Launch Support & Post-Launch Bug Fixes

Active support through site launch and 60 days post-launch for bug fixes and minor adjustments as defined in Section 15.

6. Proposed Sitemap

The refreshed website will use a simple six-page structure:

1. Home
2. About CACNR
3. Report Noise
4. Noise Education
5. Meetings & Documents
6. Resources & Contact

This keeps navigation within the RFP's requested four to six main menu items. The Report Noise action will also appear as a prominent persistent button throughout the site, not only as a standard menu item.

7. Scope Boundary

This project does not include custom live flight tracking, native noise complaint intake, complex interactive mapping, new original photography or video production, custom full-text PDF indexing, new dashboard design or data modeling, or content beyond the existing CACNR public record and approved airport-provided assets. Any items outside this defined scope can be discussed as separate engagements and will be quoted and approved in writing before work begins.

8. Visual Assets

Centennial Airport will provide approved photography and video assets for use on the refreshed website, including any required attribution language. If additional stock imagery or stock video is needed beyond airport-supplied assets, licensing costs will be presented to CACNR for approval before purchase and billed separately at cost.

9. Timeline

The schedule below reflects CACNR's updated project timeline and assumes timely access to domain credentials, current site access, document archives, approved airport visual assets, dashboard materials, complaint routing links, and review feedback. Delays in any required client-provided materials may extend the project timeline and shall not constitute vendor delay.

August 5, 2026

Proposal approval and contract authorization at CACNR board meeting.

Week 1 - Project Kickoff

Contract signed. Initial payment received. Domain and admin access confirmed. Document sources, complaint routing links, Incentive Dashboard materials, and airport visual assets requested. Admin users confirmed. Sitemap finalized.

Week 2 - Site Structure & Build

Wix Studio build begins. Homepage structure, core page layouts, navigation architecture, and document archive CMS collection setup.

Week 3 - Content & Document Migration

Existing public website content and documents downloaded, organized, cataloged, and uploaded into the structured Wix CMS archive. Core page copy drafted.

Week 4 - Archive, Routing & Dashboard

Meetings and Documents archive configured. Complaint routing page developed. Noise Education and FAQ content refined. Incentive Dashboard integrated using CACNR-provided materials.

Week 5 - Visual Integration & SEO

Airport-provided photography and video integrated. Page copy refined. SEO structure, meta framework, and Google Analytics setup completed.

Week 6 - CACNR Review

Review version delivered to CACNR for feedback. Revision round begins.

Week 7 - Revisions & Training

Approved revisions completed. Staff training session delivered for authorized CACNR members or airport staff.

Week 8 - Final QA & Rollout Preparation

Mobile, tablet, and desktop testing completed. Document archive QA, link checks, and launch preparation finalized.

October 7, 2026

Website presented for CACNR rollout and approval at the regular board meeting.

Post-Launch

60 days of included post-launch support for bug fixes and minor adjustments as defined in Section 15.

10. Investment

Fixed Project Fee

\$5,000

Not to exceed.

Payment Terms

\$2,500 due upon signed agreement.

\$2,500 due upon delivery of the completed website for CACNR rollout and final review.

Work does not begin until the signed agreement and initial payment are received. Final payment is due upon delivery of the completed website, prior to full administrative handoff, source file release, password transfer, and transfer of site control. Post-launch support does not delay or defer final payment. Additional services outside the agreed scope are quoted and approved in writing before work begins.

Client Dependencies

The project timeline assumes CACNR provides required access, documents, approved visuals, dashboard materials, complaint routing links, and review feedback in a timely manner. Delays in any required client-provided materials may extend the project timeline and shall not be considered vendor delay.

11. Platform & Hosting Costs

Wix Studio hosting, domain connection, and platform subscription fees are billed directly to CACNR and are separate from Altitude's project fee. Altitude will assist with selecting the appropriate Wix plan, connecting the domain, and preparing the site for launch. Multi-year Wix plans are frequently available at discounted rates and are recommended for long-term cost stability.

12. Stock Imagery & Video

If airport-supplied assets are insufficient for the site's visual needs, stock licensing costs will be presented to CACNR for approval before purchase and billed at cost, separately from the project fee.

13. References

LP Creative Events

Denver, Colorado

Luxury wedding and destination event planning. Altitude designed and built the full Wix Studio website currently live at lpcreativeevents.com. Client has been featured in Martha Stewart, The New York Times, and The Knot.

Reference: Loni Peterson | loni@lpcreativeevents.com

BEST DCSD

Highlands Ranch, Colorado

Civic organization. Altitude designed and built four websites and produced video content across the 2023 campaign season.

Reference: Andy Jones | andyjones@rocketmail.com | 720-989-7022

The Mustard Seed

Siloam Springs, Arkansas

Community boutique retail client. Altitude delivered a Phase 1 brand inventory engagement and is currently executing a signed Phase 2 stewardship engagement covering brand identity, website, storefront, and long-term brand system development.

Reference: Sarah Penick | sarah@mustardseedacq.org

14. Information Needed from CACNR

To begin upon signed agreement, Altitude will need the following:

- Domain registrar access and current hosting credentials.
- Existing CMS or admin login for the current site.
- Confirmation of whether centennialairportnoise.com will remain the primary domain.

- Consolidated document archive including agendas, minutes, reports, presentations, studies, and governance documents whether currently public or held offline.
- Approved airport photography and video assets with required attribution language.
- Incentive Dashboard materials including approved data, graphics, embed code, or link.
- Official complaint routing links including WebTrak URL, official complaint form URL, noise hotline number, and any approved airport noise staff contact details for public display.
- Names and roles of staff or volunteers who need admin access after launch.
- Confirmation of whether Centennial Airport staff should receive admin-level access.
- Approved mission statement and any required legal or public notice language.
- Member roster for the About page if approved for public display.

15. Terms

Scope of Work

Agency agrees to produce project materials at the request of Client for fees agreed upon in advance and delivery of the Work by an agreed-upon deadline. Agency agrees that it will be the sole author of the Work, which will be original work and free of plagiarism. Agency will cooperate with Client in reviewing the Work prior to final delivery. Client agrees to provide required access, approvals, and coordination in a timely and organized manner. Delays in approvals, access, or scheduling may extend the project timeline.

Revisions

Agency will provide Client with two minor revision rounds at no additional charge. Minor revisions include light visual adjustments, basic copy corrections, minor layout refinements, and factual corrections identified by Client. Revisions do not include full redesign, alternate creative direction, restructuring of completed work, or preference changes after approval. Additional revisions beyond the two included rounds will be billed at \$350 per hour unless otherwise agreed upon in writing.

Client Approval

Upon acceptance of the Work, Client accepts responsibility for any further processes in which this work is used, including website launch, public deployment, and ongoing content

management. Agency is not responsible for errors occurring after acceptance of the Work by Client. Client agrees to review all finalized deliverables carefully prior to launch.

Post-Launch Support

Altitude will provide 60 days of post-launch support following website rollout. Included support covers broken links, display issues, CMS handoff questions, minor copy corrections, document archive issues, and basic technical troubleshooting related to the delivered website. Post-launch support does not include new pages, additional features, redesign work, expanded dashboard development, new custom functionality, ongoing content entry, or changes outside the approved project scope.

Cancellation

Either party may terminate this agreement in writing. Upon cancellation, Client is responsible for payment for all work completed and expenses incurred based on percentage of project completion as reasonably determined by Agency. Deposit is non-refundable once preparation begins. Agency retains ownership of all completed work until all outstanding payments are received in full.

Authorship and Proprietary Methods

Agency retains authorship of all produced assets and ownership of all proprietary workflows, production methodologies, creative frameworks, and strategic structures. Nothing in this agreement transfers ownership of Agency's internal systems, methods, or frameworks.

Independent Contractor

Agency operates as an independent contractor responsible for all applicable taxes. Nothing in this agreement creates an employer-employee relationship, partnership, or joint venture.

Limitation of Liability

Agency's total liability under this Agreement shall not exceed the total fees paid by Client. Agency shall not be liable for indirect, incidental, special, consequential, or punitive damages arising out of this Agreement or use of the Work.

Confidentiality

Both parties agree to maintain confidentiality of proprietary information shared during this engagement. This obligation survives completion or termination of this agreement.

Platform & Third-Party Costs

The following costs are the responsibility of Client and are billed directly by the respective platforms unless otherwise agreed in writing: domain registration and renewal, Wix

platform subscription and hosting fees, Google Analytics platform costs if applicable, stock imagery or stock video licensing if approved, and other third-party software or platform costs required to operate the refreshed website. Agency will provide guidance on required platforms and setup but is not responsible for ongoing platform subscription costs.

Governing Law

This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado.

16. Acceptance of Terms

Client promises to pay for the services rendered by Agency for the Work as agreed upon. By signing below, both parties acknowledge they have read and understood this Agreement and are legally bound to its terms.

Client Signature: _____

Date: _____

CACNR Chair
Centennial Airport Community Noise Roundtable

Agency Signature: _____

Date: _____

Dave Johnson
Founder and Creative Director
Altitude Design Agency

The following would be Emailed to every new CACNR Representative and Alternate Representative as soon as we have contact information.

The CACNR Roster will be Emailed separately to all new Representatives and Alternates, rather than having that specific information generally available on the website.

It is envisioned that the content here will be on the website, be fluid, changing as work progresses, new information becomes available, personnel and dates change, progress is made and new goals are established and achieved. This is provided as a sampling, for your approval, of the information envisioned to be included.

DRAFT



Welcome to the Centennial Airport Community Noise Roundtable.

The material listed below is designed to help readers become familiar with CACNR and the various aspects of its work. Please feel free to contact us (info@centennialairportnoise.com) if you have questions or would like additional information.

A public tour of Centennial Airport is recommended for those that have recently joined CACNR as well as those who would like to add to or refresh their understanding of Centennial Airport operations. Registration for each tour opens approximately two weeks in advance. All dates are subject to change.

To sign up, visit <https://www.centennialairport.com/tours>

Public Tour Dates 2026: Friday, **August 7th** - 9:00am
 Friday, **September 4th** - 9:00am
 Friday, **October 2nd** - 9:00am

CENTENNIAL AIRPORT COMMUNITY NOISE ROUNDTABLE
(CACNR)

www.centennialairportnoise.com
info@centennialairportnoise.com

ORIENTATION MANUAL

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1. Mission, Vision, Values

2. Overview

CACNR Members (this list would show the Members only, with the names of their Representatives, but not those email addresses)

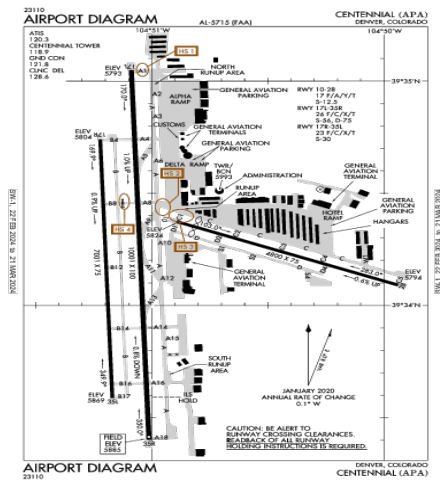
Map – Geographic Locations of Members, with Noise Monitor Locations

Centennial Airport Noise Abatement Guidelines

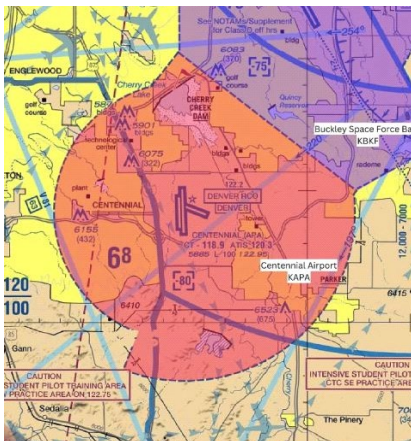


Noise Abatement
Guidelines.pdf

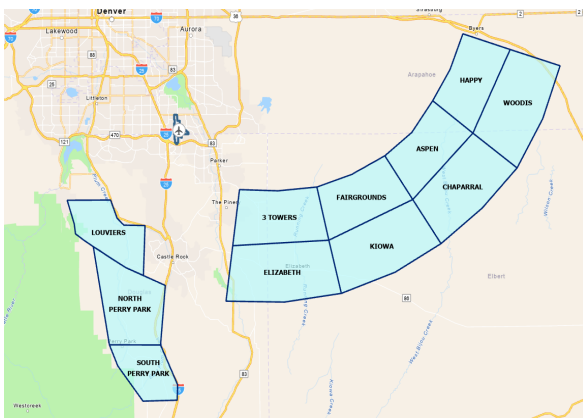
- Centennial Airport Diagram – needs to be big enough to see and read landmark roads, etc. – will see what the website update can accommodate



- Map – Airport Influence Area needs to be big enough to see and read landmark roads, etc. – will see what the website update can accommodate
- Centennial Airport Airspace - needs to be big enough to see and read landmark roads, etc. – will see what the website update can accommodate



- Centennial Airport Noise Exposure Map (NEM) – needs to be big enough to see and read landmark roads, etc. – will see what the website update can accommodate
- Front Range Practice Areas - - needs to be big enough to see and read landmark roads, etc. – will see what the website update can accommodate



3. Current Governing Documents

- Memorandum of Understanding and Funding Structure
- CACNR Bylaws
- CACNR Policies and Procedures

3. Background

- CACNR Minutes (past two years – prior years in Archives)
- CACNR Work Program & Appendices A & B (current Program, prior versions in Archives)
- Centennial Airport Part 150 Noise Exposure and Land Use Compatibility Study
- Code of Federal Aviation Regulations (CFR) Part 161 Airport Noise and Access Restrictions
- Code of Federal Aviation Regulations (CFR) Part 36 Aircraft Noise Standards

4. CACNR Resource Library

- Presentations – 30 minutes each; may also be shown in conjunction with the airport tours
 - Introduction to Centennial Airport Touch and Go Pattern
 - Introduction to Denver Airspace and Flight School Practice Areas
 - Sound, Noise and Human Perception

Arapahoe County Public Airport Authority (ACPAA) www.centennialairport.com

- Fly Quiet Program
- Minimum Standards
- Noise Complaint Hotline **303-790-4709**

Federal Aviation Administration (FAA) faa.gov

- FAA Community Involvement Program
- FAA Denver Metroplex Project
- FAA Flight Standards District Office (FSDO) – aircraft noise complaints must be submitted electronically. [Click here](#) to submit concerns to the Aviation Noise Complaint and Inquiry Response (ANCIR) Portal.
- FAA NextGen Advisory Committee
- FAA Noise Abatement Guidelines

Noise 101

Other Organizations

- Boulder Aircraft Noise - <https://bouldercolorado.gov/services/aircraft-noise>
- Congressional Quiet Skies Caucus <https://nqsc.org/Caucus.html>
- Denver International Airport Noise and Airspace –
<https://www.flydenver.com/business-and-community/noise-and-airspace/>
Noise Complaint Hotline – **303-342-2380**
- National Business Aviation Association <http://NBAA.org>
NBAA Noise Abatement Program
- National Organization to Insure a Sound Controlled Environment (N.O.I.S.E.)
www.aviation-noise.org
- Quiet Skies Over Arapahoe County -
<https://sites.google.com/view/quietskiesoverarapahoecountyco/home>
- Rocky Mountain Metropolitan Airport Fly Quiet - <https://www.jeffco.us/1694/Fly-Quiet-Program>
Noise Complaint Hotline – **303-271-4874**

5. Glossary

6. Archives

Annual Reports – (there were two, and hopefully more to come)

CACNR History

Prior Centennial Airport Community Noise Advisory Committee

Result of last Part 150 Study which led to formation of CACNR

Past CACNR Minutes

Prior CACNR Work Programs

CENTENNIAL AIRPORT

Community Noise Roundtable Study Group Committee



Second Quarter 2026
Update Report
Published: August 2026
Report #12



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EXECUTIVE SUMMARY

The second quarter (Q2) 2026 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).

Touch-and-go activity in the Study Area rose from Q2 2025 to Q2 2026. In Q2 2026, 8,392 aircraft entered the Study Area, up from 7,579 in Q2 2025, increasing the entry rate from 41.3% to 44.0%.

This is the twelfth 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 reports onward focus on data analysis of their respective quarters. [This report is focused on data analysis specifically comparing the second quarters of 2024 through 2026. Notable updates \(all updates to previous information indicated in blue\) reported in this Q2 2026 report include:](#)

- [1. Proactive Outreach & Education to Flight Schools – report page 13](#)
- [2. Flight School Fly Quiet Dashboard – report page 14](#)
- [3. Proactive Checking of Extended Traffic During Nighttime Hours – report page 16](#)

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 33 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.

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 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 Q2 2026 meeting took place on April 15th. 20 flight school representatives attended. Q1 2026 scores from the Flight School Fly Quiet Dashboard were discussed. Airport staff discussed Noise Abatement Guidelines, practice area usage, and presented Q1 2026 Study Group Report. The Q3 2026 meeting is July 15th.

Flight School Fly Quiet Dashboard	
Adopted Mitigation Strategy:	Develop and implement a Flight School Fly Quiet (FSFQ) Dashboard to measure how flight schools are adhering to Centennial Airport's Noise Abatement Guidelines through operational and training and outreach performance metrics.
Problem Mitigation Addresses:	Historically, there has not been a consistent or transparent method for flight schools to monitor their own adherence to Centennial Airport's voluntary Noise Abatement Guidelines. This measure addresses the need for ongoing performance feedback, accountability, and awareness.
Reduction of Noise Exposure:	The dashboard is intended to encourage operational improvements that influence community noise, by providing regular feedback. Over time, increased adherence to Noise Abatement Guidelines may help reduce community noise exposure.
Safety:	Maintained
Noise:	Potential reductions
Authority to Approve:	ACPAA
Responsible for Implementation:	ACPAA, Study Group
Implementation Date:	January 1, 2026
Explanation:	The ACPAA and Study Group worked with an aviation consulting team experienced in developing Fly Quiet programs at airports across the country to create the FSFQ Dashboard. The dashboard evaluates flight schools using a combination of flight-operation and ground-based performance measures. Examples of metrics include adherence to noise abatement guidelines and the incorporation of written noise abatement documentation into Standard Operating Procedures (SOPs) and other training materials. The purpose of the dashboard is to give flight schools regular, objective feedback so they can proactively improve performance.
Measurable Impact:	Q4 of 2025 served as a testing and calibration period for the dashboard. Feedback from flight schools, the Study Group, and the consulting team were incorporated prior to launch. Performance trends will be reviewed quarterly beginning in 2026 to evaluate participation levels, operational improvements, and potential long-term noise benefits.
Updates:	The FSFQ Dashboard went live on January 1, 2026. Q1 2026 scores were presented to Flight Schools at the Noise Abatement and Safety Meeting in April and at CACNR in May.

Quarter 2 2026

Flight School names are de-identified to encourage collaboration and continuous improvement rather than public ranking or competition. Presenting the data anonymously helps focus discussion on overall flight school trends, shared best practices, and program effectiveness instead of singling out individual flight schools. This approach also supports open participation by allowing flight schools to engage constructively with the program and use the results internally to improve performance.

ACPAA Operations Strategies

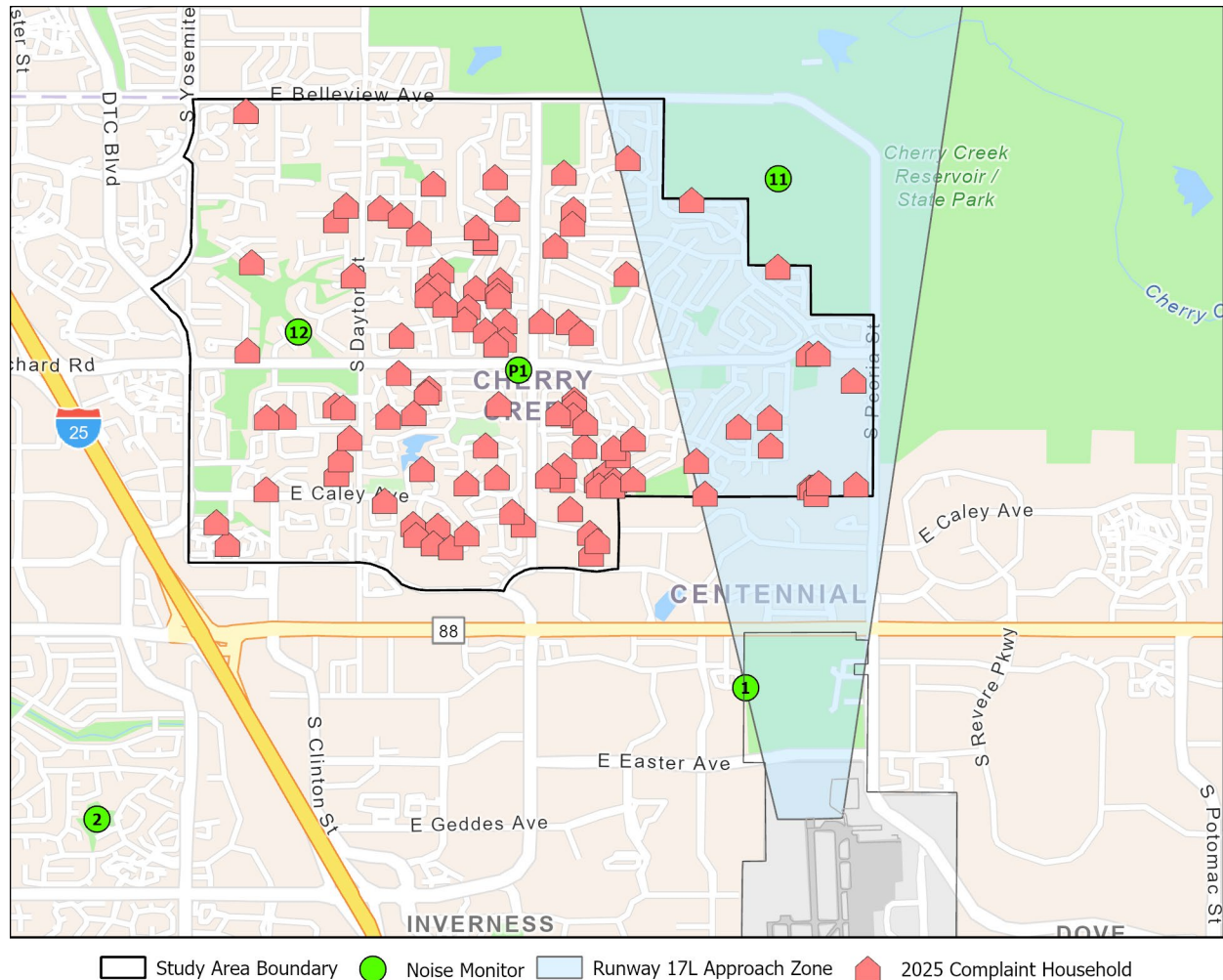
To provide methods to proactively identify and measure improvements in community noise exposure and the effectiveness of the implemented mitigation strategies.

