CITY OF COTTONWOOD
827 N MAIN STREET
COTTONWOOD, AZ

August 26, 2019

RE: Airport Noise Action Plan

Dear Airport Commissioners,

Thank you for the time and dedication that you have put into developing the Airport Noise Action Plan. I believe that this plan reduces the impact of aircraft noise to our citizens while remaining compliant with federal grant assurances. At the City Council's work session held on Tuesday August 13, 2019 the Council directed staff to proceed with the plan as presented. The Council did ask that in addition to supporting the flight schools we also reach out to other airports in northern Arizona to see if they are interested in developing an auxiliary training fields. I will be reaching out to them in the next several weeks.

You may remember that during discussions of the action plan the commission directed that signs be installed at the airport stating the proposed Traffic Pattern Altitude (TPA) of 1,000' Above Ground Level (AGL). I believe the commission provided this direction in full belief that the TPA would be increased to 1,000' from the existing 800' AGL. Also, during discussions the Commission directed staff to alter the Airport Facility Directory (AFD) to adjust the TPA from 800' to 1,000' and the AFD was adjusted accordingly. However, at the Airport Commission's meeting held on June 26, 2019 the commission directed staff to leave the TPA at 800' AGL. The action plan went to the City Council with the TPA remaining 800'. After the Council's approval of the action plan it was discovered that the Aeronautical Information Manual (AIM) Section 4.3.3.a.1 states: unless otherwise published "Propeller-driven aircraft enter the traffic pattern at 1,000 feet" AGL. For these reasons the TPA will be adjusted to 1,000 feet AGL.

Attached to this letter are the:

- Airport Noise Action Plan
- A timeline of public meetings regarding the action plan
- Frequently asked questions

Staff will proceed with enacting the action plan and a report on the status of the plan will be on the agenda for each commission meeting until the plan is complete.

Sincerely,

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City of Cottonwood Airport Noise Action Plan

The items described herein are meant to reduce the noise impact to residences as much as possible while still complying with the FAA' Grant Assurances.

1) Goal: reduce noise over residential areas
    a. Place signage at the airport to remind pilots of the Airport Noise Action Plan. This may remind pilots who were not aware that pilots are requested to take off to the north if safely possible.
    b. Keep in place the current policy that the calm wind runway is 32. This was done to encourage pilots to take off to the north where residents are furthest from the runway.
    c. Work with the FBO to communicate with pilots over the radio to remind them of the preferred procedures.
    d. Support the flight schools in developing an auxiliary training field in northern Arizona.
    e. Request that pilots not conduct midfield or intersection takeoffs. This will increase the altitude of the aircraft by a few hundred feet over the areas of concern. However, this will not impact the altitude of aircraft doing touch-and-go's.
    f. During the upcoming Airport Master Plan process explore the possibility of extending the runway to the south in order to increase the height over the residences to the north.
    g. Work with many of the bush pilots and training groups in northern Arizona to develop a non-paved landing field for training purpose away from residential areas.
    h. Update the Airport Facilities Directory (AFD) now the Chart Supplement Guide per the items above. Below are the current airport remarks in the AFD as well as the proposed:
        i. CURRENT AIRPORT REMARKS: AIRPORT REMARKS: Unattended. Fuel avbl 24 hrs with major credit card. Emergency phone 928–634–4246 (Police Dispatch). Wildlife on or in vicinity of arpt. Parachute Jumping. Hang gliders invof arpt. No touch-and-go 30 minutes before SS until 30 minutes after dawn. Acft departing Rwy 14 maintain heading for 1 NM byd departure end and 500´ AGL prior to turning. Departing Rwy 32 maintain rwy heading for .6 NM and 500´ AGL prior to turning. Check CTAF for local flight training restrictions. Rwy 32 designated calm wind rwy. TPA—helicopter 4060(500), single 4360(800), multi 4560(1000), turbine 5050(1500).
        ii. PROPOSED AIRPORT REMARKS: Unattended. Fuel avbl 24 hrs with major credit card. Emergency phone 928–634–4246 (Police Dispatch). Wildlife on or in vicinity of arpt. Parachute Jumping. Hang gliders invof arpt. No touch-and-go 30 minutes before SS until 30 minutes after dawn. Noise Action procedure in effect. No

