U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Office of the Regional Administrator

2200 S. 216th Street
Des Moines, Washington 98198

April 6, 2023

Brad Pierce
Chair
Centennial Airport Community Noise Roundtable
7565 S. Peoria Street, Unit D9
Englewood, Colorado 80112

Dear Mr. Pierce:

Thank you for inviting us to attend the Centennial Airport Community Noise Roundtable (CACNR) meeting on February 1, 2023. We appreciated the opportunity to provide the Centennial Airport traffic pattern presentation to CACNR and community members and to listen to their concerns.

We received a total of 31 questions and will address them in this letter. Before doing so, we would like to restate a few key items discussed at the CACNR meeting.

First, Federal Aviation Administration (FAA) Air Traffic Control (ATC) is tasked with the safe, orderly, and expeditious flow of air traffic—its primary purpose is to prevent aircraft collisions.

Second, decisions about flight times, number of operations, and aircraft type are in the scope of private industry (not the FAA).

Third, airport traffic pattern procedures are designed to enhance safety and improve the flow of traffic at an airport. At airports with an operating airport traffic control tower, pattern traffic is generally sequenced around other aircraft—especially aircraft that are on an instrument approach procedure or a straight-in approach to a runway. Aircraft are significantly limited in their ability to slow to maintain the required amount of spacing. Absent the ability to slow to maintain or increase the spacing, aircraft must execute S-turns in the pattern, fly extended upwind legs and longer final approach course legs, and, in some instances, execute 270° or 360° turns in the pattern. The use of extended upwind legs and longer final approach course legs are the default technique used by air traffic controllers worldwide in these situations because this method provides the best precision and control over the condition.

The first three questions, below, were submitted to us by Centennial Airport CEO Mike Fronapfel on December 31, 2022. Mr. Fronapfel asked that we include the responses in our letter to you. Our responses follow each question.

> *Question 1: The communities north of Arapahoe Rd, continue to be severely impacted by the increase in aircraft over their homes due to the extended traffic*

pattern implemented after the midair collision. Did the FAA consider the environmental impact on the 1,000's of residents and its alternatives on the quality of the human environment as a result of that change and more specifically, did the FAA consider and meet its NEPA obligations, policy objectives 40 CFR § 1500.2 to the fullest extent possible before changing how the traffic pattern is managed at Centennial Airport and if not, do you plan to consider and meet them?

FAA Response: The FAA conducted an analysis of traffic patterns around Centennial Airport (KAPA) that revealed a significant increase in the volume of visual flight rules (VFR) aircraft flights in the calendar year 2022. It was determined the primary and overriding causal factor for the longer VFR pattern footprint (referred to as the "extended traffic pattern" in your questions) was the increased volume of aircraft competing for the same runway capacity. The FAA did not change how the traffic pattern is managed at KAPA. Rather, as aircraft are added to the VFR pattern, the pattern naturally becomes elongated.

Question 2: In your 12/16 letter you state traffic patterns cannot be confined based on noise abatement. We understand, it could be possible to confine a traffic pattern based on noise abatement through a Part 150 Noise and Land Use Compatibility Study followed by a successful Part 161 Notice and Approval of Airport Noise and Access Restrictions. In lieu of going through these steps, what criteria can be used by the FAA or Airport NOW to confine the pattern area or limit how many aircraft are in the traffic pattern at once? The intent would be to have the aircraft more frequently use a standard pattern area that would reduce the likelihood of having to extend the pattern over the community. (standard pattern for Centennial Airport defined as South of Arapahoe Rd and north of Lincoln Ave and East of I-25)?

FAA Response: Our December 16, 2022, letter to Centennial Airport CEO, Mike Fronapfel, stated:

> *"Extending either the upwind or downwind of traffic in the pattern to Runway 17R results from sequencing traffic or an increased volume in the touch-and-go pattern and, as such, cannot be confined for noise abatement."*

You asked what can be done now to confine the pattern area or limit the number of aircraft in the pattern. As stated earlier in this letter, decisions about the number of aircraft operations fall outside the scope of the FAA. Confining the flight pattern area would require decreasing the number of flight operations, which the FAA cannot require for noise abatement purposes.

To further clarify, Federal Aviation Regulation Part 150 Noise Compatibility Program (NCP) requests are submitted to the FAA by airport operators. KAPA is a public airport, and any limits or restriction to users is not within the FAA's authority.