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 Senior Noise Analyst in conjunction with the Senior Noise & Environmental Planner regularly look at nighttime outliers. In Q2 2026 9 nighttime outlier aircraft were identified and contacted by the Senior Noise & Environmental Planner 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 Bellevue 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 map below.
Measurable Impact:	Indirect.
Updates:	Data Analysis Ongoing. See page 28 for update on data analysis and mitigations.

Defined Study Area Map



The red polygons indicate households that filed complaints with the Airport in 2025. 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 Landings²:** 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.

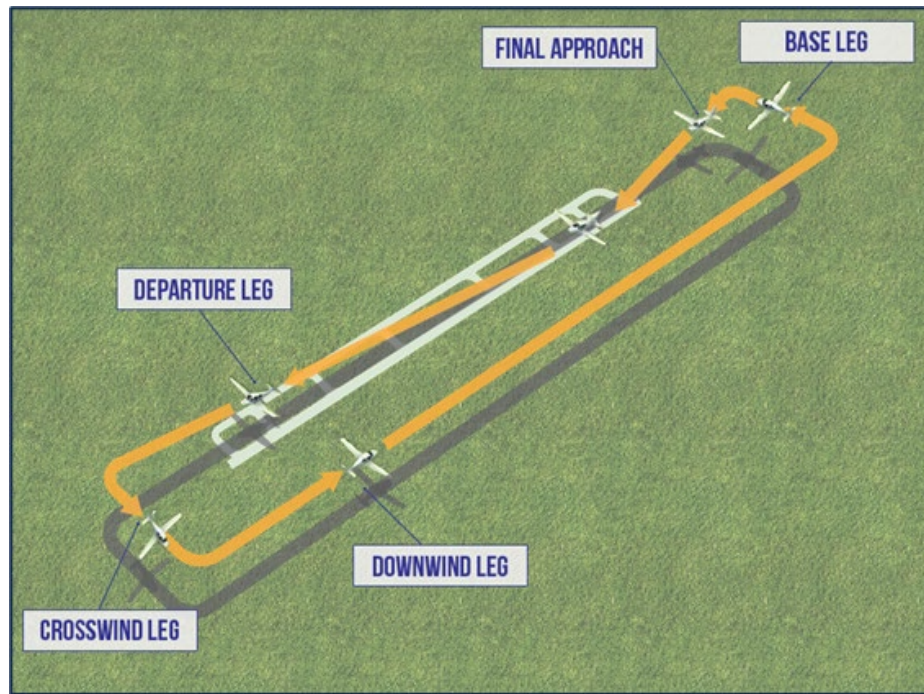
- **Traffic Flow Management:** Coordinating base turns allows air traffic controllers to manage the flow of traffic into the airport, preventing congestion and ensuring that aircraft are spaced out to avoid conflicts.
- **Conflict Resolution:** In busy airspace, it's crucial to have a clear plan for 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 2,000-3,000 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.



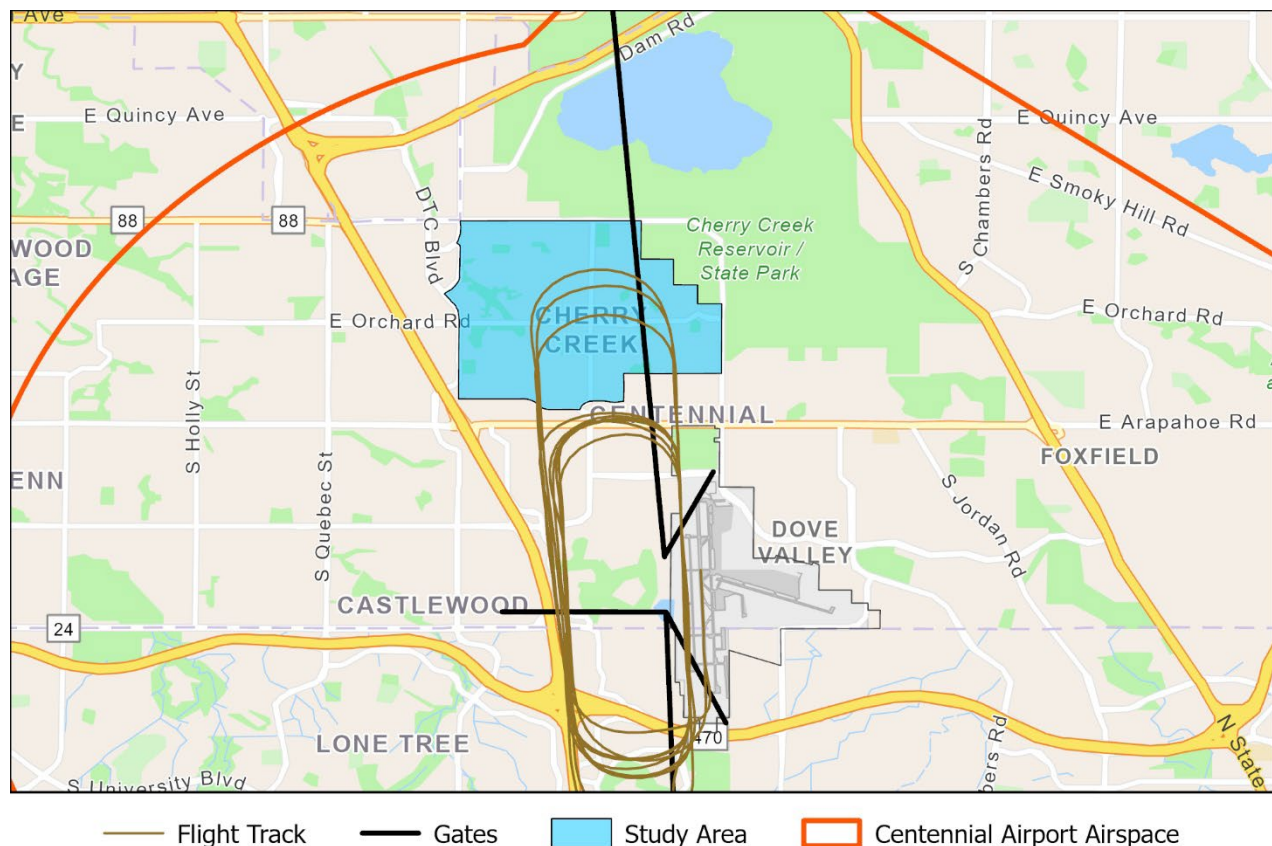
STUDY AREA DATA ANALYSIS

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 the second quarters of 2024 - 2026.](#)

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.



Q2 2024 – 2026 ANALYSIS SUMMARY

The data indicates that, despite an increase in Study Area activity during the second quarter of 2026, the overall trend continues to show improvement compared to 2024. While 2025 experienced lower operational activity, 2026 appears to be returning to more typical activity levels. While both the number and share of touch-and-go aircraft entering the Study Area increased from Q2 2025 to Q2 2026, 2026 year-to-date values remain well below 2024 levels.

The monthly trends show that aircraft entering the Study Area generally increase and decrease alongside total touch-and-go activity and overall airport operations, suggesting that Study Area activity is closely tied to total operations at Centennial Airport. The recent increase appears to follow a period of historically low percentages during late 2025 before returning to levels more consistent with earlier periods.

The increase observed during Q2 2026 is likely attributable to a combination of operational and environmental factors rather than a reduction in the effectiveness of mitigation efforts. Daylight savings time beginning at the end of Q1, exceptionally favorable morning weather compared to the afternoon (potentially causing more condensed hours of pattern work in the early morning) and improved air traffic control staffing created conditions that supported higher levels of flight training activity, resulting in more frequent pattern extensions. Additionally, temporary operating hours reduction at Colorado Air and Space Port and construction activity at Rocky Mountain Metropolitan Airport likely shifted additional touch-and-go activity to Centennial Airport.

The geographic distribution of aircraft entering the Study Area also shows that most aircraft complete their traffic pattern in the southern portion of the Study Area.

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

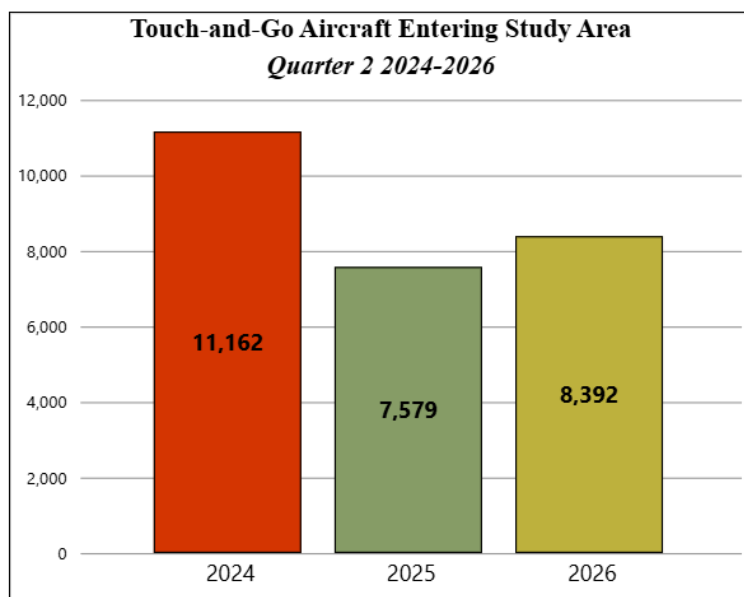


Figure 1.1

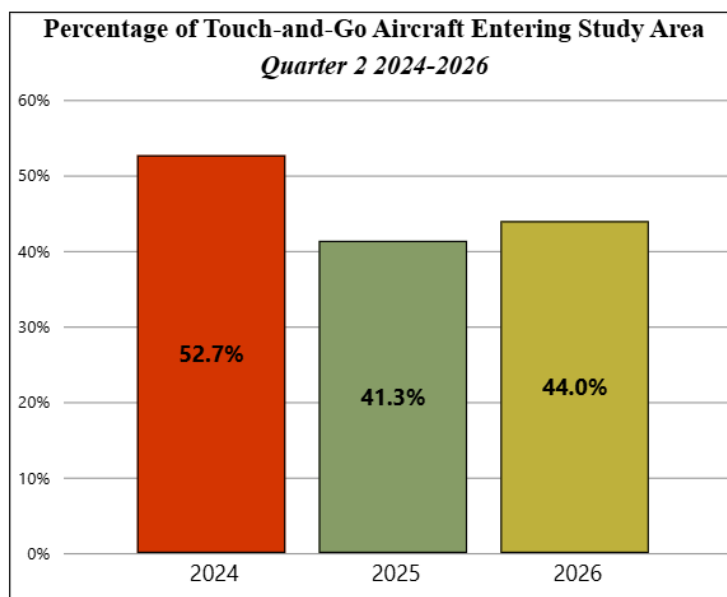


Figure 1.2

Figure 1.1 illustrates the number of touch-and-go aircraft entering the Study Area during the second quarters of 2024 through 2026. In Q2 2024 11,162 entered the Study Area, 7,579 in Q2 2025 and 8,392 in Q2 2026.

Figure 1.2 depicts the share of touch-and-go aircraft entering the Study Area over the same period. In Q2 2024, 52.7% of touch-and-go aircraft entered the Study Area, 41.3% in Q2 2025 and 44.0% in Q2 2026.

This marks one of the first reports where an uprise in touch-and-go aircraft entering the Study Area has been reported. Notably, the increase can be attributed to several contributing factors, including earlier daylight hours toward the end of the previous quarter, which resulted in earlier morning saturation for pattern work; consistently favorable morning weather, which concentrated flight training activity into the morning rather than the afternoon; and a more stable air traffic control workforce.

Additionally, **temporary** reductions in ATC tower operating hours at Colorado Air and Space Port, along with construction at Rocky Mountain Metropolitan Airport, may have contributed to increased touch-and-go activity at Centennial Airport. These conditions can reduce training opportunities at those airports, leading pilots to shift operations to Centennial, where a staffed control tower is available.

Takeaway:

- **Entry rate increase:** Daylight savings time starting at the end of Q1, concentrated touch-and-go periods, better ATC tower staffing and neighboring airports' operational challenges are all contributing factors.

FIGURE 2

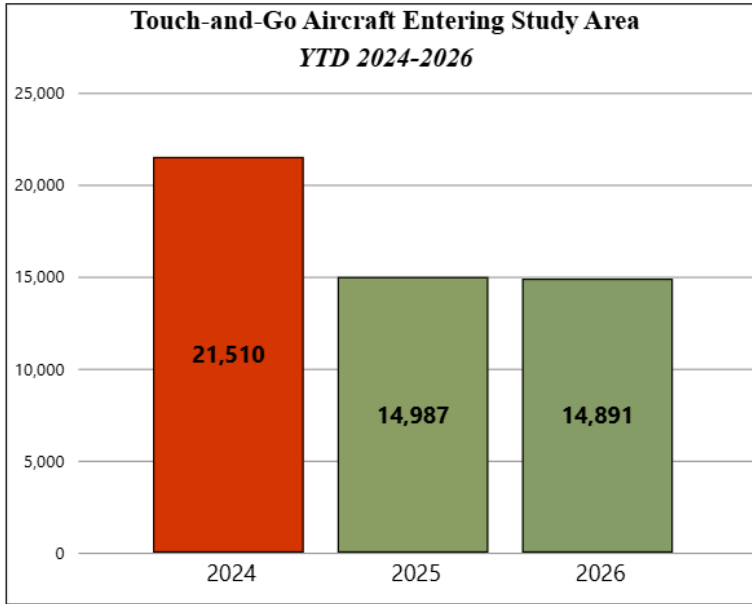


Figure 2.1

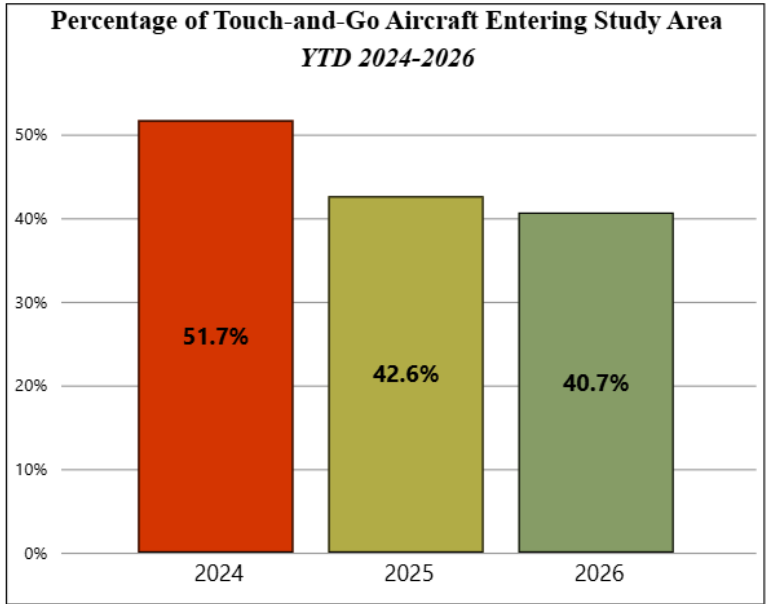


Figure 2.2

Figure 2.1 illustrates the number of touch-and-go aircraft entering the Study Area year-to-date 2024 through 2026. There has been a reduction of touch-and-go aircraft entering the Study Area with 21,510 in 2024, 14,987 in 2025 and 14,891 in 2026.

Figure 2.2 depicts the share of touch-and-go aircraft entering the Study Area over the same period. In 2024, 51.7% of touch-and-go aircraft entered the Study Area, 42.6 % in 2025 and 40.7% in 2026.

Takeaways:

- **Clear decrease:** There is a decrease in the number of touch-and-go aircraft entering the Study Area year-to-date; however, from 2025 to 2026 the number of entries has leveled out, but the share of touch-and-go aircraft entering the Study Area has continued to decline.
- **Contributing Factors:** Weather, ATC Staffing, Effective Study Group Mitigations (Pilot Education and Awareness Strategies).

FIGURE 3

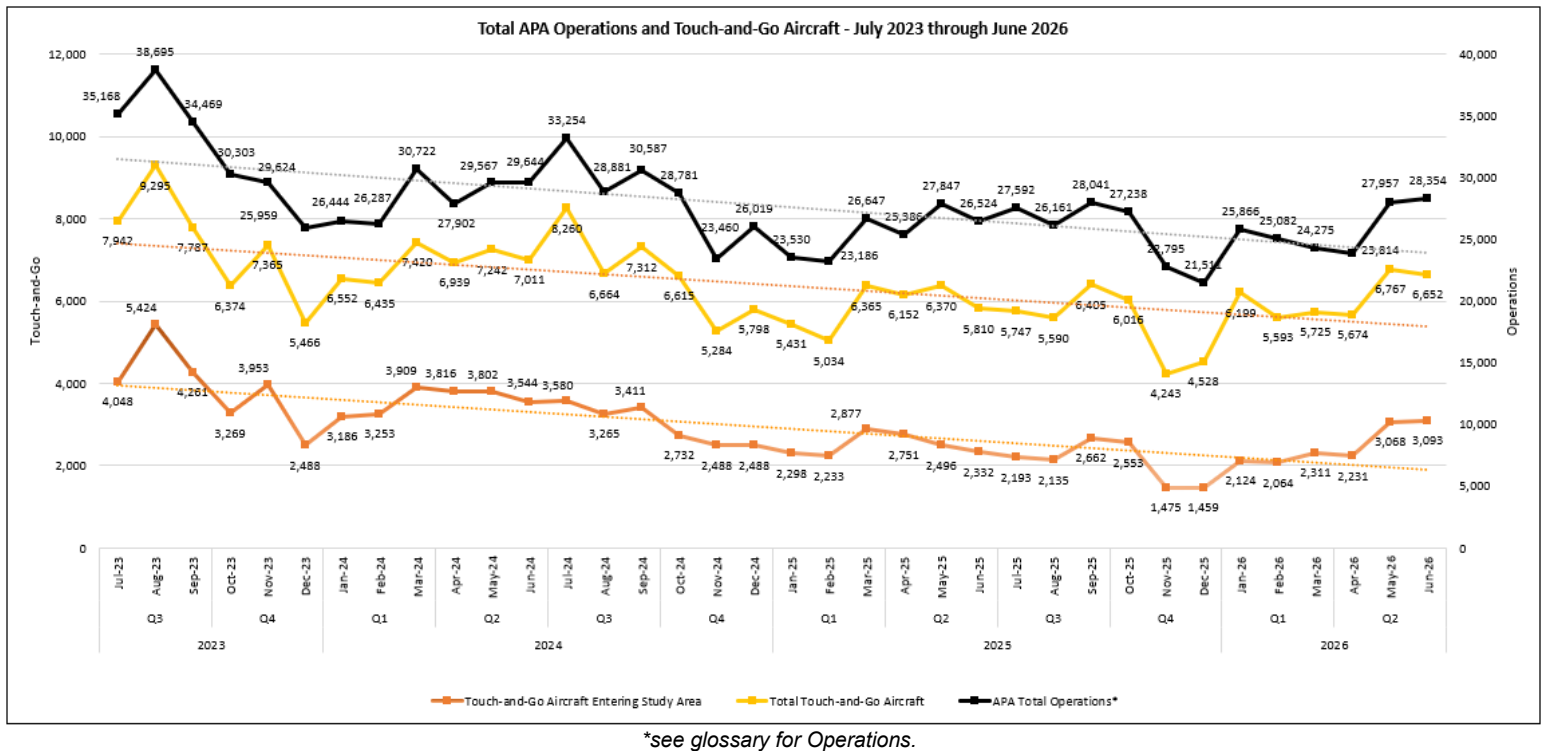


Figure 3 illustrates the number of **Touch-and-Go Aircraft Entering the Study Area**, **Total Touch-and-Go Aircraft**, and **Total APA Operations**. This visualization highlights the correlation between these key metrics: as the total number of touch-and-go aircraft increases, total APA operations increase. Generally, as the total number of touch-and-go aircraft rises, so does the number of touch-and-go aircraft entering the Study Area.

While the first two months of Q2 2026 show an increase in all three metrics, June showed a decrease in total touch-and-go aircraft while touch-and-go aircraft entering the Study Area and total APA operations increased. Hotter weather days and afternoon storms caused a shorter period during the day with condensed and saturated touch-and-go traffic, which can lead to more frequent pattern extensions. The two touch-and-go lines showed less dependency to total APA operations in June compared to April and May.

Takeaways:

- **External Factors:** Hotter weather days and afternoon storms caused touch-and-go aircraft to pause training in the afternoon.
- **Independency:** When total APA operations increased from May to June, total touch-and-go aircraft decreased and total touch-and-go aircraft entering the Study Area unproportionally increased.