midfield departures. Acft departing Rwy 14 maintain heading for 1 NM by departure end and 500' AGL prior to turning. Check CTAF for local flight training restrictions. Rwy 32 designated calm wind rwy. TPA—helicopter 4060(500), single 4360(800), multi 4560(1000), turbine 5050(1500).

2) Goal: Prevent future incompatible growth around the airport.
    a. Meet with the Planning and Zoning Department to develop a method of identifying developments which may not be compatible based on proximity to the airport.
    b. Explore the possibility of developing a City Ordinance which would require landlord's to disclose to potential tenants in a similar method as state law requires when selling a property.
    c. Develop a program to inform realtors, property managers and others of the areas of the City which may be impacted by the airports.
    d. Complete a Master Plan for the airport which explores the community's desires and concerns for the future of the airport.
    e. Develop a video to be placed on the airport's website advising pilots of the noise action procedures.
    f. There are two remaining residential properties located north of the airport which are not compatible due to the proximity to the airport. Work with these owners to either dedicate an avigation easement and/or rezone to an appropriate zoning.
    g. Place a map on the Airport's website displaying the areas which can reasonably be expected to be impacted by aircraft noise.
3) Accountability on the items listed above:
    a. Place this action plan on the Airport Commission's agenda each month until the action plan is completed.
    b. Provide a written update to the City Council monthly on the progress of the Noise action plan until all items are complete.

Timeline of Noise Action Meetings

- April 17, 2018 – Public meeting on Airport Noise held at the Airport
- September 5, 2018 – Commission meeting, citizens speak during the call to the public
- October 3, 2018 – Airport Commission (AC) meeting to appoint Noise Action Committee
- October 23, 2018 – Noise Action Committee meeting (not open to public)
- November 7, 2018 – Public meeting on Airport Noise held at the Council Chambers
- November 9, 2018 – Notification of proposed changes sent to AC, Airport Notification list, all attendees of the public meeting and posted at the airport
- November 27, 2018 – Clarkdale Town Council meeting to discussed proposed solution
- November 28, 2018 – Noise Action Committee Meeting (not open to public)
- December 5, 2018 – AC meeting, directed staff to obtain FAA written approval
- January 9, 2019 – AC meeting to vote on proposed alterations, safety issue was discovered and alternate pattern was dismissed.
- February 13, 2019 – Met with four of the larger flight schools in the Prescott area to discuss solutions and a potential informal agreement to which they were receptive to.
- March 6, 2019 – AC meeting to discuss noise Action solutions, AC directed staff to present final plan to the AC in the future.
- May 29, 2019 – AC work session to propose Airport Noise Action Plan
- June 26, 2019 –AC Meeting approved the Noise Action Plan
-August 13, 2019 – City Council work session on Action plan

Frequently Asked Questions

1) Why training (touch-and-go) activity cannot be limited or restricted completely?
    a. The City has investigated this option in the past and the FAA clarifies its stance in the FAA Airport Compliance Manual Order 5190.6B

> ***14.8. Restrictions on Touch-and-Go Operations.*** *A touch-and-go operation is an aircraft procedure used in flight training. It is considered an aeronautical activity. As such,* ***it cannot be prohibited by the airport sponsor without justification****. For an airport sponsor to limit a particular aeronautical activity for safety and efficiency, including touch-and-go operations, the limitation must be based on an analysis of safety and/or efficiency and capacity, and meet any other applicable requirements for airport noise and access restrictions explained in chapter 13 of this Order, Airport Noise and Access Restrictions. (emphasis added)*