Question 3: Safety concerns have been expressed not only by the community but also the flight schools that are being directed to extend the traffic pattern over the residential areas. Because of the new procedure, the pattern is extended so frequently that their students aren't getting sufficient training on flying a non-

extended pattern. This becomes a safety concern if the student is expected to fly a normal pattern at other airports and they are unable to stay ahead of the aircraft while transitioning to and from their landing or departure. Another safety concern is by flying over such dense residential areas pilots have limited options in an emergency for safely landing their aircraft and that now it's more likely a midair collision could occur over a neighborhood, unlike the last midair that fortunately occurred over the Cherry Creek State Park. In our opinion having an extended pattern doesn't enhance the safety of the operations when there has been 1 midair accident in over 16.2 million operations at Centennial Airport. Were these factors considered by the FAA prior to the change and if not can they be considered?

FAA Response: There are several facets of this question to address.

First, your question stated, "Because of the new procedure, the pattern is extended...." As explained in our response to Question 1, the FAA did not change how the traffic pattern is managed at KAPA, nor have any new procedures been implemented that direct the extension of traffic patterns over residential areas. The use of extended upwind and downwind legs are the preferred default techniques used by air traffic controllers worldwide in sequencing pattern traffic because this method provides the best precision and control over the condition.

Next, you asked whether the FAA considered the factors you listed prior to the change. As previously stated, the FAA did not change how the traffic pattern is managed at KAPA.

Finally, we are not aware of concerns from local flying schools, and these current ATC practices are used throughout the National Airspace System (NAS).

The following 18 questions were submitted to us by CACNR on behalf of community member Audra Dubler. Our responses follow each question.

Question 4. General aviation, local operations (flight schools) account for nearly 50% of total yearly flight operations at Centennial Airport. A flight pattern or operational sequence change was implemented (2022?) to send these flights over our neighborhoods (north of Arapahoe Road). Where were all these flight operations (approx.150,000/year) prior to the change? Where were the "pattern boxes"? They were NOT over our homes and it's not due to an increase in total operations. (See the attachment labeled Question 1)

FAA Response: As shared during our presentation at the CACNR meeting on February 1, 2023, there was a significant increase in the volume of aircraft in the pattern as opposed to an increase in total operations. As aircraft are added to the VFR pattern, the pattern naturally becomes elongated.

Question 5. With the FAA solving one "perceived" problem (the midair collision in 2021), the FAA created many more: incessant noise with low flying altitude planes 8-10 hours/day, toxic lead concentrations that are poisoning our children, schools,

parks and homes, and a greater probability of ground casualties over dense residential communities. How can the one "perceived" problem override the problems of these listed above? The mid-air crash happened exactly where it should have!

FAA Response: First, as stated earlier, the FAA did not change how the traffic pattern is managed at KAPA. Second, with respect to community concerns raised regarding leaded aviation fuel, the FAA announced a new initiative in February 2022 outlining how the US can safely eliminate the use of leaded aviation fuel by the end of 2030 without adversely impacting the existing piston-engine fleet. The team, named Eliminate Aviation Gasoline Lead Emissions (EAGLE), is a government-industry partnership encompassing fuel producers and distributors, airport operators, and environmental experts, as well as communities supporting general aviation airports. Additional information about the EAGLE Initiative can be accessed at https://www.faa.gov/unleaded.

Question 6. Is this new sequence/pattern change permanent? Is there paperwork or a memo formalizing the changes? May we get a copy?

FAA Response: As stated earlier, the FAA did not change how the traffic pattern is managed at KAPA. Additionally, as shared by the FAA during the CACNR meeting on February 1, 2023, Centennial Airport Traffic Control Tower (APA) ATC received specific refresher training on the requirement of positive control and managing base turns. The intent of positive control is to mitigate potential conflicts with aircraft landing on the parallel runway and help prevent another mid-air collision.

Question 7. The community was never notified or communicated with regarding the pattern or "operational sequence" change that is negatively affecting our homes and schools. Why isn't the community on the ground considered a "stakeholder" when making decisions that will affect adjacent airport communities?

FAA Response: Please see our earlier responses. Additionally, operational growth at an airport is outside the FAA's purview.

Question 8. Can air traffic control direct the flight school traffic to fly south of Arapahoe Road and north of Hess Reservoir? The area south of Lincoln Ave is 99% open space. The x's in the diagram are new or current home developments. (See the attached labeled Question 5)

FAA Response: The lengths of the departure and final legs of an airport traffic pattern are based on the safety of aircraft, and must ensure that aircraft are allowed a stabilized climb and descent. Standard practices for traffic pattern flight are described in the Aeronautical Information Manual, such as propeller-driven aircraft should enter the pattern at and maintain 1,000 feet above ground level (AGL) (based on airport elevation) until abeam the approach end of the runway for landing. Additionally, the manual recommends departure aircraft reach at least 700 feet AGL

and be beyond .5 nautical miles from the departure end of the runway prior to starting a crosswind turn. When a departing aircraft meets these recommendations is dependent on several factors such as aircraft performance, weather, and ambient temperature. The same is true for arriving aircraft; they also must maintain stable flight when turning both the base and final legs and descending for the runway, as turning while slowed is a critical phase of flight, and the pilot must ensure the aircraft is well above stall speed while turning. Thus, directing ATC to regularly confine the crosswind or base legs would become a safety issue since ATC would not be aware of the effects of other factors, such as pilot experience and aircraft characteristics.