FIGURE 4

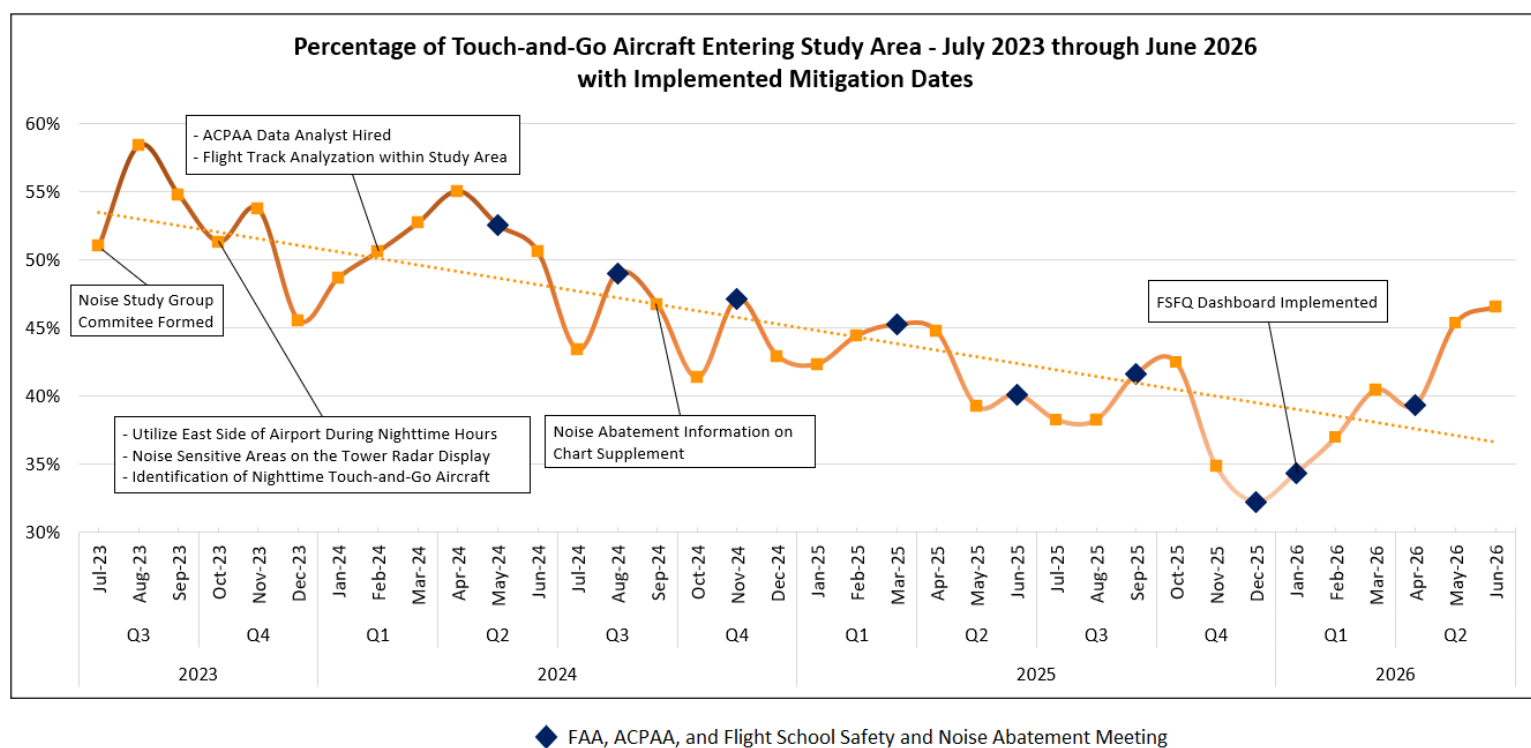


Figure 4 illustrates the trend in touch-and-go aircraft entering the Study Area from Q3 2023 through Q1 2026. The orange line shows the share of entries. A trend line (dashed orange line) captures seasonal peaks and dips. Please note the FAA, ACPAA and Flight School Safety and Noise Abatement Meetings are represented by a blue diamond on the chart.

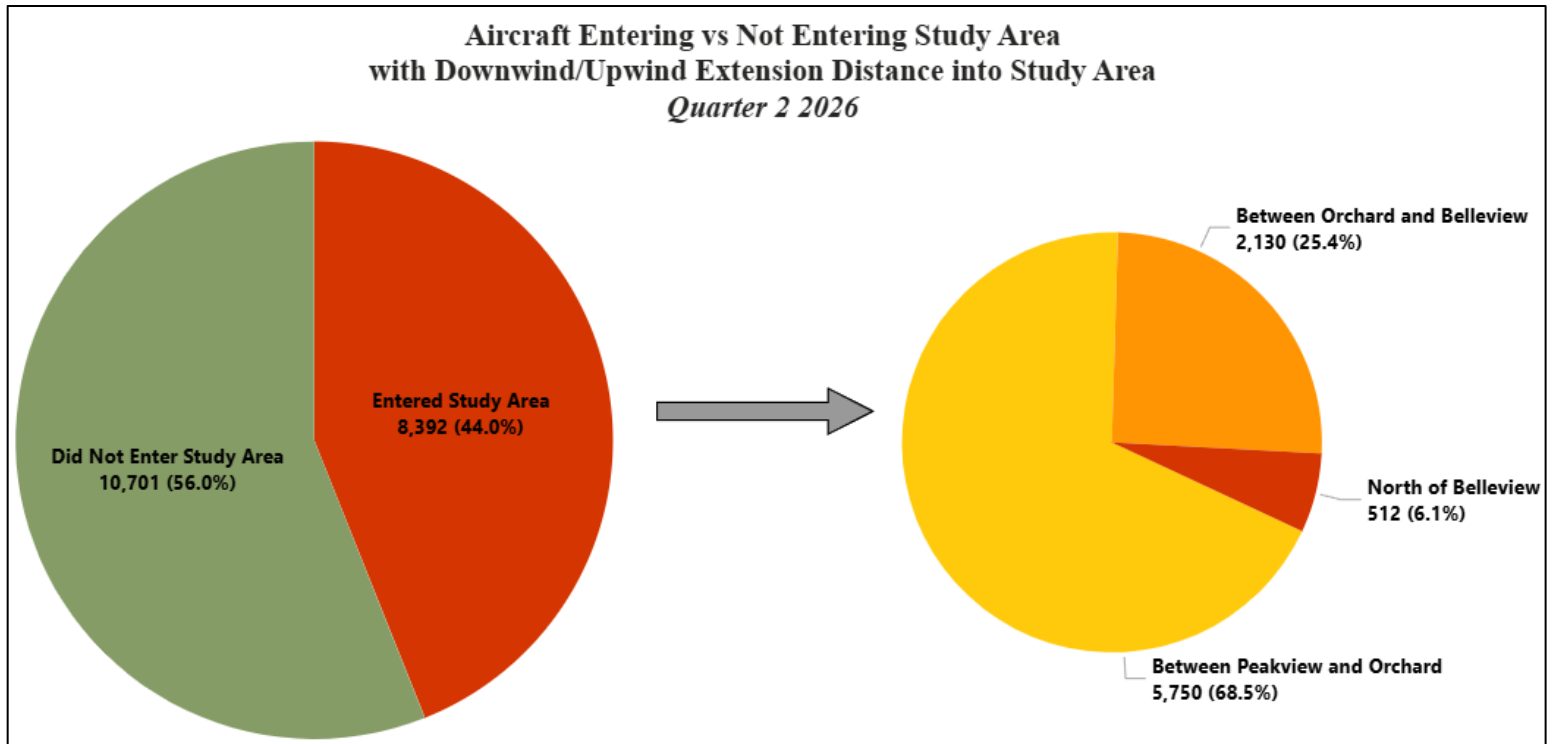
Q2 2026 showed an increase in the share of touch-and-go aircraft entering the Study Area month over month. As the line historically plateaus, rarely does it increase in the following months.

By presenting the data as a percentage, or share, rather than an absolute count, this chart evaluates operational behavior rather than activity levels. This approach normalizes changes in overall airport activity, allowing the effectiveness of operational mitigation measures to be evaluated independently of fluctuations in traffic volume.

Takeaway:

- **Increased Share of Study Area Entries:** While mitigation efforts coincided with a reduction in Study Area utilization through late 2025, the percentage has increased during the first half of 2026, indicating that continued monitoring and mitigation efforts remain important.

FIGURE 5



The left side of Figure 5 compares the number and share of touch-and-go aircraft that entered and did not enter the Study Area. In Q2 2026, 8,392 aircraft entered the Study Area.

The right side breaks down these 8,392 aircraft by how far each aircraft extended its downwind or upwind leg. These categories are cumulative: for example, if you live between Peakview and Orchard, you experienced overflights from all aircraft flying in that segment and all segments north, totaling 8,392. If you live between Orchard and Belleview, your overflight total includes aircraft in that segment and north of Belleview—a total of 2,642.

Most aircraft entering the Study Area (68.5%) made their base or crosswind turn between Peakview and Orchard.

Takeaway:

- **Majority of Aircraft Do Not Enter the Study Area:** In Q2 2026, most touch-and-go aircraft did not enter the Study Area (10,701).

FEEDBACK AND CONSIDERATIONS FOR THE Study Group

In Q2 2026, 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](#).

Appendix A: Study Group Response to Inquiry from the Centennial Airport Community Noise Roundtable (CACNR)

CACNR INQUIRY

At the May 6, 2026 CACNR meeting, it was directed that the Study Group look at possible mitigation strategies to reduce the number of overflights and potential low-flying aircraft within the 3 Towers and Elizabeth Practice Areas. Also, it was asked that the practice areas be included in the Study Group's scope of work by providing data analysis and developing operational mitigations.

BACKGROUND

The southeast practice areas, which include the 3 Towers and Elizabeth Practice Areas, were developed by local flight schools from several airports along the Front Range and then charted and published by the Colorado Pilot's Association. Towns like Elizabeth and Kiowa have grown over the years and have voiced concerns to the Airport over low-flying aircraft and noise. 14 CFR Part 91.119 prescribes minimum safe altitudes for aircraft flying over "congested areas" or "other than congested areas". The FAA does not provide definitions on what is and is not considered congested.

RESPONSE FROM STUDY GROUP

With the FAA's approval, the Study Group was formed based on the recommendation of CACNR to address the extended touch-and-go traffic pattern to the north of the Airport after the June 2021 mid-air collision. Based upon preliminary analysis and discussions at the May 15, 2026 Study Group Meeting, it was determined that the Study Group's current scope of work does not include developing operational mitigations and providing continuous data analysis of the 3 Towers and Elizabeth Practice Areas.

The current Study Area is located within the Centennial Airport Class D airspace which enables collaboration between the Airport, the local FAA air traffic control tower, based flight schools and CACNR. The 3 Towers and Elizabeth Practice Areas lie in uncontrolled airspace approximately 2 miles southeast of Centennial's airspace boundary or approximately 9 miles from the center of the airport. The Airport and local FAA air traffic control tower do not have jurisdiction in that area.

Area flight schools have noted, there are airspace constraints that pose challenges and limitations on the location of practice areas. The southeast practice areas are strategically located in an area that is the least impactful to air traffic in and out of airports like Denver International Airport, Centennial Airport, Buckley Space Force Base and Colorado Air and Space Port. They are also capped by the overlying Denver Class B airspace which serves as the arrival and departure airspace for Denver International Airport. This vertical cap provides separation of faster, larger jets with smaller, propeller aircraft conducting flight training maneuvers.

Flight schools have expressed concerns that, to the west of the airport, proximity to rising terrain and its associated effects (i.e turbulence and wind shear), Denver Class B airspace

constraints and existing traffic congestion make it a less feasible location for training boxes.

According to the 2020 US Census, Elbert County has a population density of 14.1 per square mile; whereas Arapahoe County has 821.0, Douglas County has 426.0 and Jefferson County has 762.6. If the flight schools were to consider moving the practice areas over any of these counties it would cause a larger and more dense population to be affected by flight training activities.

Based on preliminary analysis of the 3 Towers and Elizabeth Practice Areas, the Study Group will not be pursuing the practice areas in their current scope of work; however, the Study Group has made the following recommendations for the CACNR to potentially adopt:

1. Request flight schools to avoid ground reference maneuvers in the 3 Towers and Elizabeth Practice Areas. Ground reference maneuvers require aircraft to be lower to the ground (generally 1,000 feet above ground level). Ground reference maneuvers are requested to be conducted in more easterly practice areas. Several based flight schools have adopted this practice as mandatory in their standard operating procedures.
2. Flight schools should adopt a standardized altitude entering and exiting the 3 Towers and Elizabeth Practice Areas to allow for maximum vertical separation between the aircraft and communities. This practice would help flight schools be good neighbors while traversing to the practice areas.
3. CACNR should continue working with the Colorado Pilot's Association to address and relay concerns about flight training activities in the practice areas.

The Study Group acknowledges the seriousness of the issue with aircraft noise and repetitive flights in the 3 Towers and Elizabeth Practice Areas. The Study Group discussed the issue at length and believes these recommendations are the most viable options to address the issue.

As a reminder, any low-flying or erratic maneuvered aircraft concerns should be directed to the Denver Flight Standards District Office (FSDO). They are the regulatory body to determine any possible violation of federal aviation regulation.



CENTENNIAL AIRPORT

FLIGHT SCHOOL FLY QUIET DASHBOARD REPORT

REPORT DATE:
QUARTER 2 2026



Visit Our Website
centennialairport.com

1. Introduction:

The Centennial Airport Flight School Fly Quiet Dashboard was implemented in January 2026 to provide a transparent, data-driven framework for evaluating and promoting noise abatement practices among flight schools operating at Centennial Airport. The dashboard supports the airport's Fly Quiet Program by measuring operator performance across a standardized set of operational, training, and outreach metrics that encourage responsible flight operations and strengthen the airport's relationship with the surrounding community.

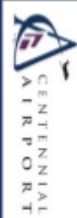
Each participating flight school is evaluated using a weighted scoring methodology that emphasizes actions most directly within an operator's control. Schools may earn up to 100 points, with an additional 10 bonus points available for voluntary initiatives that further support environmental stewardship and community engagement. Fly Quiet scores are calculated and published on a quarterly basis, allowing operators to monitor performance, identify opportunities for improvement, and track progress over time. Each metric is further detailed at the end of this report.

The dashboard presents key performance metrics related to operational noise abatement, instructor training, community participation, and other voluntary initiatives. By providing consistent and objective performance measures, the dashboard encourages continuous improvement, recognizes operators that demonstrate exemplary noise abatement practices, and supports Centennial Airport's commitment to balancing a thriving aviation environment with the quality of life of neighboring communities.

To foster a collaborative and constructive relationship with Centennial Airport's flight schools, all operator identities presented in this report have been deidentified. The Fly Quiet Dashboard is intended to serve as a performance improvement and engagement tool rather than a means of public comparison. By focusing on aggregate performance trends and anonymous benchmarking, the dashboard encourages open participation, honest dialogue, and continuous improvement while recognizing that effective noise abatement is best achieved through cooperation among the airport, flight schools, air traffic control, and the surrounding community.

The following schools are the entities being scored by this program. These operators are approved under the Centennial Airport Minimum Standards to operate as a Flight School or Commercial Flying Club:

- Aspen Flying Club
- ATP
- Centennial Flyers
- Dagmar Aerobatics
- Epic Flight Academy
- Flights Inc.
- Independence Aviation
- Jeppesen Employee Flying Association



Apr-26 - Jun-26

Centennial Airport Flight School Fly Quiet Program - Overall Scores

Selection

Year

Jun-26 May-26

Apr-26 Mar-26

Feb-26 Jan-26

School Size

Large Small

Overall Scores

Flight Schools	Total Movements	OPERATIONAL (70 pts)	TRAINING AND OUTREACH (30 pts)	BONUS (10 pts Max)	TOTAL SCORE
School G	26	68.5	20.0	6.0	94.5
School E	1,131	60.1	20.0	10.0	90.1
School B	13,023	46.7	24.0	8.4	79.1
School C	6,487	52.1	20.0	6.3	78.4
School H	154	56.7	15.0	6.0	77.7
School F	820	58.7	10.0	8.0	76.7
School A	13,562	45.0	20.0	8.0	73.0
School D	5,230	40.6	10.0	6.1	56.7

Element Scores

FLIGHT SCHOOL

OPERATIONAL (70 PTS)

TRAINING & OUTREACH (30 PTS)

BONUSES (10 PTS MAX)

Flight Schools	Total Movements	Reduce extended downwind s in South Flow (15 pts)	Reduce overflights of noise sensitive areas (10 pts)	Reduce flights during voluntary curfew (20 Pts)	Increase use of night pref. runway (5 pts)	Limit the number of touch-and-go's per flight (20 pts)	Integrate noise abat. into instructor training (20 pts)	Attend monthly noise CACNR meetings (10 pts)	Qty. noise abatmnt. meetings (-5 pts. per missed mtg.)	Obtain UL94 Supp. Type Cert. (3 pts)	Install climb prop blades (3 pts)	Use flight sims for training (3 pts)	Participate in airport charitable events (3 pts)
School A	13,562	8.3	5.2	14.7	4.4	12.4	20.0	0.0	0.0	3.0	3.0	1.0	1.0
School B	13,023	9.3	5.3	11.8	4.4	15.9	20.0	4.0	0.0	3.0	0.4	2.0	3.0
School C	6,487	10.8	6.4	17.0	3.1	14.8	20.0	0.0	0.0	0.8	2.5	1.0	2.0
School D	5,230	8.6	7.5	5.1	2.0	17.4	10.0	0.0	0.0	0.6	0.5	3.0	2.0
School E	1,131	11.7	8.0	16.4	4.6	19.5	20.0	0.0	0.0	2.1	3.0	3.0	3.0
School F	820	10.6	5.1	18.4	4.6	20.0	15.0	0.0	-5.0	0.0	3.0	2.0	3.0
School H	154	8.4	7.1	18.7	2.5	20.0	15.0	0.0	0.0	1.5	1.5	0.0	3.0
School G	26	15.0	8.5	20.0	5.0	20.0	20.0	0.0	0.0	0.0	3.0	0.0	3.0

2. Quarter 2 2026 Dashboard Score Report:



Jan-26 - Jun-26

Centennial Airport Flight School Fly Quiet Program - Overall Scores

Selection

Year

Jun-26 May-26

Apr-26 Mar-26

Feb-26 Jan-26

School Size

Large Small

Element Scores

Overall Scores

Flight Schools	Total Movements	OPERATIONAL (70 pts)	TRAINING AND OUTREACH (30 pts)	BONUS (10 pts Max)	TOTAL SCORE
School G	55	69.0	20.0	6.0	95.0
School E	2,299	59.5	20.0	10.0	89.5
School B	27,308	51.1	24.0	8.4	83.5
School H	504	59.1	15.0	6.0	80.1
School C	12,797	53.8	20.0	6.3	80.1
School A	24,372	49.5	20.0	8.0	77.5
School F	1,746	57.8	10.0	8.0	75.8
School D	10,315	44.8	10.0	6.1	60.9

FLIGHT SCHOOL

OPERATIONAL (70 PTS)

TRAINING & OUTREACH (30 PTS)

BONUSES (10 PTS MAX)

Flight Schools	Total Movements	Reduce extended downwind Flow (15 pts)	Reduce overflights of noise sensitive areas (10 pts)	Reduce flights during voluntary curfew (20 Pts)	Increase use of night pref. runway (5 pts)	Limit the number of touch-and-go's per flight (20 pts)	Integrate noise abat. into instructor training (20 pts)	Attend monthly noise CACNR meetings (10 pts)	Qty. noise abatent. meetings (-5 pts. per missed mtg)	Obtain UL94 Supp. Type Cert. (3 pts)	Install climb prop blades (3 pts)	Use flight sims for training (3 pts)	Participate in airport in charitable events (3 pts)
School B	27,308	10.2	5.8	15.4	4.3	15.4	20.0	4.0	0.0	3.0	0.4	2.0	3.0
School A	24,372	9.1	5.8	17.0	4.4	13.2	20.0	0.0	0.0	3.0	3.0	1.0	1.0
School C	12,797	10.7	6.6	18.2	3.3	15.0	20.0	0.0	0.0	0.8	2.5	1.0	2.0
School D	10,315	9.1	7.8	8.1	2.4	17.3	10.0	0.0	0.0	0.6	0.5	3.0	2.0
School E	2,299	11.5	7.6	17.5	4.0	18.8	20.0	0.0	0.0	2.1	3.0	3.0	3.0
School F	1,746	10.1	5.3	18.9	4.7	18.7	15.0	0.0	-5.0	0.0	3.0	2.0	3.0
School H	504	9.8	7.2	19.5	2.5	20.0	15.0	0.0	0.0	1.5	1.5	0.0	3.0
School G	55	15.0	9.0	20.0	5.0	20.0	20.0	0.0	0.0	0.0	3.0	0.0	3.0

3. YTD 2026 Dashboard Score Report:

4. Dashboard Metric Details:

Operational Category (70 Points)

Reduce Extended Downwind in South Flow (15 Points)

This metric evaluates how frequently operators fly within the Study Area located north of the airport. The Study Area is bounded by Peakview Avenue to the south, Peoria Street to the east, Bellevue Avenue to the north, and DTC Boulevard to the west. The system takes into account whether or not the extension was caused by Air Traffic Control Instruction. Scores are based on both the frequency of operations within the area, and the amount of time aircraft remain there. Increased activity and longer durations within the Study Area result in lower scores.

Reduce Overflights of Noise Sensitive Areas (10 Points)

This metric evaluates how frequently operators fly within the Noise Sensitive Areas identified in the Centennial Airport Voluntary Noise Abatement Guidelines. Scores are determined based on both the number of operations conducted within these areas and the amount of time aircraft remain there. Increased activity and longer durations within Noise Sensitive Areas result in lower scores.

Reduce Flights During Voluntary Curfew (20 Points)

This metric evaluates how frequently aircraft operators conduct operations during the voluntary curfew hours of 10:00 p.m. to 7:00 a.m. Increased activity during these hours results in lower scores.

Increased Use of Preferential Runway at Night (5 Points)

This metric evaluates the percentage of nighttime touch-and-go operations conducted on Runway 17L/35R between 10:00 p.m. and 7:00 a.m. Use of Runway 17L/35R helps keep pattern traffic over commercial and industrial areas, not residential, and is influenced by Air Traffic Control operations. A higher proportion of eligible nighttime touch-and-go operations conducted on Runway 17L/35R results in a higher score in this category.

Limit the Number of Touch and Goes Per Flight (20 Points)

This metric evaluates how consistently aircraft operators limit touch-and-go operations to no more than 10 per flight. A higher percentage of flights that adhere to this limit results in a higher score in this category.

4. Dashboard Metric Details:

Training & Outreach Category (30 Points)

Integrate Noise Abatement Info into Instructor Training (20 Points)

This metric evaluates how well operators integrate noise abatement information into instructor training. There are 4 components, each worth 5 points:

- Noise Abatement information included in Flight Instructor Standards Operations Procedures/Policies. (5 Points)
- Noise Abatement Information included in student pilot syllabi and/or noise abatement information provided to renter/member pilots, if applicable. (5 Points)
- Conduct additional noise abatement training at regular pilot/CFI meetings. (5 Points)
- Display noise abatement training material in training facilities in a conspicuous place. (Ex. Training Posters) (5 Points)

Attend Monthly CACNR Meetings (10 Points)

This metric evaluates participation in the Centennial Airport Community Noise Roundtable (CACNR) meetings, which are held 10 times each year. Operators may earn 1 point for each meeting attended when at least one representative from the organization is present.

Quarterly Noise Abatement Meetings (-5 Points per Missed Meeting)

Beginning January 1, 2025, under the Centennial Airport Minimum Standards each operator must have at least one representative in attendance at all quarterly Flight School Safety & Noise Abatement Meetings. Because participation is mandatory, a deduction of five (5) points will be applied to the operator's overall Fly Quiet Score for each meeting missed.

Bonus Category (Up to 10 Points)

Obtain UL94 Supplemental Type Certificates (3 Points)

This metric evaluates operators based on the percentage of their fleet equipped with Supplemental Type Certificates (STCs), specifically those enabling the use of UL94 unleaded aviation gasoline. Higher adoption of STC-modified aircraft within the fleet results in a higher score.

Install Climb Propellers (3 Points)

4. Dashboard Metric Details:

This metric evaluates operators based on the percentage of their fleet equipped with climb pitched or constant speed propellers, specifically propellers that provide a maximum climb rate. Higher adoption of the propellers on aircraft within the fleet results in a higher score.