2) Why Does the FAA have any say in the Cottonwood Airport?
    a. The FAA provided approximately 90% of capital project funding at the Cottonwood Airport through grants. The grants come with requirements called 'Grant Assurances' which among other items protect the rights of pilots and the aviation public. If the Airport violates any of the grant assurances the City risks any future federal funding as well as the possibility of needing to repay past grants. These grants tend to be about $150,000 per year.
3) Why do the planes keep circling?
    a. The 'circling' as reference by many citizens is a training activity known as a touch-and-go. This is pilots practicing the most stressful part of flying the takeoff and landing. As mentioned above this is an important training activity that is protected by the FAA.
4) Why don't the planes fly over an area where there are no houses?
    a. When the Airport was established in 1940 planes could very likely fly out without flying over any residential neighborhoods. Unfortunately, due to growth in the Verde Valley there is no way for an aircraft to fly out of the airport without flying out over some residential area. Currently the majority of noise complaints come from Verde Village Unit 8 which is located just 1,400 feet south of the runway threshold. For this reason the current noise abatement procedure is that runway 32 is the calm wind runway meaning that if the winds allow pilots should take off to the north. The nearest homes to the north are more than 4,000 feet from the runway threshold. Also, the nearest homes to the north without an avigation easement on the property are 6,600 feet from the runway.
5) Can the planes be asked to put mufflers on the engines?
    a. This is not a possibility for two reasons. First, the City does not regulate the air. Any object in powered flight is under the jurisdiction of the federal government and cannot be regulated by the City. Second, the FAA, which does regulate

aircraft will not ask a pilot to muffle an aircraft because this will impact the power of the aircraft and therefore create a substantial safety issue especially on takeoff.

b. *"Aircraft need more engine power in order to attain a safe level of flight. Also, if aircraft fly at lower power levels they will remain closer to the ground for longer periods of time, thus more noise exposure to larger area."* FAA - https://www.noisequest.psu.edu/communitytools-faq.html

6) What has already been done?
   a. The City of Cottonwood has attempted to protect citizens from noise complaints by conducting the following: First, airports in the State of Arizona are required to complete an Airport Vicinity Map on file with the Arizona Department of Real Estate which displays properties which can reasonably be expected to be impacted by an airport. Cottonwood completed its Airport Vicinity Map in January of 2006 per ARS-28-8486. The map can be found at the Department's website at http://www.re.state.az.us/airportmaps/Public_Airports/Cottonwood_Airport_Traffic.pdf . The Map is also recorded with the Yavapai County Recorder's Office as Book 55 of Maps and Plats Page 98. Second, new develops north of the airport have dedicated avigation easements so that all property owners are notified of the airport when purchasing a home. Finally, noise complaints are logged and mapped in order to find which areas are being impacted the most.
   b. Pilots have been asked to take off the north when safe to do so in order to minimize impacts on the residences nearest the airport.
   c. Avigation Easements have been obtained for many developments near the airport since 2017.
7) The noise appears to have increased over the past year, what has led to the increase in noise?
   a. Although the City cannot confirm that the noise has increased there are a few factors which might contribute to an increase. 1) A better economy means that more people are flying and learning to fly which may have increased training activity. 2) More people flying means that more flight schools have moved to northern Arizona as well as the existing schools have increased their operations. 3) In August 2018 the Prescott Airport closed one of their three runways which likely increased traffic in Cottonwood for that month and may have raised awareness to the aircraft noise.
8) Why can't the flight schools use other airports?
   a. There are many flight schools located throughout northern Arizona and airport management has been in contact with four of the largest. The schools have assured us that they are also utilizing the following fields in addition to Cottonwood: Seligman, Williams, Payson, Bagdad and Prescott.

b. The largest flight school in Northern Arizona is Embry-Riddle and they have told us that 1% of their operations comes to Cottonwood.
c. Prescott is the 35th busiest airport in the Country and very congested and the 3rd busiest in the state of Arizona. The Prescott airport has 272,000 operations per year compared to Cottonwood's 19,000 per year. This level of congestion forces some flight schools to seek other airports for training (Source: http://www.prcairport.com/airport-information/public-information/).