Another significant factor that must be considered when predicting traffic pattern size is the number of aircraft in the pattern. Since aircraft following each other in the pattern are generally over one nautical mile apart, maintaining a confined pattern quickly becomes impractical as the number of aircraft increases. Maintaining a reduced or confined traffic pattern regardless of the number of aircraft is unsafe and is not something the FAA will consider.

Question 9. How many planes are allowed in the flight pattern (defined as the touch and go pattern/box)? Can this number be reduced to stop planes flying north of Arapahoe Rd. and south of Lincoln Ave? Can the number of planes in the pattern be regulated (limited) so they do not fly north of Arapahoe and the remaining planes be maintained in a holding pattern on the ground until there is room in the pattern for them to fly? Planes wanting to bypass the waiting period on the ground could be incentivized to purchase a voucher, similar to cars wanting to use a HOV lane, so as not to discriminate those planes wanting to take off. The community is suffering due to the number of "laps" each flight is making in the flight school pattern.

FAA response: As explained earlier, decisions about the number of operations at an airport are not within the FAA's authority. The number of aircraft allowed in a pattern at one time is fluid. It is dependent on controller workload and other factors such as weather, airport environment (e.g., construction), etc., especially during periods of increased traffic volume.

Question 10. Rationale has been given that the FAA needs to stagger the landings, but planes land together all the time. Why would some planes be allowed to land together and not others? Does this mean the FAA could revert to the original touch & go pattern box. (See the attached labeled Question 7)

FAA Response: Simultaneous operations on parallel runways are allowed based on several factors, such as the types of aircraft and the distance between the runway centerlines. Since the concern is aircraft on base leg overshooting final, once the aircraft are established on final, a faster aircraft aligned for Runway 17L might overtake the slower aircraft aligned for Runway 17R and land simultaneously.

Question 11. As a result of the mid-air collision (May '21), the community believes the FAA changed the flight pattern at Centennial Airport. If the FAA did indeed change the flight pattern because of the mid-air collision, then all airports in this country with a similar, pre-collision, flight patterns to Centennial Airport must have also been changed. How many other airports, nationwide were affected because of the collision over Cheery Creek State Park? If no other airports experienced any change, then what's the rationale to change anything at Centennial Airport? Simply put, if the FAA is not changing the flight pattern at every other airport, why do it at Centennial?

FAA Response: As stated earlier, the FAA did not change how the traffic pattern is managed at KAPA. To our knowledge, the final report for that accident has not been issued by the NTSB; therefore, no changes have been made as a result.

Question 12. Since the midair collision in May of 2021, there have been 3 other crashes associated with Centennial Airport: March 9th 2022, August 2022 (pilot killed because he ran out of fuel) and November 9th, 2022. Thankfully nobody on the ground was injured. But it's only a matter of time before a crash occurs in our community. Since the FAA is concerned only with the safety of the pilots and passengers, what government agency is concerned that our community now has 150,000, local, G.A. operations/year, with novice pilots, over dense residential communities where OUR safety is in imminent danger?

FAA Response: We respectfully disagree with your statement that the FAA is concerned only with the safety of pilots and passengers. The FAA created the NAS to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS helps people and goods travel safely and freely. The FAA carries a huge responsibility—our workforce is dedicated to providing the American public with the safest, most efficient, and environmentally responsible civil aviation systems and airspace possible. The FAA is responsible for:

- Directing air traffic throughout the nation and helping to ensure public safety during space launches.
- Airport safety and inspections and setting the standard for airport design, construction, and operation.
- Flight inspection standards and advancing satellite and navigation technology.
- Developing and maintaining the Next Generation Air Transportation System (NextGen).

Question 13. When there are only a few planes in the pattern and no staggering needed, for example 2 planes, why do the planes still fly north of Arapahoe Rd. and south of Lincoln Ave.? In fact, occasionally a single plane in the pattern will fly repeatedly north of Arapahoe Rd. Why? (See the attachment labeled Question 10.)

FAA Response: There are many reasons a pilot might decide to fly north of Arapahoe Road, such as his/her experience level, aircraft performance characteristics, and weather.