Use of Flight Sims for Training (3 Points)

This metric evaluates the extent to which flight simulators are used in training programs. Flight schools may earn up to 3 points based on effective integration of simulator training. Scoring is determined by two primary factors: the total number of simulator hours reported and the size of the school's aircraft fleet. One base point is awarded for either owning a flight simulator or having full-time access to one. The remaining two points are awarded based on the total number of simulator hours conducted per quarter.

Participation in Airport Charitable Events (3 Points)

Operators can receive 1 point for attending/exhibiting/volunteering at any of the below events. Operators can receive 3 points maximum in this category. Events that occur multiple times per year can get operators a point each time they attend/participate.

- Centennial Airport FOD Walk
- Centennial Airport Runway 5k
- Centennial Airport Community Blood Drives
- Morgan Adams Concours de Elegance
- Challenge Air for Kids Fly Day
- Aero Angel Light Up the Sky Event
- Wings Over the Rockies Exploration of Flight Showcases
- EAA Chapter 301 Young Eagles

5. Notes & 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. If you have questions or concerns, please contact the Centennial Airport Noise office at 303-790-0598.



Noise Hotline: 303-790-4709

www.noise.centennialairport.com



Q3 2026 APA Flight School Safety & Noise Abatement Meeting Report

Fifteen representatives from various flight schools participated, contributing to a highly engaged and productive session.

FAA Air Traffic Presentation

The FAA provided operational and safety updates pertaining to APA and the greater Denver Airspace. The FAA also allowed for Q&A between controllers and pilots.

Noise Abatement Discussion

The noise abatement segment included several key updates and discussions:

- ACPAA Staff provide operational updates on Airport construction projects and other operational matters.
- Noise Abatement Guidelines: Participants were reminded of established noise abatement procedures.
- Airport Staff Reviewed recent areas of concern based off Community Complaints. This discussion focused on avoiding maneuvers and activity over both the Solstice/Chatfield Area as well as Louviers Area.
- Airport Staff reviewed the designated practice areas and discussed strategies for minimizing noise impact during training operations. This discussion highlighted the recommendation to not perform low altitude or ground reference maneuvers in the 3 Towers or Elizabeth Practice Boxes. The official recommendations of the CACNR were relayed to the flight schools for adoption.
- Q2 Noise Abatement Report Recap: A summary of noise trends, community feedback, and observations from the second quarter were presented.

Fly Quiet Dashboard Presentation

Airport staff presented the Q2 2026 Flight School Fly Quiet Dashboard scores. Scoring metrics and reminders of how scores are calculated were discussed:

- Data Review: 2nd Quarter scores (Q2 2026) were reviewed and discussed among and attendees.
- Dashboard access and program logistics were discussed.

Flight school representatives actively participated in the discussion, raising thoughtful questions and providing valuable feedback on potential implementation challenges and opportunities.

**REPORT TO THE CENTENNIAL AIRPORT
COMMUNITY NOISE ROUNDTABLE**

August 5, 2026

FROM: Zachary Gabehart – Senior Planner, Noise & Environmental

SUBJECT: 2026 2nd Quarter Land Use Referrals Report

RECOMMENDATION: Advisory

BACKGROUND: The land use referrals received for the 2nd Quarter of 2026:

- Received a total of 19 referrals during April 2026 through June 2026
- 7 were approved as submitted
- 10 were subject to comments
- 2 was not recommended

FINANCIAL DATA: N/A

REVIEW BY OTHERS: L. Wiarda, M. Fronapfel

PRESENTERS: Zachary Gabehart

MEMORANDUM

DATE July 6, 2026
TO ACPAA Board Members
FROM Zach Gabehart - Senior Planner
RE Land Use Review

The following is a list of Land Use Development referrals that have been reviewed by Centennial Airport staff from 4/1/2026 through 6/30/2026:

Date	Previously Referred	Development	Location	Referring Entity	Type	Reco
4/3/2026	☐	RidgeGate SW Village Filing No. 5	RidgeGate SW Village	City of Lone Tree	R	N
4/23/2026	☐	Advent Health Medical Office Building	Castle Pines Pkwy. & Canyon Forge Dr.	City of Castle Pines	C	S
5/1/2026	☐	Final Plat - The District Parcel 6	The Jones District	City of Centennial	R	S
5/1/2026	☐	QuikTrip Canyonsides Filing No. 4	Canyonsides Filing No. 4	City of Castle Pines	C	A
5/1/2026	☐	Site Plan - The District Parcel 6	The Jones District	City of Centennial	R	S
5/5/2026	☒	Denver Broncos Training Facility Expansion	Broncos Pkwy. & Potomac St.	Arapahoe County	C	S
5/12/2026	☐	Inverness #55 Replat	106 Inverness Dr. E	Arapahoe County	I/C	A
5/12/2026	☐	Playground Centennial Light Industrial	7020 S. Kenton St.	City of Centennial	I	S
5/26/2026	☒	Cabela Dr. Extension	Cabela Dr.	City of Lone Tree	I	A
5/26/2026	☒	Hillcamp Sub-Area Plan	W. of I-25 and S. of RidgeGate Pkwy.	City of Lone Tree	R	S
5/26/2026	☒	RidgeGate Rural Residential Planning Area	W. of I-25 and S. of RidgeGate Pkwy.	City of Lone Tree	R	S
5/26/2026	☒	Southridge Preserve PDD	W. of I-25 and S. of RidgeGate Pkwy.	City of Lone Tree	R	S
6/3/2026	☐	Inverness Filing No. 7 Drainage Easement Vacation	Inverness Business Park	Douglas County	I	A
6/5/2026	☐	AutoNation Costilla	9750 E. Costilla Ave.	City of Centennial	C	S
6/8/2026	☐	DCZR Training & Exercising of Non-Owned Animals	Douglas County Zoning Resolution	Douglas County	C/R	A
6/12/2026	☐	Canyonside Prelim No. 2 2nd Amed. And Canyonside Filing No. 1 3rd Amend.	Canyonsides Blvd. & Canyon Forge Dr.	City of Castle Pines	R	N
6/18/2026	☐	Cisco's Auto Paint & Collision	14824 E. Hinsdale Ave.	City of Centennial	I	A
6/25/2026	☐	CSQUARE Data Center Chillers & Generators	8534 Concord Dr.	Douglas County	I	S

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

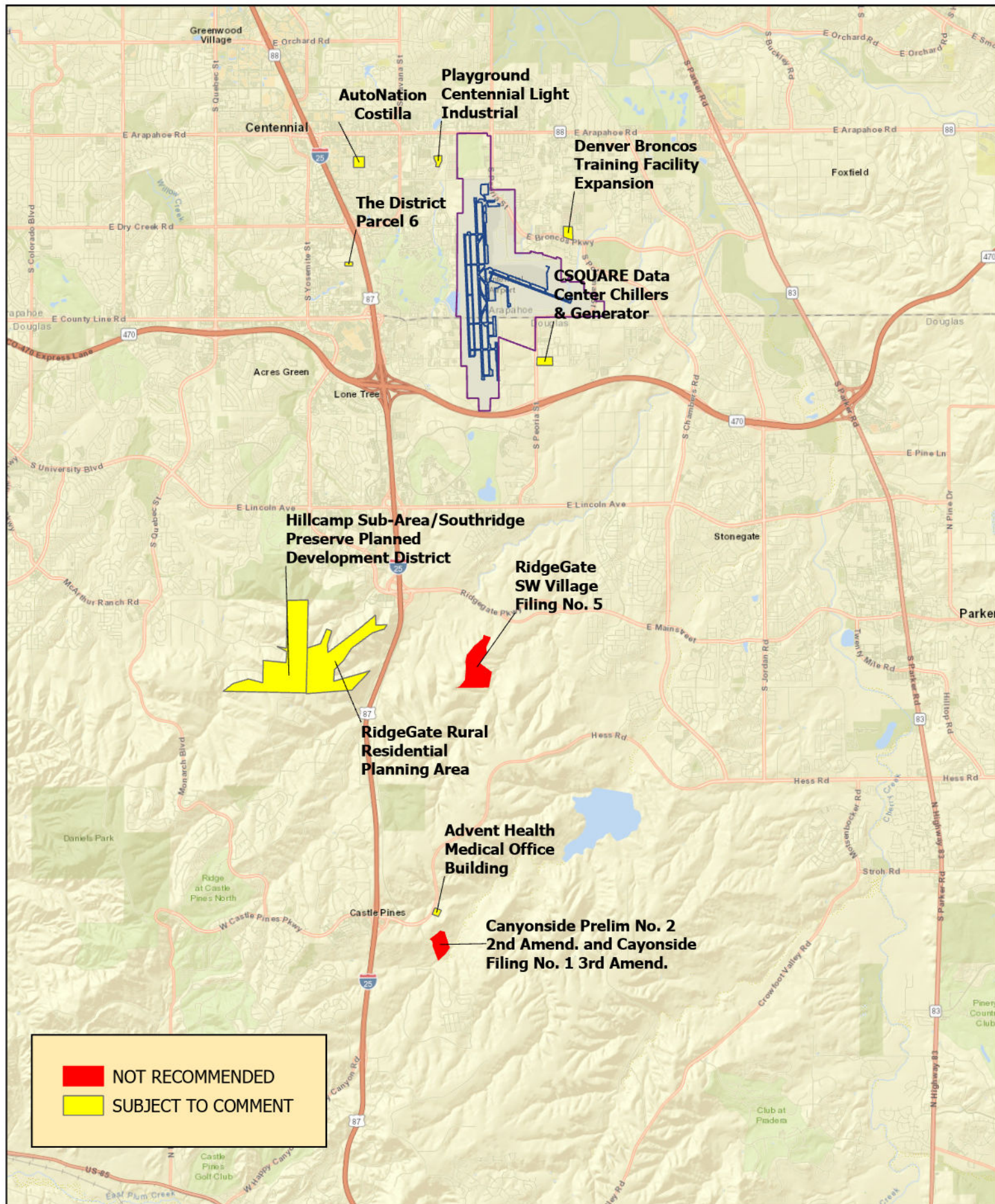
Recommendation
A = Approved as Submitted
S = Subject to Comment
N = Not Recommended

Date	Previously Referred	Development	Location	Referring Entity	Type	Reco
6/26/2026	☐	Garage Den Replat	7522 S. Potomac St.	City of Centennial	C	A

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

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

ACPAA Land Use Referral Recommendations Quarter 2 2026



Draft

Centennial Airport Community Noise Roundtable (CACNR)

August XX, 2026

To: Federal Aviation Administration Denver Flight Standards District Office (FSDO)

and

Flight School Managers Front Range Region

Subject: Safety, Noise, and Operational Concerns in the 3 Towers & Elizabeth Practice Areas

We are writing to bring forward concerns regarding aircraft operations in the 3 Towers and Elizabeth Practice Areas, as documented in the Centennial Airport Community Noise Roundtable (CACNR) Study Group committee's June 2026 response. These areas, located in uncontrolled airspace approximately ten miles southeast of Centennial Airport, have experienced increased overflights, low-altitude maneuvering, and aircraft noise impacts. The Elbert County community consists of established residential homes, schools and many new housing developments as it continues to grow rapidly. The Study Group was directed by CACNR look at these concerns and evaluate possible mitigation strategies to reduce the number of overflights and potential low flying aircraft in these practice areas.

The CACNR Study Group committee's report outlines several important contextual factors:

- The practice areas were originally developed by local flight schools and later charted by the Colorado Pilot's Association.
- The FAA's minimum safe altitude regulation (14 CFR 91.119) does not define "congested areas," leaving ambiguity for communities experiencing low-flying training aircraft.
- Airspace constraints—including Denver Class B airspace above, rising terrain to the west, and traffic congestion—limit relocation options for training boxes.

The Study Group acknowledged the seriousness of aircraft noise and repetitive training flights in these areas but determined that the practice areas fall outside their current scope of work. However, they provided several recommendations that CACNR believes warrant FAA review and coordinated adoption among regional flight schools.

Recommendations for FAA Consideration and Flight-School Implementation:

1. Avoid Ground Reference Maneuvers in the 3 Towers & Elizabeth Practice Areas Ground reference maneuvers typically require aircraft to descend to approximately 1,000 feet AGL, increasing noise and community impact. *CACNR recommends shifting these maneuvers to more Easterly practice areas. Several flight schools have already adopted this as mandatory in their SOPs.*

2. Standardize Altitudes for Entering and Exiting the Practice Areas A consistent altitude profile would maximize vertical separation between aircraft and nearby communities, reducing noise and improving predictability. This measure would also support safer transitions into and out of the practice areas. *CACNR has been in communication with a CFI operating out of KAPA with a suggested planned route to adopt.*

Request for Action

Given the FAA's regulatory authority and flight schools' operational influence, Centennial Airport Community Noise Roundtable respectfully request the following:

- **That the FAA review these recommendations and consider issuing guidance or safety notices encouraging their adoption.**
- **That flight-school managers evaluate their current training procedures and incorporate these recommendations into their standard operating practices.**
- **That both parties participate in continued dialogue with CACNR and affected communities to ensure that training operations remain safe, compliant, and considerate of evolving residential development.**

Centennial Airport Community Noise Roundtable will direct concerns about low-flying or erratic aircraft to the Denver FSDO, as it is the regulatory body responsible for determining potential violations of federal aviation regulations.

Centennial Airport Community Noise Roundtable will strengthen our coordination with the Colorado Pilot's Association. We feel that ongoing collaboration is needed to relay the community's concerns, refine training practices, and ensure that published practice-area guidance reflects current population patterns and safety considerations.

Thank you for your attention to this matter and for your continued commitment to aviation safety. CACNR is available to provide additional details or participate in any follow-up discussions that may assist in addressing these concerns.

Sincerely,

Pamela Thompson – Chair CACNR
Micheal Koscielniak – AOPA Representative CACNR

DRAFT

August XX, 2026

Department of Transportation
Federal Aviation Administration
Docket Operations M-30
1200 New Jersey Ave. SE
Room W12-140 West Building Ground Floor
Washington, DC 20590-0001

Subject: Comments Regarding Docket Number FAA-2026-6935 – Enabling Supersonic Flight Over Land

To Whom It May Concern,

The Centennial Airport Community Noise Roundtable (CACNR) appreciates the opportunity to provide comments on the Federal Aviation Administration's proposed rule, `Enabling.Supersonic.Flight.Over.Land`. CACNR supports aviation innovation but believes any regulatory framework for overland supersonic operations must place strong emphasis on community noise impacts, meaningful public engagement, and enforceable mitigation measures.

From CACNR's perspective, the proposed rule should more clearly explain how the FAA will evaluate and mitigate noise from supersonic aircraft, including cumulative exposure from repeated low-boom events and impacts near airports during arrivals, departures, and terminal-area operations. CACNR respectfully requests that the FAA address the following priorities before authorizing routine commercial overland supersonic service:

- Require additional research on community response to repeated low-boom operations, including annoyance, sleep disturbance, and recurring impacts, before approving routine commercial service.
- Protect existing airport noise compatibility efforts by ensuring airports with Part 150 programs or community noise roundtables do not experience increased exposure without environmental review, public notice and local coordination.
- Establish clear notification and coordination procedures for affected airports, local governments, and airport noise advisory groups before approving operations that may affect metropolitan communities.
- Clarify how compliance with the proposed noise standard will be verified, how operators will be audited, how exceedances will be investigated, and what enforcement actions will apply for repeated violations.
- Evaluate cumulative noise exposure from multiple daily operations rather than relying only on individual-event compliance.

- Commit to additional public notice and comment before adopting future landing, takeoff, operational, or airport-related standards for supersonic aircraft.

In summary, CACNR believes the FAA should not move forward with routine overland supersonic operations until it has fully evaluated community noise impacts, established transparent public-notice and coordination requirements, and adopted clear, enforceable noise mitigation standards that protect residents and preserve existing airport noise compatibility programs.

Thank you for considering CACNR's comments. We look forward to continued participation as this regulatory framework develops.

Respectfully,

Pamela Thompson
Chair - Centennial Airport Community Noise Roundtable



CENTENNIAL AIRPORT
ARAPAHOE COUNTY PUBLIC AIRPORT AUTHORITY

7565 South Peoria Street, Unit D9
Englewood, Colorado 80112
main: 303.790.0598
fax: 303.790.2129
www.centennialairport.com

July 30, 2026

Department of Transportation
Federal Aviation Administration
Docket Operations M-30
1200 New Jersey Ave. SE
Room W12-140 West Building Ground Floor
Washington, DC 20590-0001

Subject: Comments Regarding Docket Number: FAA-2026-6935 – Enabling Supersonic Flight Over Land

To Whom It May Concern,

The Arapahoe County Public Airport Authority (ACPAA), owner and operator of Centennial Airport, has reviewed the Notice of Public Meeting and Request for Comments regarding the proposed rule, *Enabling Supersonic Flight Over Land*. We appreciate the opportunity to participate in the rulemaking process and commend the efforts to engage the public and aviation stakeholders as these policies are evaluated and updated. While we recognize the importance of fostering innovation and advancing aviation through initiatives such as this, we have identified several areas where the proposed rule would benefit from additional clarification and refinement.

Although the proposed rule addresses noise considerations, the ACPAA believes the final rule should more clearly define how the impacts of supersonic operations will be evaluated and mitigated. It is essential that the Federal Aviation Administration consider the full operational impacts of supersonic flight, not only during the en route phase, but also during arrival, departure, and other operations within the terminal area surrounding airports. The ACPAA respectfully submits the following concerns and recommendations for consideration as the rulemaking process moves forward:

- The FAA should supplement the record with additional research on community response to repeated low-boom operations before authorizing routine commercial overland supersonic operations. Existing technical data regarding overpressure should be complemented by human response studies evaluating annoyance, sleep disturbance, and cumulative impacts. (i.e. the NASA X-59 Study)
- Airports and their surrounding communities should not experience increased noise exposure without additional environmental review and coordination.
- Prior to approving routine operations affecting metropolitan areas, FAA should establish procedures for notifying affected airports, local governments, and airport noise advisory committees.
- Clarify enforcement; the NPRM should explain:
 - how FAA will verify compliance with the 0.11 psf standard,
 - how often operators will be audited,
 - how exceedances will be investigated, and
 - what enforcement actions will occur after repeated violations.

Connecting People, Places & Product

- While individual sonic boom events may comply with the proposed standard, the FAA should evaluate cumulative exposure from multiple daily operations and their effect on community acceptance.
- The FAA should clarify how future approvals will satisfy applicable environmental review requirements and how cumulative community noise impacts will be evaluated for airports serving supersonic aircraft.
- The FAA should establish a formal coordination process with airport sponsors before approving routine commercial supersonic operations serving those airports.
- Because this NPRM is only the first phase of a broader regulatory framework, the FAA should commit to additional public notice and comment before adopting final landing, takeoff, operational, or airport-related standards. (including airport sponsor coordination)

Thank you for considering the ACPAA's comments as you move forward with this rulemaking. We support the continued advancement of aviation technology and recognize the potential benefits of supersonic flight; however, those advancements must be balanced with meaningful community engagement, environmental stewardship, and coordination with affected airport sponsors. We respectfully encourage the FAA to address the concerns outlined above to ensure that any future implementation of routine commercial supersonic operations is conducted in a manner that protects surrounding communities, preserves existing noise compatibility efforts, and maintains transparency throughout the regulatory process. We appreciate the opportunity to provide input and look forward to continued engagement as this regulatory framework evolves.

Respectfully,



Michael Fronapfel
Executive Director/CEO
Arapahoe County Public Airport Authority

\$100 million or more in any one-year. When such a statement is needed for a rule, section 205 of the UMRA generally requires a Federal Agency to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, more cost-effective, or least burdensome alternative that achieves the objectives of the rule.

This rule contains no Federal mandates (under the regulatory provisions of title II of the UMRA) for State, local, and tribal Governments or for the private sector. Therefore, this rule is not subject to the requirements of sections 202 and 205 of the UMRA.

USDA Non-Discrimination Statement

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

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To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at <https://www.usda.gov/sites/default/files/documents/ad-3027.pdf> and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue SW, Mail Stop 9410, Washington, DC 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

List of Subjects in 7 CFR Part 3560

Accounting, Administrative practice and procedure, Conflicts of interest, Government property management, Grant programs—housing and community development, Insurance, Loan programs—agriculture, Loan programs—housing and community development, Low and moderate-income housing, Migrant labor, Mortgages, Nonprofit organizations, Public housing, Rent-subsidies, Reporting and recordkeeping requirements, Rural areas.

For the reasons discussed in the preamble, the Agency is proposing to amend 7 CFR part 3560 as follows:

PART 3560—DIRECT MULTI-FAMILY HOUSING LOANS AND GRANTS

■ 1. The authority citation for part 3560 continues to read as follows:

Authority: 42 U.S.C. 1480.

Subpart B—Direct Loan and Grant Origination

■ 2. Amend 7 CFR 3560.73 by revising paragraph (a) to read as follows:

§ 3560.73 Subsequent loans.

(a) *Applicability.* The Agency may make a subsequent loan to a borrower to acquire, complete, improve, repair, or make modifications to MFH initially financed by the Agency or for equity for preservation purposes. Loan requests to add units to comply with accessibility requirements may be processed as a subsequent loan; however, loan requests to add units to meet market demand will be processed as an initial loan request and must compete under the NOFO.

* * * * *

George Kelly,

Administrator, Rural Housing Service.

[FR Doc. 2026-13455 Filed 7-1-26; 8:45 am]

BILLING CODE 3410-XV-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 1 and 91

[Docket No.: FAA-2026-6935; Notice No. 26-07]

RIN 2120-AM15

Enabling Supersonic Overland Flight

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This proposal would advance the United States' leadership in next-generation aviation by replacing the longstanding prohibition on civil supersonic flight over land with a modern, performance-based regulatory framework. Consistent with national policy set forth by the Executive Order of June 6, 2025, *Leading the World in Supersonic Flight*, this action would enable the safe, efficient, and commercially viable operation of civil supersonic aircraft in the United States. Current regulations prohibit flight operations of civil aircraft at a true flight Mach number greater than 1 in the U.S., except under the conditions and limitations of an operation-specific authorization from the Administrator, to protect the public from sonic boom. FAA has determined the general ban on civil supersonic flight is outdated and no longer appropriate due to advancements in technology, flight techniques that prevent sonic booms from reaching the surface, and increased interest in civil supersonic flight. FAA proposes to repeal this outdated and unnecessary prohibition and establish a corresponding interim noise-based certification standard to allow supersonic flights without an operation-specific special authorization clearing the way for next-generation supersonic flight. This rule removes regulatory barriers, provides clear pathways for testing and early commercial operations, and positions the United States to serve as the leader in setting global standards for supersonic flight. These actions will ensure that the United States leads the world in the safe, lawful, and rapid development and deployment of next-generation supersonic aviation.

DATES: Send comments on or before August 17, 2026.

ADDRESSES: Send comments identified by docket number FAA-2026-6935 using any of the following methods:

- *Federal eRulemaking Portal:* Go to www.regulations.gov and follow the online instructions for sending your comments electronically. As required by 5 U.S.C. 553(b)(4), a plain language summary of the rule is also available on the Federal eRulemaking Portal.
- *Mail:* Send comments to Docket Operations, M-30; U.S. Department of Transportation (DOT), 1200 New Jersey Avenue SE, Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.

- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey

Avenue SE, Washington, DC 20590 between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

• **Fax:** Fax comments to Docket

Operations at (202) 493-2251.

• **Privacy:** In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these comments, without edit, including any personal information the commenter provides, to www.regulations.gov, as described in the system of records notice (DOT/ALL-14 FDMS), which can be reviewed at www.dot.gov/privacy.

• **Docket:** Background documents or comments received may be read at www.regulations.gov at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC 20590 between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Sterling Wiggins, Office of Environment and Energy, Federal Aviation Administration, 800 Independence Avenue SW, Washington, DC 20591; telephone 202-267-0747; email 9-APL-Supersonic-Noise-Inquiries@faa.gov.

SUPPLEMENTARY INFORMATION:

I. Executive Summary

A. Overview of Proposed Rule

Originally enacted in 1973, FAA regulations prohibit flight operations of civil aircraft at a true flight Mach number greater than 1 (referred to as "civil supersonic flight") in the U.S., except as authorized by the Administrator, to protect the public from civil aircraft sonic boom.¹ Over time, advancements in scientific understanding, technology, and flight techniques have made it technologically practical to achieve supersonic flight without sonic booms reaching the surface, minimizing the impact of supersonic flight at the surface. In light of these advancements, Executive Order (E.O.) 14304, "Leading the World in Supersonic Flight," directed the Administrator to repeal the outdated regulatory "prohibition on overland supersonic flight" and establish an interim noise-based certification standard.²

As directed by E.O. 14304, FAA proposes to repeal the prohibition on civil supersonic flight in the U.S. contained in 14 CFR 91.817 by revising the current regulatory text in § 91.817 to provide an interim noise-based operating certification standard. Further, the proposed revision would

provide the conditions under which operators may engage in civil supersonic flight without the need for a special flight authorization (SFA) to exceed Mach 1, an operation-specific authorization that does not allow for civil supersonic flight outside of research and testing purposes in isolated test areas. To enable supersonic flight operations in the U.S., this proposal would require (1) the aircraft be operated such that sonic boom overpressure at the surface does not exceed 0.11 pound per square foot (psf), (2) the Administrator finds that the operator has shown, through measurement, modeling, or other methods, that primary and secondary (direct and indirect) sonic boom overpressure at the surface does not exceed 0.11 psf during operations, and (3) the aircraft be operated in compliance with any conditions and limitations issued by the Administrator.

The method the operator intends to use to demonstrate it can comply with this standard (flight test measurement equipment and procedures, modeling methodology, etc.) would require approval by FAA. This concept as well as the factors FAA may consider in reviewing the method of demonstrating compliance are discussed in Section IV.D. In addition, the docket for this NPRM will include a draft Advisory Circular for public comment, which provides guidance for one method operators may use to demonstrate compliance.

To receive a finding from the Administrator, this proposal would require the operator to demonstrate it has a means to comply with the standard proposed in this NPRM when conducting its operations. FAA does not propose prescriptive means of compliance in this proposal, and operators may propose a means of compliance they deem appropriate for consideration. Further, operators would be required to operate under any conditions and limitations issued by the Administrator. Once the Administrator makes the finding, the operator would not need to seek approval for individual flights or to specific operational areas, as is required under an SFA, as long as the finding remains valid and the operator operates within the conditions and limitations.

FAA proposes to maintain the provisions of current § 91.817(b) by relocating them to proposed § 91.817(c) to continue to allow for offshore civil supersonic flight operations with sonic boom that may reach the surface, provided the flight crew has information on the flight limitations to prevent sonic boom from reaching the U.S.

FAA also proposes to amend § 91.818 to conform with the proposed amendments to § 91.817. The SFA process would remain unchanged by this proposal and would continue to allow the Administrator to authorize civil supersonic flight in which sonic booms may reach the surface to allow for research, development, testing, and other operations in controlled areas. The proposal clarifies an SFA is not needed if an operator has a finding under § 91.817(a)(2) or flight limitations to ensure compliance with § 91.817(a).

Finally, FAA proposes to add definitions of "sonic boom," "primary sonic boom," and "secondary sonic boom" to § 1.1 General Definitions. Specifically, FAA proposes to define sonic boom as the acoustic event on the earth's surface that is a manifestation of the shock wave system generated by an aircraft when it flies at a speed greater than the speed of sound. The surface impacts are labeled as primary or secondary sonic boom(s).

Pursuant to the Executive Order, FAA was directed to finalize noise certification standards by June 6, 2027. This proposed rule, when finalized, would enable supersonic operations.

B. Summary of the Costs and Benefits

Benefits from the proposed rule would be derived from providing regulatory certainty that will encourage the advancement of new supersonic aircraft and technology. This would serve as a first step in enabling supersonic flights, while safeguarding the public from the adverse impacts of sonic booms.

The proposed rule would result in some costs and cost savings to operators and FAA. Operators would need to propose, and receive approval for, a method of compliance (flight test measurement equipment and procedures, modeling methodology, etc.) to demonstrate they can comply with the proposed standard. FAA anticipates that the first generation of aircraft seeking certification under this proposed rule would require flight testing to receive a finding from the Administrator to conduct civil supersonic flights. However, these operators are not expected to incur flight testing costs above those already required to obtain flight authorizations. Operators would also need a means of compliance, such as avionics or other technology, to demonstrate sonic boom overpressure will reach the surface with a force less than 0.11 psf during civil supersonic operations. FAA assumed that manufacturers would develop cost-effective abatement solutions since the rule is performance-based, which allows

manufacturers the flexibility to develop or continue developing their own means to comply. FAA is not able to estimate these costs and invites further comment on costs associated with conducting sonic boom abatement techniques in Section V.A. In addition, FAA estimates the proposed rule would save industry \$1,567,636 and FAA \$852,135 in flight authorization processing over the analysis period, totaling \$2,419,771.

II. Authority for This Rulemaking

FAA's authority to issue rules on aviation safety is found in Title 49 of the United States Code (49 U.S.C.). Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the FAA's authority. This proposal is issued under the authority described in Subtitle VII, Part A, Subpart III, Section 44715, Controlling aircraft noise and sonic boom. Under section 44715, FAA is charged with prescribing both standards to measure aircraft noise and sonic boom and regulations to control and abate aircraft noise and sonic boom. This proposal is within the scope of these authorities because it would revise regulations to enable civil supersonic flight provided sonic boom overpressure at the surface of the U.S. does not exceed 0.11 psf, and FAA authorizes the operator of the aircraft to conduct civil supersonic flight operations in the U.S.

In addition, E.O. 14304 directs the FAA Administrator to "take the necessary steps, including through rulemaking, to repeal the prohibition on overland supersonic flight in 14 CFR 91.817" and to establish an interim noise-based certification standard. It also directs FAA to make any necessary modifications to § 91.818. This proposal is within the scope of E.O. 14304 because it both removes the ban and establishes an interim noise-based certification standard.

III. Background

A. History of FAA Regulation of Sonic Booms

Key to the scope of this rule is how a sonic boom is created and the characteristics of sonic booms. Any aircraft that moves through the atmosphere at speeds exceeding the local speed of sound (Mach 1) creates a system of nearly instantaneous pressure changes known as shock waves along the length of the aircraft. The system of individual shock waves due to aircraft features propagates through the atmosphere shifting in space over a long-distance, ultimately coalescing into two compressions, one at the nose and

one at the tail, that form a sonic boom. When the energy from the shockwave reaches human ears, it is heard as the loud crack, or thunder-like, sonic boom.³

In 1973, FAA promulgated what is now § 91.817, which prohibited supersonic flight in the U.S. except when operating under the conditions and limitations of an SFA issued by the Administrator.⁴ In the 1973 final rule, FAA stated that due to the limits of sonic boom monitoring and control technology at that time, a prohibition was needed to protect the public from sonic boom of any given intensity and ensure effective control of sonic boom at the source. As such, the regulation prohibited supersonic flight by preventing operations of a civil aircraft at a true flight Mach number greater than 1. This effectively eliminated the potential for sonic boom from civil aircraft operations in the U.S. unless authorized under an SFA. In establishing this requirement, FAA noted the intent of the prohibition was not to prohibit supersonic speed per se, but to protect the public from sonic booms that may reach the surface given researchers at the time were unable to identify an acceptable level of sonic boom exposure. FAA also said that in the future it may be possible to conduct supersonic flights without a sonic boom reaching the surface. One of the reasons cited for providing the SFA process in § 91.818 was to provide future aircraft the opportunity to demonstrate this possibility.^{5,6}

In a 1978 rule, FAA established additional requirements for supersonic airplanes, including requiring supersonic aircraft (except for Concorde aircraft with flight time prior to 1980) to meet Stage 2 landing and takeoff (LTO) noise limits.⁷ LTO regulations prescribe aircraft noise limits and assess aircraft noise levels against those limits based on measurement criteria that simulate operations at airports. In addition, the 1978 rule added what is now § 91.817(b) to the regulation, which prohibits civil supersonic airplanes that are outside the U.S. from causing sonic booms to reach the surface within the U.S. when flying to or from U.S. airports even if they are outside the U.S. at the time. The stated purpose of this provision was to protect the coastal areas from sonic booms generated by aircraft achieving supersonic speeds outside the U.S.^{8,9} The 1978 final rule did not mandate LTO noise standards for future supersonic aircraft because of the lack of adequate technical information, but FAA conveyed that it would not certificate any supersonic aircraft that failed to meet the noise standards

applicable to subsonic airplanes at the time of type certification.¹⁰

FAA expressed interest in amending its noise standard regulations in 1986 to account for future supersonic aircraft through the issuance of an advance notice of proposed rulemaking (ANPRM) seeking information on propulsion systems for supersonic aircraft, potential methods of noise certification, and the "noise/performance/cost tradeoffs" of supersonic technology.¹¹ Following the ANPRM, in 1990, FAA issued an NPRM to expand the applicability of part 36 subsonic LTO noise standards to supersonic aircraft and set noise limits for these aircraft at the same level as subsonic aircraft.¹² FAA withdrew this NPRM in 1994, stating further investigation and research were necessary before developing a final rule.¹³ On the same day the agency withdrew the NPRM, FAA published a policy statement reiterating the agency's commitment to aviation's longstanding efforts to achieve increasingly effective noise abatement at its source. The policy also stated that any future supersonic transport airplane shall produce no greater noise impact on a community than a subsonic airplane certified to Stage 3 noise limits, the then-required limits for all newly certificated aircraft.^{14,15} FAA also indicated it would give consideration, to the extent possible, to the unique operational flight characteristics of future supersonic designs in developing provisions for the noise certification of those airplanes. FAA subsequently updated this policy statement in 2008 to state FAA's intent that future supersonic transport aircraft comply with the same noise limits as subsonic aircraft.^{16,17} At that time, FAA acknowledged there was still interest in supersonic aircraft technology.

Congressional interest in the potential operation of supersonic aircraft in the U.S. continued. Section 181 of the FAA Reauthorization Act of 2018¹⁸ directed the Administrator to exercise leadership in the creation of Federal and international policies, regulations, and standards relating to the certification and safe and efficient operation of civil supersonic aircraft.¹⁹ FAA's first step in response to Section 181, and to update and modify civil supersonic regulatory framework, was modernizing the SFA process. On January 15, 2021, FAA issued a final rule to streamline the application procedure for SFAs by clarifying the necessary information required by the FAA.²⁰ This rule provided clear application criteria for the public and identified the appropriate office to direct applications

and questions in order to streamline the application and processing of supersonic SFAs. Section 181 also directed the Administrator to revise part 36 to address LTO noise requirements for supersonic aircraft and incorporate necessary definitions and noise testing requirements. On April 13, 2020, FAA issued an NPRM pursuant to the Act's requirements to extend applicability of part 36 to provide LTO noise requirements for supersonic aircraft.²¹ FAA's proposed standard would have only applied to aircraft seeking type certification in the U.S., as the International Civil Aviation Organization (ICAO) had yet to adopt a standard for civil supersonic aircraft (takeoff, landing, or en route). The comment period for the 2020 NPRM closed on July 13, 2020. After issuance of the 2020 NPRM, FAA shifted focus from developing unilateral standards for the United States to working through ICAO to develop and shape a globally harmonized standard. The 2020 NPRM issued for the rulemaking required by Section 181 of the FAA Reauthorization Act of 2018 is separate and distinct from the rule FAA is proposing in this notice, which does not address LTO noise certification. Since the 2020 NPRM, FAA has continued to work with applicants on SFA requests and to work internationally with ICAO to address noise issues associated with supersonic aircraft.

B. FAA's Current Efforts To Address Sonic Boom

The issuance of E.O. 14304 has accelerated FAA's efforts regarding supersonic aircraft. The E.O. directs FAA to take a series of actions to further enable the growth and development of the supersonic industry. Importantly, E.O. 14304 directs a series of rulemakings and other actions to remove regulatory barriers that, as E.O. 14304 describes, hinder the advancement of supersonic aviation technologies. E.O. 14304 directs the Administrator "to repeal the prohibition on supersonic overland flight," establish interim and final noise-based standards (takeoff, landing, and en route) for supersonic aircraft, coordinate with other executive branch agencies to advance supersonic research and development, and promote international engagement and harmonization on civil supersonic flight regulations.

The first rulemaking, as directed by E.O. 14304 in § 2(a), is "to repeal the prohibition on overland supersonic flight" in § 91.817, modify § 91.818 as necessary, and establish an interim noise-based certification standard consistent with applicable law. This

NPRM is intended as the first step to address this mandate.

Section 2(a) of E.O. 14304 also directs the Administrator to take immediate steps to repeal §§ 91.819 and 91.821. Both provisions were promulgated in the 1970s to address LTO noise issues related to the Concorde aircraft. As these provisions are closely aligned with a second rulemaking directed by § 2(b) of E.O. 14304, FAA intends to address the repeal of these provisions in that future rulemaking.

Section 2(b) of E.O. 14304 directs FAA, through rulemaking, to establish a final standard for supersonic aircraft noise certification under part 36 and amend § 91.817 to incorporate this standard. The future rule to implement § 2(b) of E.O. 14304 would define an acceptable noise limit for LTO and en route supersonic operations based on operational testing and research, development, testing, and evaluation data and consider community acceptability, economic reasonableness, and technological feasibility. The future rule to implement § 2(b) of E.O. 14304 would also specify a process for periodic review and update of the rule to reflect future advances in aircraft noise reduction technology. If this rule is finalized, it would constitute the final en route sonic boom and LTO noise standards for supersonic aircraft.

Collectively, these efforts are intended to help support the development of the supersonic industry, give regulatory certainty to aircraft manufacturers and other stakeholders, and provide the benefits of supersonic flight to the public. This proposed repeal of the prohibition on overland flight of civil supersonic aircraft and the establishment of an interim noise-based certification standard is a critical first step.

C. Statement of the Problem

Manufacturers have demonstrated it is possible to fly supersonic aircraft without sonic booms reaching the surface by using sonic boom abatement techniques, making complete prohibition on civil supersonic flight outside of test areas no longer appropriate, and an unnecessary restraint on the growth of the U.S. aviation sector. One of these techniques, Mach cutoff operations (MCO), uses a combination of operational factors (e.g., altitude and Mach speed) and specific atmospheric conditions along the flight path of the aircraft to refract sonic booms within the atmosphere. This refraction prevents potential sonic boom with an overpressure greater than 0.11 psf from reaching the surface. Manufacturers have stated it may be

possible with avionics technologies to scale MCO such that operators can use the technique to operate at supersonic speeds and abate sonic booms at the surface. This technique was demonstrated by Boom Supersonic on February 10, 2025, under an SFA authorized by the Administrator, and by the National Aeronautics and Space Administration (NASA) during its Farfield Investigation of No Boom Threshold (FaINT) research project.^{22 23}

Current FAA regulations prohibit civil supersonic flight in the U.S., except under an SFA issued by the Administrator, regardless of whether the sonic booms reach the surface. SFAs are issued by the Administrator for an individual aircraft and for operation within a specific, limited operational area for aircraft research and testing. This speed-based restriction, with only limited exceptions with an SFA, limits the scalability and types of operations that aircraft capable of supersonic flight can conduct. This is true even if the aircraft's performance capabilities enable operation in a manner that obviates the purpose of the prohibition.

FAA held eight listening sessions with original equipment manufacturers and trade association stakeholders between August 11, 2025, and August 28, 2025.²⁴ Stakeholders supported a safe incremental transition from the current speed-based prohibition on sonic booms to a performance-based operational standard preventing sonic booms from reaching the surface. Stakeholders also supported continued domestic and international U.S. leadership in the development of standards for supersonic aircraft.

Under 49 U.S.C. 44715, the Administrator is authorized to regulate aircraft noise and sonic booms and given a statutory duty to protect public health and welfare from aircraft noise and sonic booms. In addition, the Administrator must consider whether a regulation promulgated under § 44715 is economically reasonable, technologically practicable, and appropriate for the applicable aircraft. FAA also has a statutory duty to consider whether a regulation is consistent with the highest degree of safety and carries out the purposes of § 44715. As part of its obligations under § 44715, FAA has consulted with the Environmental Protection Agency (EPA) on this proposal.

Considering the advancements in technology and general feedback from stakeholders, FAA is proposing to amend its regulations to repeal the prohibition on civil supersonic flight in the U.S. and allow the Administrator to authorize operators to conduct

supersonic flight in the U.S. without an SFA. Under this proposal, an operator would be able to conduct these flights in the U.S. if the operator: (1) operates in a manner that sonic boom overpressure at the surface does not exceed the proposed limit of 0.11 psf, (2) receives a finding from the Administrator, and (3) operates the aircraft in compliance with any FAA-issued conditions and limitations. The proposal would replace the prescriptive speed-based prohibition on civil supersonic flight in the U.S. with a performance-based standard. FAA considers this proposal consistent with its obligations under 49 U.S.C. 44715.

D. Scope of This Proposal

Consistent with the direction in § 2(a) of E.O. 14304, this proposal would repeal the prohibition on supersonic flight in the U.S., establish an interim en route noise-based operating certification standard for sonic boom by revising § 91.817, and modify § 91.818 as needed. To implement these changes fully, the rule also proposes definitions and specifies findings required by the Administrator to operate above Mach 1 in the U.S.

FAA recognizes this proposal is the first step of a multi-step regulatory process to enable the next generation of supersonic flight. Though this proposed rule would address some of the goals in E.O. 14304, future rulemakings will be necessary to enable civil supersonic flight fully in the U.S. Topics of future rulemakings may include: establishing LTO noise standards for supersonic aircraft, establishing technical standards for sonic boom abatement technology, and establishing other operational requirements for supersonic aircraft.

FAA is required to prescribe regulations under § 44715 prior to issuance of a type certificate for any aircraft. FAA has traditionally addressed this mandate for subsonic aircraft by prescribing LTO regulations in part 36. Whereas subsonic aircraft noise is primarily regulated based on their LTO noise profile, supersonic aircraft have the addition of an en route noise profile because sonic booms have the potential to produce adverse impacts on the public. This proposed regulation would address the en route noise profile of supersonic aircraft. As FAA intends to address LTO noise profile in future rulemaking, LTO noise standards are beyond the scope of this rulemaking.

Because LTO standards necessary to enable civil supersonic flight fully will be addressed in a future rulemaking, FAA does not anticipate receiving an application for a type certificate based

on this rulemaking alone. If FAA were to receive an application for a type certificate prior to promulgating the LTO standards and noise limits, FAA would propose a rule of particular applicability establishing LTO standards for the applicant's aircraft as required by § 181(f) of the FAA Reauthorization Act of 2018 to complete the noise certification for the applicant.^{25 26}

Supersonic flight using MCO may produce low-level noise on the ground that does not have all the characteristics of a sonic boom and are known as evanescent waves. These waves were measured and described by NASA as low "rumbling" noise at the level of background street noise. This proposal would permit evanescent waves on the ground with overpressures less than 0.11 psf and would prohibit any overpressures greater than 0.11 psf. Additional information on the rationale behind the selection of the 0.11 psf overpressure limit in this proposal can be found in Section IV.A. FAA may consider regulation of noise associated with supersonic flight, such as evanescent waves, in the future if the Administrator determines it is necessary to protect public health and welfare.

NASA has been investigating supersonic aircraft shaping to allow for supersonic flight without generating loud sonic booms. This research is being conducted under NASA's Quesst mission with planned flight campaigns of its X-59 aircraft.²⁷ This mission is designed to increase the understanding of low-boom technology and techniques, allow researchers to better understand the effects of sonic booms on communities, and gather data for correlating a noise limit that results in minimal noise. Though the Quesst mission holds the potential to reduce the adverse impact of sonic booms significantly at the surface, additional research is needed to assess the viability of implementing this technology in future commercial supersonic aircraft. Therefore, this proposed rule would not permit low-boom operations resulting in a sonic boom overpressure at the surface greater than 0.11 psf.

This proposed rule would provide a first step in enabling supersonic flight by repealing the general prohibition against civil supersonic flight in the U.S. while protecting public health and welfare from sonic boom by establishing an en route interim noise-based certification standard.

E. Related International Efforts

In 2020, FAA issued an NPRM to establish LTO standards for supersonic aircraft pursuant to the FAA Reauthorization Act of 2018 and based

on interest from industry in developing next generation supersonic aircraft.²⁸ This 2020 NPRM and industry interest led to ICAO discussions on development of a globally harmonized LTO standard for supersonic aircraft.²⁹ Because of these discussions, FAA's focus shifted to working through ICAO to develop and shape a globally harmonized standard rather than a U.S.-specific standard for civil supersonic aircraft. ICAO's Committee on Aviation Environmental Protection (CAEP) endorsed this standard in February 2025, which is currently undergoing final review within ICAO before final acceptance by the ICAO Council. FAA intends to consider this standard as the agency develops the future rulemaking directed by § 2(b) of E.O. 14304.

In addition to the LTO standard, ICAO plans to develop an en route low-boom noise standard. However, ICAO does not expect this standard to be complete until 2031.³⁰ Given this timetable and the current stage of development of low-boom civil supersonic aircraft, FAA does not consider it appropriate to wait for finalization of the ICAO en route low-boom standard. FAA's proposed performance-based en route standard will provide flexibility for industry to continue to develop technology while protecting the public from the adverse effects of sonic booms in the near-term. Should ICAO finalize an en route standard, FAA could address any complete en route low-boom noise standards from ICAO as part of a future rulemaking. Therefore, FAA is proposing a U.S.-specific en route interim noise-based certification standard. FAA continues to work through the ICAO CAEP and with member states to align regulatory approaches as directed by § 4(a) of E.O. 14304.