Question 14. How do pre- and post- mid-air collision flight patterns compare to the other 100 top general aviation airports in the country? How similar or dissimilar are the pre-and post- crash patterns to other airports? Why was our flight pattern/sequence changed when others were not? For example, the midair collision in Niwot, CO in September '22 that killed 3 people?

FAA Response: As stated earlier, the FAA has not changed the traffic pattern at KAPA. The preliminary NTSB report for the accident at Niwot, Colorado, indicates that neither aircraft were in an airport traffic pattern.

Question 15. Was the mid-air collision (May '21) the result of a faulty flight pattern, tower error or pilot error?

FAA Response: The accident investigation, led by National Transportation Safety Board (NTSB) is ongoing.

Question 16. What is most important to the FAA: pilot safety or innocent children and families on the ground, or both?

FAA Response: Both. Please see our response to Question 12.

Question 17. The Centennial Airport Voluntary Noise Abatement Guidelines map out specific noise sensitive areas. Nearly all pilots (not just flight schools) completely ignore the noise abatement guidelines? How can formal noise abatement be achieved?

FAA Response: Please address your question to KAPA, as it is the appropriate entity to respond to this concern.

Question 18. CACNR is comprised of various group, including airport users (flight schools). Why are the flight schools not obligated to be at every CACNR meeting?

FAA Response: Attendance at meetings is not under the FAA's authority.

Question 19. Can there be ONE spokesperson from the FAA assigned to this situation to get back with our community in a timely manner? Also, can there be a formal acknowledgment of the questions received and a timeline given for a response and/or resolution.

FAA Response: The FAA Noise Portal serves as a conduit for communities to submit their questions and concerns. The CACNR and its associated communities

are encouraged to utilize the FAA Noise Portal to ensure that their questions are researched, processed and answered by the FAA within 30 business days.

Question 20. The community is requesting the FAA's attendance at each roundtable meeting either in person or remotely until this issue is resolved. Will the FAA agree to that request?

FAA Response: FAA representatives can participate in roundtable meetings to provide technical information and advice. The most productive roundtables invite FAA representatives on an as-needed basis, providing a clear agenda topic with sufficient advance notice to enable FAA to identify appropriate representation and prepare information.

Question 21. When did flight schools get instituted to Centennial Airport and when did touch and goes start at the airport?

FAA Response: Please address your question to KAPA, as it is the appropriate entity to respond to this concern.

The additional 10 questions below were raised by the public at the February 1, 2023, CACNR meeting and submitted to us by CACNR. Our responses follow each question.

Question 22. Pinning down the cause of the increase in the flight pattern north of Arapahoe Road, is it possible there was a slight overcorrection in what the FAA has been communicated to air traffic controllers after the mid-air crash? Is it possible for the air traffic controllers to back off a bit so we can have more parallel landings?

FAA Response: Please see our response to Question 1.

Question 23. How does the FAA factor in the safety of residents on the ground when it makes decisions?

FAA Response: Please see our response to Question 12.

Question 24. Did the FAA coordinate with Arapahoe County or other authorities when it expanded the Airport Influence Area extending pattern traffic north of Arapahoe Road?

FAA Response: Aircraft were previously overflying the area north of Arapahoe Road prior to May 2021. Please see our response to Question 1.

Question 25. What is the capacity for the number of planes that can fly in the area at any given time?

FAA Response: Please see our response to Question 9.

Question 26. How does the FAA determine if there are too many planes in the pattern?

FAA Response: Please see our response to Question 9.

Question 27. Can the FAA extend the pattern south or in any other direction?

FAA Response: As explained earlier (the fourth paragraph of this letter) and depending on traffic, ATC already has aircraft fly farther to the south by extending the upwind leg.

Question 28. Can the FAA implement formal noise abatement?

FAA Response: Please see our responses to Questions 2 and 17.

Question 29. Is the increase in the flight pattern north of Arapahoe Road related to Metroplex?

FAA Response: No, please see our response to Question 1.

Question 30. How does the FAA determine the capacity/growth limit for Centennial Airport?

FAA Response: As discussed earlier, decisions about the number of operations are in the scope of private industry (not the FAA).

Question 31. Has the FAA conducted an environmental study for Centennial Airport? Has the FAA participated in any other federal, state, or local air quality or health studies?

FAA Response: The FAA conducted environmental reviews on instrument flight procedure changes that were implemented in 2020, 2021, and 2022. These reviews were unrelated to the airport traffic pattern operations.

Thank you for this opportunity to review and respond to your concerns. We look forward to continued communication with the CACNR.

Sincerely,

Grady Stone
Regional Administrator
Northwest Mountain Region