IV. Discussion of the Proposal

A. Repeal of the Prohibition on Civil Supersonic Flight in the U.S.

As described, the current regulations were enacted in 1973 to preclude civil supersonic flight in the U.S., unless the operator is operating under an SFA, due to concerns about potential adverse impacts of sonic boom to people on the surface. These concerns remain true today, and ongoing research is working to address the characterization of sonic booms and how to limit their impacts.^{31 32 33} E.O. 14304 also recognized the potential for adverse impacts on the surface from sonic booms in directing that FAA establish an interim noise standard while, at the same time, directing FAA to enable civil

supersonic flight in the U.S. To address these concerns in a manner that enables supersonic flight in the U.S., FAA proposes to repeal the general speed-based prohibition and replace it with a regulation that would allow “supersonic overland flight” if the operator meets three conditions. These conditions would be: (1) the operator meets the performance-based interim en route certification standard of no sonic boom overpressure greater than 0.11 psf reaching the surface; (2) after an operator demonstration, the operator receives a finding from the Administrator; and (3) the aircraft is operated in compliance with FAA-issued conditions and limitations.³⁴

i. Prohibition on Sonic Boom Reaching the Surface

Historically, the public has expressed concerns and a need for relief from sonic booms reaching the surface and their impact on public health. FAA conducted flight testing on the impact of sonic booms on the public in the 1960s and 1970s. Significant public backlash from those impacted by sonic booms during this testing resulted in the prohibition of civil supersonic flight over land that exists today, and the restrictions on Concorde operations in § 91.819.³⁵ To relieve the concerns that led to the initial prohibition on civil supersonic flight in the U.S. as next-generation supersonic aircraft prepare to enter the National Airspace System (NAS), FAA drew on the best available data to propose an overpressure limit that data indicated sufficiently abated sonic boom at the surface. Based on this data, FAA determined operators should be required to ensure primary and secondary (including direct and indirect) sonic boom overpressure at the surface does not exceed 0.11 psf, as proposed in § 91.817(a)(2)(i).

In developing the sonic boom noise levels in proposed § 91.817(a)(2)(i), FAA considered the NASA study entitled “Mach Cutoff Analysis and Results from NASA’s Farfield Investigation of No-boom Thresholds (FaINT)”³⁶ and a 1980 DOT Transportation Systems Center, now the John A. Volpe National Transportation Systems Center (“NTSC” or “Volpe”), study “Detection and Assessment of Secondary Sonic Booms in New England.”³⁷ These studies followed a similar approach of examining sonic boom noise measures at the surface and quantified several distinct types of sonic booms from supersonic aircraft as overpressures in psf. The NASA study (*i.e.*, FaINT) documented primary sonic booms that were abated operationally when the aircraft was flown within a constrained

MCO flight airspeed-altitude envelope and under non-anomalous meteorological conditions. The FaINT study demonstrated a successfully abated sonic boom by measuring the resulting noise (evanescent waves measured upon successful abatement of the primary sonic boom) and quantifying the residual surface pressure. In other words, successful abatement of a sonic boom was determined when the only remaining noise related to the sonic boom was noise no longer characteristic of a sonic boom (*e.g.*, evanescent waves).

To further include the wider spectrum of residual pressure data from primary sonic boom impacted by atmospheric propagation effects, FAA included data from the NTSC study into the analysis of sonic boom impact at the surface. In this study, the NTSC examined data on sonic booms generated by Concorde aircraft and identified noise that the NTSC study termed as “secondary sonic booms.” These secondary sonic booms were classified as two types based on their refraction or reflection path—type 1 (which FAA defines as direct in proposed § 1.1) initially traveled upward before refracting off of the atmosphere and type 2 (which FAA defines as indirect in proposed § 1.1) initially traveled downward and were reflected off the surface, then traveled upward to the thermosphere before being refracted downward again to the ground. Utilizing microphone arrays and vibration measuring systems, NTSC recorded instances of peak-to-peak overpressure changes at surface-level. After logging these pressure changes into a database, NTSC was able to correlate these pressure changes with Concorde flights near the test areas utilizing air carrier schedules and FAA radar track data.

FAA referenced both the NTSC and NASA study data to establish a level for purposes of this NPRM (see proposed § 91.817(a)(1)) where MCO was successful and only evanescent waves and unheard secondary sonic booms (attenuated secondary sonic booms) existed. Based on the FaINT and NTSC datasets, FAA determined the appropriate demarcation threshold where sonic booms were sufficiently abated at the surface was at an overpressure of 0.11 psf using MCO. Consistent with the Administrator’s duty to protect the public health from sonic boom, and due to the lack of integrated metric data available to determine a tolerable level of sonic boom at the surface, FAA determined the level where sonic booms were sufficiently abated by MCO was the appropriate overpressure limit to

propose in this NPRM. FAA seeks comment on this noise standard to protect the public, including any supporting data for an overpressure limit other than 0.11 psf.

While FAA is proposing a standard, FAA is providing flexibility to operators regarding methods of compliance to meet the standard. The method of compliance is how the noise would be assessed (*e.g.*, measured) at the surface to ensure that sonic boom overpressure does not exceed the limit in this standard. This proposal would require FAA to approve the method of compliance, rather than mandating a method of compliance as FAA does for subsonic aircraft. This method can vary from those contained in part 36.

FAA expects to consider the following information when approving a proposed method of compliance: (1) whether data used to develop the proposed method of compliance is based on, or validated by, physical noise measurement; (2) whether the proposed method of compliance is technologically practicable and appropriate for the aircraft to which it would apply; (3) whether the proposed method of compliance considers developments in noise measurement and other associated fields (such as research programs into quantification and control of aircraft noise); (4) whether the proposed method of compliance is based on an industry-consensus standard; and (5) whether the proposed method of compliance clearly documents all assumptions used in the development, validation, results, and limitations. These factors are similar to those factors FAA stated it would consider when approving voluntary noise consensus standards in the Modernization of Special Airworthiness Certification final rule,³⁸ as well as the factors FAA proposed the agency would consider when approving an unmanned aircraft system (UAS) noise consensus standard in proposed part 108.³⁹ These factors represent best practices when evaluating industry-developed methods of compliance. FAA has proposed a draft Advisory Circular, which will be included in the docket for this NPRM, describing collection methods that fulfill the above criteria; however, the collection methods in the draft Advisory Circular are guidance and would not be mandatory. As supersonic flight without sonic boom reaching the ground is a new operational concept, FAA expects that flight testing will be the primary method of demonstrating compliance for the first-generation of aircraft seeking to comply with the proposed standard. As the data pool grows and develops based on flight testing, applicants may develop reusable

mathematical models and analyses, validated through test data, that can confidently estimate the sonic boom overpressure at the surface without the need for additional flight testing. This proposal would require that an operator make certain demonstrations of compliance to the FAA, rather than complying in an operational sense.

By prescribing sonic boom noise limits and not specific noise data collection requirements to demonstrate compliance, FAA intends to provide flexibility for the development of future collection methods that may be more novel or appropriate for supersonic aircraft. FAA invites comments on this approach to sonic boom methods of compliance, as well as on the draft Advisory Circular. FAA also requests comment on whether any material in the draft Advisory Circular should be included in the regulation.

ii. Finding by the Administrator To Conduct Operations and Conditions and Limitations Associated With the Finding

As previously discussed, the Administrator has a duty to protect the public health from sonic booms and ensure safe operations. In addition, the technology to enable the ability to operate civil aircraft at supersonic speeds on a routine and consistent basis without sonic booms reaching the surface remains new and novel. As such, to comply with the Administrator's duty to protect the public health from sonic booms, FAA proposes in § 91.817(a)(2) that it would make a finding, after an operator demonstration, that the operation does not exceed the stated limit and the operator has a means to comply with the limit. This process ensures the operator is properly equipped and capable of consistently operating in a manner that ensures that surface sonic boom overpressure at the surface does not exceed 0.11 psf.

FAA proposes in § 91.817(a)(2) that the operator demonstrate, and FAA find, that: (1) through a method approved by FAA, surface sonic boom overpressure does not exceed 0.11 psf for primary and secondary sonic boom levels at the surface; and (2) the operator has a means to ensure sonic boom overpressure in excess of 0.11 psf does not reach the surface. This finding would remain valid as long as the operator meets the criteria that are the basis of the finding.

Using the approved methods of demonstration (see discussion in Section IV.A.i.), surface sonic booms would be measured as sound overpressure. As proposed,

measurement of each of the following at the surface could not exceed an overpressure of 0.11 psf: primary sonic boom levels, secondary direct sonic boom levels, and secondary indirect sonic boom levels.

In identifying other factors appropriate as the basis of the Administrator's finding, FAA reviewed the criteria for SFA in current § 91.818 to see if any were applicable. Though not the same in context, FAA determined the concepts in § 91.818(a)(8)(iii), regarding establishing a means of compliance to reduce or eliminate the effects of sonic boom on the surface, would be helpful in evaluating a requested operation. The proposed addition of § 91.817(a)(2)(ii) is consistent with this approach. Whereas an operator's method of compliance is a showing to FAA through measurement, modeling, or other methods that the operator can achieve the conditions of the proposed noise standard in a demonstration environment, a means of compliance is how the operator intends to ensure that no overpressure over 0.11 psf reaches the surface in an operational scenario. Proposed § 91.817(a)(2)(ii) would allow an operator to propose its means of compliance with the standard in proposed § 91.817(a)(1) along the flight path on an operational basis. Means that the operator may use to comply with the proposal could be generic, as in MCO, or they could be a proprietary method developed by a stakeholder. Depending on the means of compliance, FAA would issue appropriate conditions or limitations (see proposed § 91.817(a)(3)).

FAA is considering whether to incorporate a regulatory requirement that the applicant should provide specific information to FAA regarding its means of compliance. This specific information would define the operational conditions and limitations to ensure the sonic boom overpressure does not exceed 0.11 psf. For example, if proposing to conduct MCO, the operator would need to provide information defining its weather source, the model used to predict boom propagation, and how it would ensure the airspeed during an operation would not exceed the maximum speed that supports MCO, or other controlling factors that ensure successful MCO. FAA invites comment on whether operators should be required to submit this or other information to assist the Administrator with evaluating a request to conduct supersonic flight in the U.S.

Based on FAA's knowledge of the industry and what it has heard from stakeholders, FAA anticipates operators may mitigate the impacts of sonic boom

on the surface either by modifying the aircraft through on-board technology or through directions by a dispatch command center. FAA expects that initial operations under the proposed rule will be based on MCO. As described previously, MCO is a flight technique where the sonic pressure wave is refracted upward through the atmosphere away from the ground, resulting in lower intensity evanescent waves reaching the ground. To operate consistently in MCO, the operator must be able to determine the optimal speed and altitude based on the non-anomalous, atmospheric conditions along the intended route of flight during flight planning and control the speed and route of flight during operation to ensure sonic boom noise levels remain within the sonic overpressure requirement. NASA has released a model, PCBoom,⁴⁰ which is a sonic boom propagation suite of programs with a proven record of utility in predicting MCO conditions when actual atmospheric conditions are known. Flight demonstrations of MCO by NASA as a part of the FaINT study used atmospheric sounding data in the specific area of the intended flight test to provide necessary weather information.⁴¹ When conducting MCO, an operator must account for the uncertainty in the terrain, actual weather, and atmospheric parameters that ensure MCO are achievable along the flight path. The operator may also need to monitor certain weather conditions that are observable, such as the winds in real-time along the aircraft trajectory.

The application to compute the maximum allowable speed for the route of flight and environmental conditions would need to be validated by the operator, through comparison with previously validated tools (such as PCBoom) or through specific flight testing designed to validate the model.

In the future, industry may develop aircraft that abate sonic boom to the point where only sonic boom overpressures below 0.11 psf reach the surface through aircraft design and operating configuration management systems. An aircraft with a low-boom design, such as the previously discussed X-59 aircraft, prevent the shock waves emanating from various aircraft surfaces from coalescing to form a single overpressure wave. The atmospheric conditions also play a key role in preventing the waves from coalescing between the aircraft and the ground. The operator would likely rely on models provided by the aircraft type certificate holder, and on aircraft systems that control the aircraft surfaces

in real time, to manage the development of pressure waves at the airframe. Under the existing systems and equipment regulations (*i.e.*, 14 CFR part 25 subpart F), the applicant for an airplane type certificate would demonstrate that the systems governing the flight controls perform their intended function (including the management of pressure wave generation) and do not create a hazard upon failure. The operator of such an aircraft could propose these design and operating configuration management systems as its means of compliance with the levels in proposed § 91.817(a)(2)(i). Currently, FAA and industry are building experience with these aircraft. NASA has developed the X-59 and plans to conduct flight testing over the next few years, which will further inform the specific aerodynamic design and associated onboard systems appropriate for this potential means of compliance.

In proposed § 91.817(a)(3), once established, the operator would be required to comply with FAA-issued conditions and limitations. FAA anticipates conditions and limitations would be limited to those related to meeting the operational limit in § 91.817(a)(1) and the means of compliance in § 91.817(a)(2)(ii). The conditions and limitations related to the means of compliance could identify the type of aircraft and include any specific equipment, parameters, instructions, or other items that are necessary to ensure the operator meets the requirements in § 91.817(a)(1) and (2)(i). FAA does not intend that these conditions and limitations would address operation-by-operation specific items, such as geographical limitations, or mirror those under a special flight authorization in 91.818.

FAA considered where it would be appropriate to document the conditions and limitations that would be required under proposed § 91.817(a)(3). FAA identified several alternatives for documenting the conditions and limitations, including placement in operations specifications, modification of § 21.5 to require information in the flight manual, or development of a stand-alone document. FAA invites comments on where it should place operator-specific conditions and limitations to ensure that the operator meets the requirements in § 91.817(a)(1). FAA determined that any conditions or limitations that would be necessary under this proposal can be addressed in the finding by the Administrator, including additions or changes to information in the flight manual. Therefore, changes to part 21 are not necessary.

FAA is also considering whether to limit FAA's review for en route noise certification purposes to approval by the Administrator of the method of compliance (*e.g.*, flight demonstration or model-based evaluation) used to demonstrate the ability to comply with the 0.11 psf limit. Any potential conditions and limitations issued by the Administrator would only pertain to the approved method of compliance. FAA invites comments on whether FAA review should be limited to the method of compliance and whether potential conditions and limitations should pertain only to the method of compliance, rather than the operation of the aircraft.

iii. Section-By-Section Analysis for § 91.817(a) and § 91.817(b)

For these reasons, FAA proposes the following amendments.

Section § 91.817 is currently titled "Civil aircraft sonic boom." FAA proposes to retitle this section "Civil supersonic flight" to capture the new regulation proposed in this NPRM accurately.

Current § 91.817 prohibits operation of a civil aircraft in the U.S. at a true flight Mach number greater than 1 except in compliance with conditions and limitations in an authorization to exceed Mach 1 issued to the operator in accordance with § 91.818. Proposed § 91.817 would create new paragraphs enabling civil supersonic flight. Under the proposed rule, no person may operate a civil aircraft in the U.S. at a true flight Mach number greater than 1 unless they meet the conditions in proposed §§ 91.817(a), 91.817(c), or 91.818. Section 91.817(a)(1) proposes that, to operate an aircraft at a true flight Mach number greater than 1, sonic boom overpressure at the surface must not exceed 0.11 psf. Proposed § 91.817(a)(2) would require the operator of the aircraft to demonstrate and the Administrator to make a finding prior to operation at a true flight Mach number greater than 1. Proposed § 91.817(a)(3) would require the aircraft be operated in compliance with any conditions and limitations to ensure compliance with proposed paragraph (a)(1) and (2)(ii).

Proposed § 91.817(a)(2) contains the items the operator must demonstrate before the Administrator can issue a finding.

Proposed § 91.817(a)(2)(i) would require the operator demonstrate through measurement, modeling, or other methods approved by FAA, that sonic boom overpressure does not exceed 0.11 psf from primary or secondary sonic booms.

In proposed § 91.817(a)(2)(ii), the operator would be required to have a means of ensuring sonic boom overpressure at the surface does not exceed 0.11 psf.

FAA would only issue a finding after the operator demonstrates that each of the criterion in proposed § 91.817(a)(2) is met.

B. Supersonic Flight to or From an Airport in the U.S.

After initially prohibiting supersonic flight in the U.S. in 1973, except via SFAs, FAA realized areas along the coast were still being impacted by sonic booms. This was because the sonic booms were being caused by flights that had originated outside of the U.S. and not yet arrived in the U.S. territorial waters.⁴² Research by NASA would term this phenomena "secondary sonic boom."⁴³ In response, in 1978, FAA promulgated current § 91.817(b) to prevent secondary sonic booms from Concorde reaching the shores of the U.S. when Concorde was flying to and from U.S. airports.⁴⁴ This effectively expanded the geographic area around the U.S. where supersonic flight was prohibited in response to the Administrator's statutory responsibility to protect the public health from sonic boom. FAA did provide exceptions to this requirement in current § 91.817(b) for operations of civil aircraft where (1) the flight crew has information available that ensures sonic booms do not reach the surface in the U.S. and they comply with those limitations, or (2) the operator complies with conditions and limitations in an SFA. The proposed rule would retain these exceptions. These exceptions ensure that in situations where a sonic boom would reach the surface, it would do so either outside the U.S. or in an area specifically authorized by FAA through an SFA.

As operations authorized under proposed § 91.817(a) would prevent a sonic boom overpressure in excess of 0.11 psf from reaching the surface of the U.S., the operations would be consistent with the original intent and purpose of the exceptions in the 1978 regulation. For this reason, FAA proposes to add an additional exception to the exceptions in current § 91.817(b) to permit civil supersonic flight operations to or from an airport in the U.S. when authorized by the Administrator under proposed § 91.817(a).

For these reasons, FAA proposes the following amendments.

FAA proposes current § 91.817(b) be revised and relocated to § 91.817(c). FAA proposes to add a new § 91.817(c)(1) to permit operations in

accordance with proposed § 91.817(a). FAA proposes to revise §§ 91.817(b)(1) and (b)(2) and relocate the provisions to new §§ 91.817(c)(2) and (c)(3). Current § 91.817(b)(1) requires that information available to the flight crew include the flight limitations that ensure flights entering or leaving the U.S. will not cause a sonic boom to reach the surface in the U.S. Current § 91.817(b)(2) requires, in part, that the operator complies with those flight limitations. These requirements would be relocated as new § 91.817(c)(2). Current § 91.817(b)(2) alternatively allows an operator to comply with conditions and limitations under an SFA. FAA proposes to relocate that portion of current § 91.817(b)(2) as new § 91.817(c)(3). This would maintain the exception for an operation to or from an airport in the U.S. that is in compliance with conditions and limitations in an SFA. These proposed changes would provide three avenues through which operators could operate civil supersonic flight to or from an airport in the U.S.

C. Special Flight Authorization To Exceed Mach 1 and Produce Sonic Booms That May Reach the Surface of the U.S.

FAA maintains there may be times when it is in the public interest for civil aircraft to produce a sonic boom that may reach the surface of the U.S. in controlled environments, for example when developing aircraft and demonstrating compliance with proposed § 91.817(a). Therefore, the ability for the Administrator to evaluate and continue to permit such operations under an SFA remains necessary.

To implement these changes, FAA proposes the following amendments. Proposed § 91.817(b) would retain the exception in current § 91.817(a) allowing an operator to obtain an SFA. Specifically, this would retain the ability of the Administrator to permit operations in the U.S. at a true flight Mach number greater than 1 as an alternative to the requirements in proposed paragraph § 91.817(a), through an SFA issued under § 91.818. Proposed § 91.817(b) is substantially the same as the current § 91.817(a), however, it has been rephrased to capture the enabling nature of the proposed § 91.817 and revised to account for the proposed § 91.817(a).

FAA proposes conforming amendments to § 91.818. Current § 91.818 contains the SFA process and is titled "Special flight authorization to exceed Mach 1." FAA proposes to revise the introductory language for clarity and to account for the authorization to conduct operations at a true flight Mach

number greater than 1 in proposed § 91.817(a) or (c)(2). In addition, current § 91.818(a)(8)(v) references the limits for operation in current § 91.817(b), which permits supersonic operations under the conditions and limitations of an SFA. As FAA is proposing to relocate current § 91.817(b) to § 91.817(c), FAA proposes to revise § 91.818(a)(8)(v) to reference § 91.817(c) instead of § 91.817(b) accordingly.

D. Definitions of Sonic Boom

Key to the scope of this rule is how a sonic boom is created and the characteristics of that sonic boom. Any aircraft that moves through the atmosphere at speeds exceeding the local speed of sound (Mach 1) creates a system of nearly instantaneous (about 3–6 milliseconds of rise time) pressure changes known as shock waves along the length of the aircraft. The system of individual shock waves due to aircraft features propagates through the atmosphere shifting in space over a long-distance, typically coalescing into two compressions, one at the nose and one at the tail, that form a sonic boom. When the energy from the shockwave reaches our ears, it is heard as the loud crack, or thunder-like, sonic boom.⁴⁵ Certain flight maneuvers, such as accelerating an aircraft to speeds above Mach 1 and conducting other maneuvers such as steep turns and push-overs, can result in louder sound events that are known as "focus booms". These focus booms are transient, brief events. FAA is not proposing to regulate focus boom in this NPRM, as these booms are limited in area and duration. In addition, during civil operations, flight planning (e.g., milder maneuvers and controlled acceleration and deceleration) can be utilized to manage focus boom. Upon reaching speeds greater than Mach 1, the aircraft produces a sonic boom that radiates from the aircraft. A sonic boom that travels directly to the surface is termed as a primary sonic boom. This sonic boom is less intense than a focus sonic boom but continues for the duration of the time the aircraft is flying greater than Mach 1, including the duration of the en route phase of flight.

When an aircraft is producing a primary sonic boom, depending on the atmospheric conditions, that aircraft may also produce secondary sonic booms. Secondary sonic booms are the result of primary sonic booms reflecting off the surface reaching the upper atmosphere and returning to the surface, or refracting off the upper atmosphere and then reaching the surface. Secondary sonic booms are generally significantly quieter than focus and

primary sonic booms, but travel over much longer distances. They may be difficult to notice outdoors, but can manifest indoors as vibrations.⁴⁶ The two types of secondary sonic booms are direct and indirect, which identify based on a single ("over the top" reflecting from the upper atmosphere) or double (initially reflecting from surface and then refracted by the upper atmosphere) reflection path, respectively.

FAA proposes to amend § 1.1, General definitions, to add definitions related to sonic boom. Specifically, FAA proposes to define "sonic boom" as the acoustic event, notably on the earth's surface, that is a manifestation of the shock wave system generated by an aircraft when it flies at a speed greater than the local speed of sound. This is the accepted definition of sonic boom established by the ICAO acoustics panel of noise experts while aiding the Air Navigation Bureau (ANB) with developing an ICAO circular.⁴⁷ In this circular, ICAO defines sonic boom and prescribes how it may be abated by flight operations to avoid land and population impacts. FAA proposes to add a final sentence to the ICAO ANB definition: "Its resulting surface impacts have been labelled as primary or secondary sonic boom(s)." For purposes of this proposed rule, sonic boom would include both types of sonic boom, primary and secondary, as well as both types of secondary boom, direct and indirect. Both are consequences of supersonic flight and both may reach the surface, though in different ways. FAA considers both primary sonic booms and secondary sonic booms harmful if they reach the surface.⁴⁸ FAA also proposes to define both primary and secondary sonic booms in § 1.1.

FAA proposes to define "primary sonic boom" as the sonic boom which travels directly down from the supersonic aircraft to the surface. This definition was established by NASA in its compendium of sonic boom research based on scientific observations of primary sonic booms.⁴⁹

FAA proposes to define "secondary sonic boom" as the sonic boom that is refracted or reflected in certain atmospheric conditions to travel further from the source of the original boom and may eventually reach the surface. Secondary sonic booms are identified as either: Direct secondary that travels upward from the aircraft and refracts through the upper atmosphere down to the surface, or Indirect secondary that travels down to the surface after both (1) reflecting from the surface or refracting upward due to parameters being met (e.g., MCO conditions); and (2)

refracting downward through the upper atmosphere to the surface. This definition is adopted from the definition NTSC established in its 1980 study of Concorde flights off the coast of New England.⁵⁰

V. Regulatory Notices and Analyses

A. Regulatory Impact Analysis

E.O. 12866 ("Regulatory Planning and Review") and E.O. 13563 ("Improving Regulation and Regulatory Review") require agencies to regulate in the "most cost-effective manner," to make a "reasoned determination that the benefits of the intended regulation justify its costs," and to develop regulations that "impose the least burden on society."

The Office of Management and Budget has determined this proposed rulemaking is a significant regulatory action as defined in § (3)(f) of E.O. 12866. E.O. 14192 ("Unleashing Prosperity through Deregulation") instructs agencies to "alleviate unnecessary regulatory burdens." FAA expects this rule, if finalized as proposed, to be an E.O. 14192 deregulatory action. This section provides FAA's analysis of the regulatory impact of the proposed rule.

i. Need for Regulatory Action

The proposed rule would repeal the prohibition on civil supersonic flight and establish an interim noise-based certification standard for sonic boom to allow for supersonic flight over the U.S. without the need for a Special Flight Authorization (SFA). This action also addresses the direction in E.O. 14304, "Leading the World in Supersonic Flight." The proposed rule would facilitate the development of new supersonic aircraft, new system technology, and enable future rulemakings to further expand the supersonic industry.

ii. Baseline for the Analysis

The baseline for the analysis comprises the existing regulatory framework for conducting civil supersonic flight operations over the U.S., including the affected entities and operations under this framework. While civil supersonic flight over the U.S. is prohibited, manufacturers or operators may apply for an SFA that authorizes a limited number of supersonic flights within an isolated test area for limited purposes and allows sonic booms to reach the surface. Only four SFAs have been issued to date. These authorizations were issued to: Scaled Composites for Spaceship One (2003); Gulfstream Aerospace Model 650

(2010); Boom Supersonic XB-1 demonstrator (2024); and Hermeus for the Supersonic Quarterhorse Mark 2.1 unmanned aircraft system (2026).

Currently, two manufacturers are actively developing civil supersonic aircraft for passenger carrying operations in the NAS. Under this proposed rule, these manufacturers would continue to use the existing SFA process to conduct flight tests; therefore, the cost of these SFAs are excluded from this analysis. In addition, FAA anticipates five operators will apply for an SFA to operate supersonic aircraft within the analysis period. Because FAA limits SFAs to a specific operational area and a set number of flights, FAA assumes each SFA remains valid for no more than one year. Consequently, FAA assumes that each operator would apply for a new SFA annually. Table 1 displays the affected entities and new SFA applications in the analysis period.

TABLE 1—AFFECTED ENTITIES AND NEW SFA APPLICATIONS

Year	Operators	SFA applications
1	0	0
2	0	0
3	5	5
4	5	5
5	5	5
Total		15

FAA uses a 5-year analysis period for this preliminary Regulatory Impact Analysis. FAA determined that a shorter analysis period is appropriate for this proposed rule because civil supersonic flight is still an emerging technology and may evolve in a manner different from current expectations. This timeframe also accounts for the time it will take for FAA to set final LTO standards that will allow supersonic aircraft to operate from U.S. airports.

iii. Benefits

There is currently a prohibition on civil supersonic flights in the U.S., and no aircraft can operate at speeds exceeding Mach 1 unless the aircraft operator obtains an SFA. The proposed rule would remove this prohibition and implement an interim en route noise certification standard, thereby supporting the development of the next generation of supersonic flight while safeguarding the public from the adverse impacts of sonic booms.

The repeal of the prohibition and defining interim noise standards would allow the commercial supersonic aircraft industry to innovate and

promote economic viability by providing growth opportunities for the domestic aviation sector. Repeal of the prohibition establishes the necessary regulatory framework to enable the development of civil supersonic aircraft, paving the way for the public to benefit eventually from significantly reduced travel times and more efficient global connectivity.

iv. Costs

The proposed rule would result in some regulatory costs and cost savings for FAA and industry. FAA anticipates costs to demonstrate compliance with the proposed rule's noise requirements, including means of compliance costs and the incremental flight testing costs. FAA expects the proposed rule to generate administrative cost savings because operators would no longer need to apply for an SFA; instead, they will request a less burdensome, one-time authorization from the Administrator.

Means of Compliance Costs

FAA anticipates manufacturers would incur costs to develop technology and flight techniques (e.g., MCO) to ensure a sonic boom overpressure in excess of 0.11 psf does not reach the surface during civil aircraft operations. The proposed rule would not require specific technology or techniques but instead would provide manufacturers with flexibility to develop or continue developing their own means to comply. FAA expects that this flexibility would lead manufacturers to choose the most cost-effective solution. Given the new and novel nature of MCO and other sonic boom abatement techniques and technology, FAA does not have data on the costs to implement MCO or other sonic abatement techniques and accompanying technologies and thus is unable to estimate these costs.

FAA requests comment and supporting data on the assumption that manufacturers would choose the most cost-effective means of compliance, as well as on costs to develop MCO and other means of compliance to ensure sonic booms do not reach the surface.

Testing Costs

FAA expects operators seeking to operate within the analysis period would need to use flight testing as a part of the process to obtain authorization from the Administrator. However, these operators are not expected to incur flight testing costs above those already required to obtain a flight authorization. In addition, as the inventory of sufficiently robust data increases, FAA expects other ways to demonstrate compliance, including modeling and

other methods that do not incur flight testing costs, to be sufficient. To conduct this testing, operators would use a method (e.g., microphones) to conduct acoustic data acquisition that assesses the sound level set forth in proposed § 91.817(a)(1). FAA assumes five operators would seek to operate civil supersonic aircraft in the U.S., and they would be required to demonstrate the method and means of compliance proposed in § 91.817(a)(2). FAA does not have flight testing cost data specific to measuring a sonic boom.⁵¹ FAA seeks public comment on the costs of data collection and the assumption of no additional flight testing costs.

Cost Savings

FAA expects administrative cost savings for industry and FAA by replacing the yearly process for applying for an SFA with an authorization from the Administrator to conduct civil supersonic flights. The following analysis compares the baseline costs where operators would need to submit an SFA application against the proposed rule's costs in which operators would apply for a one-time authorization.

Currently, FAA estimates that each SFA application costs an operator \$110,928 in administrative costs annually.⁵² Over the five-year period of analysis, an operator would submit three applications, resulting in a per operator cost of \$332,784 and a total industry cost of \$1,663,920. The proposed rule would replace this recurring cost for operators with a one-time administrative cost per aircraft type. FAA estimates that an operator would spend 200 hours⁵³ requesting the one-time authorization. Based on a 2024 fully loaded wage rate of \$96.28 per hour for an aerospace engineer (\$67.88 per hour base wage⁵⁴ plus 1.42 overhead factor),⁵⁵ the one-time administrative cost would be \$19,257 per operator, or \$96,284 for the industry. FAA based the 200-hour estimate for the noise compliance reports in proposed § 91.817 on historical data from similar subsonic aircraft noise compliance reports under part 36.

FAA currently incurs an administrative cost of \$58,973 for each SFA.⁵⁶ Based on the 15 SFAs projected during the analysis period, total FAA processing costs are estimated to be

\$884,595. The proposed rule would reduce this burden by requiring only one initial authorization per operator per aircraft type. Under the proposed rule, FAA expects that an FAA engineer would process the initial flight authorizations for all five operators. For an FAA engineer (J Pay Band), the base wage is \$59.56 per hour.⁵⁷ With overhead costs of 36.25 percent added,⁵⁸ the total salary is \$81.15 per hour.⁵⁹ With each application estimated to take 80 hours⁶⁰ to process, the cost to the FAA per operator to process each authorization would be \$6,492. Therefore, FAA estimates the Agency to incur \$32,460 in administrative costs under the proposed rule.

The baseline costs are \$1.66 million to industry and \$0.88 million to FAA, for a total of \$2.55 million. Under the proposed rule, the costs would decrease to \$96,284 and \$32,460, respectively, for a total of \$128,744. Therefore, FAA estimates that the proposed rule would result in cost savings to industry and FAA of \$2,419,771 in the analysis period. Table 2 displays the baseline and proposed rule's cost estimates, and Table 3 displays the industry and FAA cost savings.

TABLE 2—BASELINE AND PROPOSED RULE ADMINISTRATIVE COSTS

Year	Baseline costs				Proposed rule costs			
	SFAs	Industry costs	FAA costs	Total	Operator authorizations	Industry costs	FAA costs	Total
1	0	\$0	\$0	\$0	0	\$0	\$0	\$0
2	0	0	0	0	0	0	0	0
3	5	554,640	294,865	849,505	5	96,284	32,460	128,744
4	5	554,640	294,865	849,505	0	0	0	0
5	5	554,640	294,865	849,505	0	0	0	0
Total	15	1,663,920	884,595	2,548,515	5	96,284	32,460	128,744

TABLE 3—ADMINISTRATIVE COST SAVINGS

Year	Industry cost savings	FAA cost savings	Total cost savings
1	\$0	\$0	\$0
2	0	0	0
3	458,356	262,405	720,761
4	554,640	294,865	849,505
5	554,640	294,865	849,505
Total	1,567,636	852,135	2,419,771

v. Summary

The proposed rule would remove the current barrier to developing the next generation of supersonic aircraft by establishing an interim noise standard. Benefits from the proposed rule include providing regulatory certainty that will encourage the advancement of new supersonic aircraft and technology. The

proposed rule would also result in means of compliance and flight-testing costs that FAA cannot estimate due to a lack of data and uncertainty. However, FAA expects the incremental increase in these costs to be minimal as most compliance costs are already captured within the existing costs of obtaining a flight authorization. Lastly, FAA estimates undiscounted administrative

cost savings of \$1,567,636 for industry and \$852,135 for the government, totaling \$2,419,771. The proposed rule is the first step in providing regulatory certainty that would enable the supersonic industry and regular supersonic transport flights. Table 4 displays the qualitative benefits, qualitative costs, and undiscounted and

discounted cost savings of the proposed rule.

TABLE 4—SUMMARY BENEFITS AND COSTS
[2024\$]

Qualitative Benefits					
- Supporting the development of supersonic flight. - Establishes the necessary framework to enable the development of civil supersonic aircraft.					
Qualitative Costs					
Industry costs to demonstrate compliance, including means of compliance costs and incremental flight testing costs.					
Cost Savings					
	2024\$	7%	3%	7%	3%
Category	Present value		Annualized		
Industry Cost Savings	\$1,567,636	\$1,192,738	\$1,390,688	\$290,898	\$303,663
FAA Cost Savings	852,135	649,386	756,475	158,379	165,180
Total Cost Savings	2,419,771	1,842,124	2,147,163	449,277	468,843

vi. Uncertainties

Due to the novel and innovative nature of the supersonic aircraft industry, FAA has noted several

uncertainties that limit the ability to provide a quantitative economic impact analysis for this proposed rule. The table below summarizes the

uncertainties in the analysis. FAA invites comment and requests additional information and data to consider in these areas.

TABLE 5—UNCERTAINTIES

Category	Uncertainty
Population and Timeframe	The number of manufacturers and operators entering the industry after the analysis period. The time it will take for the industry to have a functioning supersonic transport category aircraft available to the public.
Benefits	The revenue and profits of manufacturers, operators, and third-party entities in the industry. The routes and the number of routes; size of the aircraft, including the number of seats in an aircraft; and price per seat and other economic factors of operations.
Costs	The methods and means of complying with the noise standard. This includes the cost of instruments to read the noise levels, software, data acquisition, and noise testing. The administrative costs the industry will incur with compliance.

vii. Alternatives

FAA evaluated the alternative to not promulgate this proposed rule. Under this alternative FAA would work in conjunction with ICAO to set noise standards for en route supersonic transport, an effort that is currently underway.⁶¹ FAA does not expect this ICAO effort to be complete until 2031. After the ICAO standard is established, FAA would then promulgate a proposed rule to implement these ICAO noise standards. However, this is a long-term effort and would hinder the supersonic industry's ability in the more immediate term to be innovative. This alternative would not be appropriate to meet the needs of the industry. It would not provide for advancements in technology and development of flight techniques that prevent sonic booms from reaching the surface.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980, Public Law 96–354, 94 Stat. 1164 (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121, 110 Stat. 857, Mar. 29, 1996) and the Small Business Jobs Act of 2010 (Pub. L. 111–240, 124 Stat. 2504 Sept. 27, 2010), requires Federal agencies to consider the effects of the regulatory action on small business and other small entities and to minimize any significant economic impact. The term “small entities” comprises small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

Agencies must perform a review to determine whether a rule will have a

significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA. However, if an agency determines a rule is not expected to have a significant economic impact on a substantial number of small entities, § 605(b) of the RFA provides that the head of the agency may certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination with a reasoned explanation.

FAA used the definition of small entities in the RFA for this analysis. The RFA defines small entities as small businesses, small governmental jurisdictions, or small organizations. In 5 U.S.C. 601(3), the RFA defines “small business” to have the same meaning as

"small business concern" under section 3 of the Small Business Act. The Small Business Act authorizes the Small Business Administration (SBA) to define "small business" by issuing regulations. SBA (2023) has established size standards for various types of economic activities, or industries, under the North American Industry Classification System (NAICS).

SBA defines a small scheduled passenger air carrier as any operator with 1,500 or fewer employees and a small nonscheduled passenger air carrier as any operator with 1,500 or fewer employees.⁶² FAA identified five operators contemplating supersonic overland flight operability. Based on the SBA size standard and on publicly available data on employment for these entities, both operators are large businesses. Therefore, FAA certifies the proposed rule will not have a significant economic impact on a substantial number of small entities because the proposed rule does not impact a small entity. FAA solicits comment regarding this determination.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 103–465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the U.S. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the U.S., so long as the standard has a legitimate domestic objective, such as the protection of safety and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards.

FAA has assessed the potential effect of this proposed rule and determined it ensures the safety of the American public and does not exclude imports that meet this objective. As a result, FAA does not consider this proposed rule as creating an unnecessary obstacle to foreign commerce.

D. Unfunded Mandates Assessment

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) governs the issuance of Federal regulations that require unfunded mandates. An unfunded mandate is a regulation that requires a State, local, or Tribal government or the private sector to incur direct costs without the Federal Government having first provided the

funds to pay those costs. FAA determined the proposed rule would not result in the expenditure of \$193,000,000 or more (\$100,000,000 adjusted for inflation using the most current Implicit Price Deflator for the Gross Domestic Product) by State, local, or Tribal governments, in the aggregate, or the private sector, in any one year.

E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires FAA consider the impact of paperwork and other information collection burdens imposed on the public. According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(2)(vi)), an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a currently valid Office of Management and Budget (OMB) control number.

This action contains the following proposed new information collection requirements. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), FAA has submitted these proposed information collection amendments to OMB for its review.

Summary: FAA is proposing to require operators seeking to operate supersonic flight overland to demonstrate a means and method of compliance that ensures sonic boom overpressure in excess of 0.11 psf does not reach the surface. Each applicant's collected information would be incorporated into a noise compliance report that is provided to and approved by FAA.

Use: The noise compliance report of test data would be used by FAA to make a compliance finding with proposed § 91.817.

Respondents (including number of): There are currently five aircraft operators contemplating authorization for supersonic overland flight operability.

Frequency: There are estimated to be five supersonic airplane authorizations to enable supersonic overland flight operability in the 3-year period of this PRA and will occur in the first year.

Annual Burden Estimate: For a private industry worker working full-time as an aerospace engineer, the 2024 base wage rate is \$67.88 per hour.⁶³ Using an overhead factor of 1.42 makes total compensation \$96.28 per hour.⁶⁴ For a single applicant spending 200 hours⁶⁵ on compliance collection at a wage of \$96.28 per hour, the cost would be \$19,257 per applicant.

There will be a total of five respondents for domestic projects who would report. FAA expects the

respondents to report once as FAA assumes they have aircraft they will test. The cost for five applicants is \$19,257 per applicant, the cumulative total is \$96,284 in year three and no cost in the first two years. At a seven percent present value, the total cost is \$78,596.

FAA Cost

For an FAA engineer in the J Pay Band, the base wage is \$59.56 per hour.⁶⁶ With overhead costs of 36.25 percent added,⁶⁷ the total salary is \$81.15 per hour.⁶⁸ Based on two requests expected in the first year, requiring 80 hours⁶⁹ per response at a wage rate of \$81.15 per hour, the total government cost is estimated to be \$32,460. At seven percent present value, the total government cost is \$26,497. FAA based its estimate of time spent on completing the noise compliance report for proposed § 91.817 on time estimates it uses for its review of similar noise compliance reports under part 36.

FAA is soliciting comments to—

(1) Evaluate whether the proposed information requirement is necessary for the proper performance of the functions of FAA, including whether the information will have practical utility;

(2) Evaluate the accuracy of FAA's estimate of the burden;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of collecting information on those who are to respond, including by using appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Individuals and organizations may send comments on the information collection requirement to the address listed in the ADDRESSES section at the beginning of this preamble by August 31, 2026. Comments also should be submitted to the Office of Management and Budget, Office of Information and Regulatory Affairs, Attention: Desk Officer for FAA, New Executive Office Building, Room 10202, 725 17th Street NW, Washington, DC 20053.

F. International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to ICAO Standards and Recommended Practices to the maximum extent practicable. FAA has determined there are no ICAO Standards and Recommended Practices that correspond to these proposed regulations. ICAO has not issued en route standards for supersonic aircraft.

G. Environmental Analysis

The Department has analyzed the environmental impacts of this proposed rulemaking pursuant to the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321 *et seq.*). FAA has determined this proposed rulemaking is categorically excluded pursuant to FAA Order 1050.1G § 1.4(f). Categorical exclusions are categories of actions the agency has determined normally do not significantly affect the quality of the human environment and therefore do not require either an environmental assessment (EA) or environmental impact statement (EIS). See DOT Order 5610.1D § 9. In analyzing the applicability of a categorical exclusion, the agency must also consider whether extraordinary circumstances are present that would warrant the preparation of an EA or EIS.⁷⁰ This rulemaking, which as proposed would repeal the prohibition on supersonic overland flight and establish an interim noise-based (acoustical) en route sonic boom noise certification standard of no sonic boom overpressure greater than 0.11 psf reaching the surface, is categorically excluded pursuant to Appendix B–2.6(f) of FAA Order: “Regulations, standards, and exemptions (excluding those that if implemented may cause a significant impact on the human environment).” FAA does not anticipate any environmental impacts, and there are no extraordinary circumstances present in connection with this rulemaking.

H. Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying 14 CFR regulations in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish appropriate regulatory distinctions. Because this proposed rule would apply to civil supersonic flight throughout the U.S., it is unlikely, if adopted, to affect intrastate aviation in Alaska. FAA, therefore, specifically requests comments on whether there is justification for applying the proposed rule differently in intrastate operations in Alaska.

VI. Executive Order Determinations

A. Executive Order 13132, Federalism

FAA has analyzed this proposed rule under the principles and criteria of E.O. 13132, Federalism. FAA has determined this action would not have a substantial direct effect on the States, or the

relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, would not have federalism implications.

B. Executive Order 13175, Consultation and Coordination With Indian Tribal Governments

Consistent with E.O. 13175, Consultation and Coordination with Indian Tribal Governments,⁷¹ and FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures,⁷² FAA ensures Federally Recognized Tribes (Tribes) are given the opportunity to provide meaningful and timely input regarding proposed Federal actions that have the potential to affect uniquely or significantly their respective Tribes. FAA has not identified any unique or significant effects, environmental or otherwise, on Tribes resulting from this proposed rule. In accordance with the E.O. 13175 and FAA Order 1210.20, and in consideration of the requirements in 49 U.S.C. 44715 (b)(2) requiring the Administrator to consult with appropriate departments, agencies, and instrumentalities of the U.S. Government and State and interstate authorities, FAA intends to notify tribal authorities of the availability of this rulemaking for comment upon publication of this NPRM.

C. Executive Order 13211, Regulations That Significantly Affect Energy Supply, Distribution, or Use

FAA analyzed this proposed rule under E.O. 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). FAA has determined that it would not be a “significant energy action” under the E.O. and would not be likely to have a significant adverse effect on the supply, distribution, or use of energy.

D. Executive Order 13609, Promoting International Regulatory Cooperation

E. O. 13609, Promoting International Regulatory Cooperation, promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. FAA has analyzed this action under the policies and agency responsibilities of E.O. 13609 and has determined, given that ICAO and other civil aviation authorities have not adopted regulations for supersonic overland flight, this action would have

no effect on international regulatory cooperation.

E. Executive Order 14192, Unleashing Prosperity Through Deregulation

E.O. 14192 (“Unleashing Prosperity through Deregulation”) instructs agencies to “alleviate unnecessary regulatory burdens.” FAA expects this proposed rule, if finalized as proposed, to be an E.O. 14192 deregulatory action.

VII. Additional Information

A. Comments Invited

FAA invites interested persons to participate in this rulemaking by submitting written comment, data, or views. FAA also invites comment relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. FAA encourages commenters to include supporting facts, research, and evidence in their comments. When doing so, commenters are encouraged to provide citations to the published materials referenced, including active hyperlinks. Likewise, commenters who reference materials which have not been published are encouraged to upload relevant data collection instruments, data sets, and detailed findings as a part of their comment. Providing such citations and documentation will assist FAA in analyzing the comments. To ensure the docket does not contain duplicate comments, commenters should submit only one time if comments are filed electronically, or commenters should send only one copy of written comments if comments are filed in writing.

FAA will file in the docket all comments it receives, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rule. Before acting on this proposal, FAA will consider all comments it receives on or before the closing date for comments. FAA will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. FAA may change this proposal in light of the comments it receives.

B. Confidential Business Information

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial

information that you actually and customarily treat as private, that will harm your commercial or financial interests if disclosed to the public, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to the person in the **FOR FURTHER INFORMATION CONTACT** section of this document. Any commentary FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

C. Electronic Access and Filing

A copy of this NPRM, all comments received, any final rule, and all background material may be viewed online at www.regulations.gov using the docket number listed above. Electronic retrieval help and guidelines are available on the website. It is available 24 hours each day, 365 days each year. An electronic copy of this document may also be downloaded from the Office of the Federal Register website at www.federalregister.gov and the Government Publishing Office website at www.govinfo.gov. A copy may also be found at FAA's Regulations and Policies website at www.faa.gov/regulations_policies.

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW, Washington, DC 20591, or by calling (202) 267-9677. Commenters must identify the docket or notice number of this rulemaking.

All documents FAA considered in developing this proposed rule, including economic analyses and technical reports, may be accessed in the electronic docket for this rulemaking.

D. Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document may contact its local FAA official, or the person listed under the **FOR FURTHER INFORMATION CONTACT** heading at the beginning of the preamble. To find out more about SBREFA on the internet, visit

www.faa.gov/regulations_policies/rulemaking/sbre_act/.

Endnotes

¹ Civil Aircraft Sonic Boom Final Rule, 38 FR 8051 (March 28, 1973).

² Executive Order 14304, "Leading the World in Supersonic Flight" (June 6, 2025).

³ <https://www3.nasa.gov/specials/Quest/science-of-sound.html>.

⁴ Civil Aircraft Sonic Boom Final Rule, 38 FR 8051 (March 28, 1973).

⁵ Civil Aircraft Sonic Boom NPRM, 35 FR 6189 (April 16, 1970); 38 FR 8051 (March 28, 1973).

⁶ Additional reasons cited for provisions now in § 91.818 for SFAs include (1) recognize cases in which it may be in the public interest for sonic boom to reach the surface to show compliance with the airworthiness provisions of the Federal Aviation Regulations or for aircraft development; (2) allow for research and development flights necessary to determine the sonic boom characteristics of an aircraft; and (3) allow for flights to demonstrate conditions and limitations that reduce or eliminate the effect of sonic boom on the surface. In 2021, FAA added a fourth reason for an authorization to exceed Mach 1, to conduct noise testing during supersonic flight. *Id.*; Special Flight Authorizations for Supersonic Aircraft Final Rule, 86 FR 3782, 3786 (Jan. 15, 2021).

⁷ Aircraft noise limits have varied over time from Stage 1 in the 1970s to current Stage 5 certification limits. Noise limits for subsonic aircraft at the time of the 1978 rulemaking were Stage 3. FAA did not require then-current generation Concorde aircraft to meet Stage 3 limits because it was not economically reasonable or technologically practicable for them to do so. FAA's stated goal was to not certify or permit to operate in the U.S. a supersonic airplane that did not meet the standards applicable to subsonic airplanes at the time of certification. However, if it was not technologically feasible to produce such an airplane, FAA considered Stage 2 the minimum level of stringency that was acceptable. Civil Supersonic Airplanes Final Rule, 43 FR 28406, 28414 (June 29, 1978).

⁸ Civil Supersonic Airplanes Supplemental NPRM, 42 FR 55176, 55181-55182 (Oct. 13, 1977).

⁹ Additional information on the regulatory history of § 91.817(b) is available in the FAA legal interpretation "Supersonic Aircraft Operations in the United States" (Feb. 29, 2016) available in the docket.

¹⁰ 43 FR at 28414 (June 29, 1978).

¹¹ Noise Standards; Civil Supersonic Aircraft Noise Type Certification Standards and Operating Rules ANPRM, 51 FR 39663 (Oct. 30, 1986).

¹² Civil Supersonic Aircraft Noise Type Certification Standards and Operating Rules NPRM, 55 FR 22020 (May 30, 1990). While the 1990 NPRM used phrase "noise standards" rather than "landing and takeoff noise standards," FAA only directly regulates subsonic noise standards during the landing and takeoff phases of flight. The distinction is made in this proposal for clarity and to differentiate between LTO noise standards

and the sonic boom noise standards proposed by this NPRM.

¹³ Civil Supersonic Aircraft Noise Type Certification Standards and Operating Rules Withdrawal of NPRM, 59 FR 39711 (Aug. 4, 1994).

¹⁴ Civil Supersonic Aircraft Noise Type Certification Standards and Operating Rules Statement of Policy, 59 FR 39679 (Aug. 4, 1994).

¹⁵ A "Stage" is a 14 CFR part 36 designation of an airplane that reflects a stringency (noise limit reductions) change of U.S. noise certification standards for large transport jet airplanes. Such amendments are intended to lower the noise compliance limits for the flyover, lateral, and approach conditions based on advances of noise reduction technology. Stage 4 airplanes must comply with part 36, Amendment 36-26. See Stage 4 Aircraft Noise Standards Final Rule, 70 FR 38742 (July 5, 2005).

¹⁶ At the time of issuance of this policy statement, Stage 4 noise limits were the limits required for certification of new transport category turbojet airplanes. Newly certificated transport category turbojet airplanes are now required to comply with Stage 5 noise limits. See 14 CFR 36.103 (d) and (e).

¹⁷ 73 FR 62871 (Oct. 22, 2008).

¹⁸ Public Law 115-254 (Oct. 5, 2018).

¹⁹ Section 1110 of the FAA Reauthorization Act of 2024 (Pub. L. 118-63) reiterated this leadership role and renewed the requirement that FAA report on efforts undertaken to fulfill this requirement.

²⁰ Special Flight Authorizations for Supersonic Aircraft Final Rule, 86 FR 3782 (January 15, 2021).

²¹ Noise Certification of Supersonic Airplanes NPRM, 85 FR 20431 (April 11, 2020).

²² "Boom Supersonic Announces Boomless Cruise" (Feb. 10, 2025), available at <https://boomsupersonic.com/press-release/boom-supersonic-announces-boomless-cruise>.

²³ Mach Cutoff Analysis and Results from NASA's Farfield Investigation of No-Boom Thresholds; NASA Armstrong Flight Research Center (May 30, 2016), available at <https://ntrs.nasa.gov/api/citations/20160007348/downloads/20160007348.pdf>.

²⁴ FAA met with six original equipment manufacturers (Boom Supersonic, Pivotal SST, Gulfstream, Spike SST, Boeing, and Hermeus) and two trade associations (General Aviation Manufacturers Association and Aerospace Industries Association). Listening sessions were held in accordance with DOT Memorandum "Guidance on Communication with Parties outside of the Federal Executive Branch (Ex Parte Communications)" dated April 19, 2022 (<https://www.transportation.gov/regulations/guidance-ex-parte-communications>), and DOT Order 2100.6B, "Policies and Procedures for Rulemakings" (<https://www.transportation.gov/regulations/dot-order-21006b-policies-and-procedures-rulemakings>).

²⁵ Public Law 115-254 (Oct. 5, 2018).

²⁶ FAA has not received any requests to date for a rule of particular applicability (RPA) under § 181(f); however, FAA expects to follow a similar evaluation process as the

RPA process FAA has used for UAS. See "Noise Certification Standards: Matternet Model M2 Aircraft" 87 FR 19639 (Sept. 12, 2022) for an example of an RPA issued for a UAS.

²⁷ <https://www.nasa.gov/mission/quest/>.

²⁸ 85 FR 20431 (April 13, 2020).

²⁹ <https://www.icao.int/supersonic-aircraft-noise-standards-development> and <https://www.icao.int/sites/default/files/sp-files/environmental-protection/Documents/EnvironmentReport-2010/ICAO-ENV-Report-2022-F4.pdf>.

³⁰ <https://www.icao.int/environmental-protection/Pages/envrep2025.aspx>.

³¹ "Acoustical Model of Mach Cut-Off", Project 042, ASCENT Centers of Excellence, <https://ascenLaero/project/acoustical-model-of-mach-cut-off/>.

³² <https://www.nasa.gov/mission/quest/>.

³³ "Boom Supersonic Partners with Nasa to Capture Iconic Image of Civil Supersonic Flight"; <https://boomsupersonic.com/press-release/boom-supersonic-partners-with-nasa-to-capture-iconic-image-of-civil-supersonic-flight> (March 3, 2025).

³⁴ Though this proposal would require no sonic boom overpressure greater than 0.11 psf to reach the surface, FAA does not expect these flights to be completely silent. Supersonic aircraft will likely produce engine noise comparable to subsonic aircraft, as well as non-sonic boom noise associated with supersonic flight. See the discussion in Section III. D. regarding evanescent waves.

³⁵ Civil Supersonic Airplanes Final Rule, 42 FR 28406 (June 29, 1978).

³⁶ Cliatt, Hill, Hearing, "Mach Cutoff Analysis and Results from NASA's Farfield Investigation of No-boom Thresholds" AIAA 2016-3011.

³⁷ Edward J. Rickley and Allan D. Pierce, "Detection and assessment of secondary sonic booms in New England," Report No. FAA-AEE-80-22 (May 1980) by. Another study expanded on the terminology from the NTSC study and changed the terminology from "Type 1" and "Type 2" secondary sonic booms to secondary "direct" sonic boom and secondary "indirect" sonic boom, respectively: K. Kaouri, D. Allwright, L. Dallois: "Secondary sonic boom in a stratified atmosphere and related issues," 10th Intl. Symp. On Long Range Sound Propagation, Grenoble, France, NCPA Report No. JC 1003-01 (2002).

³⁸ Modernization of Special Airworthiness Certification Final Rule, 90 FR 35034 (July 24, 2025).

³⁹ Normalizing Unmanned Aircraft Systems Beyond Visual Line of Sight Operations, 90 FR 38316 (Aug. 7, 2025).

⁴⁰ PCBoom 7 Technical Reference, 2nd Edition, NASA/TM-20250003228 (August 2025).

⁴¹ Mach Cutoff Analysis and Results from NASA's Farfield Investigation of No-Boom Thresholds, by Larry J. Cliatt II, Michael A. Hill, & Edward A. Haering, Jr., NASA Armstrong Flight Research Center (May 30, 2016).

⁴² 49 U.S.C. 40101.

⁴³ Detection and assessment of secondary sonic booms in New England, Report No. FAA-AEE-80-22, May 1980-05-01, by Edward J. Rickley and Allan D. Pierce.

⁴⁴ 43 FR 28419.

⁴⁵ <https://www3.nasa.gov/specials/Quest/science-of-sound.html>.

⁴⁶ Maglieri, Bobbitt, Plotkin, Shepard, Coen, Richwine, "Sonic Boom, Six Decades of Research," NASA SP 2014-622, Chap. 1, page 19.

⁴⁷ ICAO Circular 126, "Guidance for SST Aircraft Operations" (1975).

⁴⁸ FAA has acknowledged in a previous rulemaking that secondary sonic booms could reach the surface of the U.S. and that protection from secondary sonic booms similar to protection from primary sonic booms was needed. FAA proposed the current requirement in § 91.817(b) that flight crews have information that ensures sonic booms from flights outside the U.S. will not reach the surface of the U.S. following reports of sonic boom noise from aircraft outside U.S. territorial waters reaching coastal areas. In that NPRM, FAA stated that protection like the prohibition on supersonic overland flight in § 91.817(a) was needed to protect these areas from aircraft beyond U.S. territorial waters. (42 FR 55176, 55181, Oct. 13, 1977). The 1980 NTSC study subsequently identified sounds like those discussed in the NPRM and termed them secondary sonic booms.

⁴⁹ Maglieri, Bobbitt, Plotkin, Shepard, Coen, Richwine, "Sonic Boom, Six Decades of Research," NASA SP 2014-622.

⁵⁰ Edward J. Rickley and Allan D. Pierce, "Detection and assessment of secondary sonic booms in New England," Report No. FAA-AEE-80-22 (May 1980) by.

⁵¹ FAA estimates the cost of transport category airplanes under part 36 to be between \$1.21 million and \$3.64 million in 2024 dollars (See: GAO Report to Congressional Committees: Aircraft Noise—Information on a Potential Mandated Transition to Quieter Airplanes (2020), available at <https://www.gao.gov/assets/710/708979.pdf>). Operators seeking to test a civil supersonic aircraft would incur these flight testing costs. However, these costs would be incurred as part of transport category flight testing and are not directly attributable to the proposed rule.

⁵² FAA estimates that 6 applicant employees (level 1 and 2 technical project managers; level 1 and 5 engineers; and level 2 and 5 environmental engineers/scientists) spend 540 cumulative hours to apply for an SFA. FAA estimated the total SFA application burden using a weighted average wage of \$144.21 per employee and a fringe benefit factor of 1.42 (See: Employer Costs for Employee Compensation—December 2024, https://www.bls.gov/news.release/archives/ecec_03142025.htm).

⁵³ The 200 hours estimate obtained from the Supporting Statement in the Noise Certification Standards for Subsonic Jet Airplanes and Subsonic Transport Category Large Airplanes Information Collection Review (OMB 2120-0659). <https://www.reginfo.gov/public/do/DownloadDocument?objectID=139394001>.

⁵⁴ Bureau of Labor Statistics (BLS), "Employer Costs for Employee Compensation—May 2024," Employee costs for private industry workers in Series: 17-2011 Aerospace Engineers, available at <https://data.bls.gov/oes/#/industry/000000>.

⁵⁵ The 1.42 multiplier has been rounded up from 1.4184. The total wage includes BLS compensation data. For 2024, BLS estimates that wages are 70.5 percent total compensation while benefits are 29.5 percent. Employer Costs for Employee Compensation—December 2024, available at https://www.bls.gov/news.release/archives/ecec_03142025.htm.

⁵⁶ FAA estimates that seven Washington, DC-based employees (a J-band and K-band technical project manager; a J-band and K-band program analyst; a J-band and K-band environmental engineer/scientist; and a K-band attorney) spend 520 cumulative hours processing an SFA application. FAA estimated the total SFA processing burden using a weighted average wage of \$83.24 and a fringe benefit factor of 1.3625 (See: Update to Civilian Position Full Fringe Benefit Cost Factor, Federal Pay Raise Assumptions, and Inflation Factors used in OMB Circular No. A-76, "Performance of Commercial Activities," Office of Management and Budget, March 11, 2008, https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2008/m08-13.pdf).

⁵⁷ FAA Technical Pay Band J with Washington DC locality; effective Jan. 2024, minimum salary \$123,884.

⁵⁸ Update to Civilian Position Full Fringe Benefit Cost Factor, Federal Pay Raise Assumptions, and Inflation Factors used in OMB Circular No. A-76, "Performance of Commercial Activities," Office of Management and Budget, March 11, 2008, https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2008/m08-13.pdf.

⁵⁹ The total loaded salary of \$168,792 is divided by 2,080 hours to get the \$81.15 hourly wage. 2024 FAA Core Compensation Plan Pay Bands.

⁶⁰ The 80 hours estimate obtained from the Supporting Statement in the Noise Certification Standards for Subsonic Jet Airplanes and Subsonic Transport Category Large Airplanes Information Collection Review (OMB 2120-0659). <https://www.reginfo.gov/public/do/DownloadDocument?objectID=139394001>.

⁶¹ See ICAO Environmental Report 2025.

⁶² 13 CFR 121.201.

⁶³ Employer Costs for Employee Compensation—May 2024, BLS. Employee costs for private industry workers in Series: 17-2011 Aerospace Engineers, available at <https://data.bls.gov/oes/#/industry/000000>.

⁶⁴ The 1.42 multiplier has been rounded up from 1.4184. The total wage includes BLS compensation data. For 2024, BLS estimates wages are 70.5 percent total compensation while benefits are 29.5 percent. Employer Costs for Employee Compensation—December 2024, https://www.bls.gov/news.release/archives/ecec_03142025.htm.

⁶⁵ The 200 hours estimate obtained from the Supporting Statement in the Noise Certification Standards for Subsonic Jet Airplanes and Subsonic Transport Category Large Airplanes Information Collection Review (OMB 2120-0659), available at <https://www.reginfo.gov/public/do/DownloadDocument?objectID=139394001>.

⁶⁶ FAA Technical Pay Band, J Band with Washington DC locality; effective Jan. 2024, minimum salary \$123,884.

⁶⁷ Update to Civilian Position Full Fringe Benefit Cost Factor, Federal Pay Raise Assumptions, and Inflation Factors used in OMB Circular No. A-76, "Performance of Commercial Activities," Office of Management and Budget, March 11, 2008, https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2008/m08-13.pdf.

⁶⁸ The total loaded salary of \$168,792 is divided by 2,080 hours to get the \$81.15 hourly wage. 2024 FAA Core Compensation Plan Pay Bands.

⁶⁹ The 80 hours estimate obtained from the Supporting Statement in the Noise Certification Standards for Subsonic Jet Airplanes and Subsonic Transport Category Large Airplanes Information Collection Review (OMB 2120-0659), available at <https://www.reginfo.gov/public/do/DownloadDocument?objectID=139394001>.

⁷⁰ DOT Order 5610.1D § 9(b).

⁷¹ 65 FR 67249 (Nov. 6, 2000).

⁷² FAA Order No. 1210.20 (Jan. 28, 2004), available at www.faa.gov/documentLibrary/media/1210.pdf.

List of Subjects

14 CFR Part 1

Air transportation.

14 CFR Part 91

Afghanistan, Agriculture, Air carriers, Air taxis, Air traffic control, Aircraft, Airmen, Airports, Alaska, Aviation safety, Canada, Charter flights, Cuba, Drug traffic control, Ethiopia, Freight, Iran, Iraq, Libya, Mexico, Noise control, North Korea, Political candidates, Reporting and recordkeeping requirements, Security measures, Somalia, Syria, Transportation, Yemen, Yugoslavia.

The Proposed Amendment

For the reasons discussed in the preamble, the Federal Aviation Administration proposes to amend chapter I of title 14, Code of Federal Regulations as follows:

PART 1—DEFINITIONS AND ABBREVIATIONS

■ 1. The authority citation for part 1 continues to read as follows:

Authority: 49 U.S.C. 106(f), 40113, 44701.

■ 2. In § 1.1, add the definitions "Primary sonic boom," "Secondary sonic boom," and "Sonic boom" in alphabetical order to read as follows:

§ 1.1 General definitions.

* * * * *

Primary sonic boom is the sonic boom that travels directly down from the supersonic aircraft to the surface.

* * * * *

Secondary sonic boom is the sonic boom that is refracted or reflected in certain atmospheric conditions to travel farther and may eventually reach the surface. Secondary sonic booms are identified as either direct or indirect. Direct secondary sonic boom travels upward from the aircraft and refracts through the upper atmosphere down to the surface. Indirect secondary sonic boom travels down from the aircraft to the surface; (1) either reflecting from the surface or refracting upward due to atmospheric parameters being met; and (2) refracting downward through the upper atmosphere back to the surface.

* * * * *

Sonic boom is the acoustic event on the earth's surface that is a manifestation of the shock wave system generated by an aircraft when it flies at a speed greater than the local speed of sound. Its resulting surface impacts have been studied and labelled as primary or secondary sonic boom(s).

* * * * *

PART 91—GENERAL OPERATING AND FLIGHT RULES

■ 3. The authority citation for part 91 continues to read as follows:

Authority: 49 U.S.C. 106(f), 40101, 40103, 40105, 40113, 40120, 44101, 44111, 44701, 44704, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506–46507, 47122, 47508, 47528–47531, 47534; Pub. L. 114–190, 130 Stat. 615 (49 U.S.C. 44703 note); Sec. 828 of Pub. L. 118–63, 138 Stat. 1330 (49 U.S.C. 44703 note); articles 12 and 29 of the Convention on International Civil Aviation (61 Stat. 1180), (126 Stat. 11).

■ 4. Revise and republish § 91.817 to read as follows:

§ 91.817 Civil Supersonic Flight.

(a) No person shall operate a civil aircraft in the United States at a true flight Mach number greater than 1 unless—

(1) The sonic boom overpressure at the surface does not exceed 0.11 pound per square foot (psf);

(2) The operator demonstrates and the Administrator finds each of the following:

(i) Through measurement, modeling, or other methods approved by the Administrator, that sonic boom overpressure—

(A) Does not exceed 0.11 psf for primary sonic boom levels at the surface;

(B) Does not exceed 0.11 psf for secondary direct sonic boom levels at the surface; and

(C) Does not exceed 0.11 psf for secondary indirect sonic boom levels at the surface.

(ii) The operator has a means to comply that ensures sonic boom overpressure in excess of 0.11 psf, as provided in paragraph (a)(1), does not reach the surface; and

(3) The aircraft is operated in compliance with any conditions and limitations issued by the Administrator to ensure compliance with paragraph (a)(1) and (a)(2)(ii).

(b) Notwithstanding paragraph (a), no person shall operate a civil aircraft in the United States at a true flight Mach number greater than 1 unless the operator of the aircraft is conducting operations in compliance with conditions and limitations in a special flight authorization issued to the operator in accordance with § 91.818.

(c) No person may operate a civil aircraft for which the maximum operating limit speed M_{MO} exceeds a Mach number of 1, to or from an airport in the United States, unless—

(1) The person is conducting operations under paragraph (a) of this section;

(2) Information available to the flight crew includes flight limitations that ensure flights entering or leaving the United States will not cause a sonic boom to reach the surface within the United States and the operator complies with these flight limitations; or

(3) The operator complies with conditions and limitations in a special flight authorization to exceed Mach 1 issued in accordance with § 91.818.

■ 5. Revise the introductory paragraph and paragraph (a)(8)(v) of § 91.818 to read as follows:

§ 91.818 Special flight authorization to exceed Mach 1.

For all civil aircraft, any operation in excess of Mach 1 that does not meet the requirements of § 91.817(a) or (c)(2) of this part must be conducted only in accordance with a special flight authorization issued to an operator in accordance with the requirements of this section.

(a) * * *

(8) * * *

(v) Measure the noise characteristics of an aircraft to demonstrate compliance with noise requirements imposed under this chapter, or to determine the limits for operation in accordance with § 91.817(c).

* * * * *

Issued under authority provided by 49 U.S.C. 106(f), 44701(a), and 44715 in Washington, DC.

Bryan K. Bedford,
Administrator.

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