9) What else could the City Consider as solutions in the future? The items listed below has been considered by the Airport Commission at their meeting held on June 26, 2019, but the Commission advised against these items for various reasons.
   a. Request that pilots departing to the north turn as soon as safely possible. Currently pilots are asked to climb to 500 feet prior to turning. This alteration will result in some aircraft following a tighter, inner route compared to other aircraft. This may reduce the number of aircraft over the outer residential areas, however it will increase the amount of overhead aircraft over the inner areas. The inner areas include residential as well as commercial, industrial and residential areas with avigation easements. Although fewer aircraft will be able to take the inner route the aircraft which are able to turn sooner will likely be louder and lower than other aircraft. The Inner route is also over the two tallest buildings in the City which are not tall enough to be a safety concern however, people in these buildings may hear more than others on the ground.
   b. Develop a non-written agreement with the larger flight schools in Cottonwood, Prescott and Deer Valley to reduce the noise impact to the community. This is not an enforceable agreement, however it will be a standard for trainers who wish to make as small of impact on the community as possible without giving up on their rights to utilize the airport. The agreement would likely include the following:
      i. "Touch-and-Go's and 'Stop and Go' operations would be limited to Mon-Fri from 10 am to 5 pm." Taxi-back training may occur outside of this time period. This may actually increase the number of flights during this time period, but significantly lessen it outside of this time frame. This will also lengthen the time in between each aircraft pass outside of this timeframe. They may be willing to send a maximum of two aircraft at a time to Cottonwood. This agreement has been conceptually reviewed by the FAA with tentative approval, but has been forwarded for more investigation. The FAA will likely approve as long as the agreement is not mandated, meaning an pilot may choose to ignore it, but pilots wishing to be courteous will understand how to do so.
      ii. Support the flight schools in developing an auxiliary training field in northern Arizona.

c. Adjust the Traffic Pattern Altitude (TPA) from 800 feet to 1,000 feet. This will increase the height of the aircraft, but only for a short time while in the pattern. This will not impact the residences located near the ends of the runway.

Other General FAQs: In 2017 the FAA published a page on aircraft noise specifically for an Airport in Chicago. Although not all of the questions on this page are relevant to the Cottonwood area many residents have asked some of the same questions. Below are the answers provided by the FAA. Some of the questions and answers have been modified slightly to reflect conditions in Cottonwood.
(Source: https://www.faa.gov/airports/airport_development/omp/FAQ/Noise_Monitoring/#q17)

1) Q: What is a noise contour?

    a. FAA Response: Noise contours depict levels of aircraft noise surrounding an airport. The FAA analyzed noise impacts for the OMP in the EIS using established aviation industry methods. The noise contour developed for the OMP for build-out conditions is called the Build-Out Noise Contour. The noise contour is used for land use compatibility and noise exposure and mitigation purposes. The Build-Out Noise Contour was approved on September 30, 2005, as part of the Record of Decision (ROD).

2) Q: What is the 65 DNL?

    a. FAA Response: As FAA's primary metric for aviation noise analysis, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of the day-night average sound level (DNL) in decibels (dB). The 65 DNL is the Federal significance threshold for aircraft noise exposure. See the response to question #4 for more detail.

3) Q: Who decided that 65 DNL was the right threshold?

    a. FAA Response: DNL has been widely accepted as the best available method to describe aircraft noise exposure and is the noise descriptor required by the FAA for use in aircraft noise exposure analyses and noise compatibility planning. The DNLhas also been identified by the U.S. Environmental Protection Agency (USEPA) as the principal metric for airport noise analysis. Day-Night Average Sound Level (DNL) is a 24-hour equivalent sound level. DNL is expressed as an average noise level on the basis of annual aircraft operations for a calendar year. To calculate the DNL at a specific location, Sound Exposure Levels (SELs) (the total sound energy of a single sound event) for that particular location are determined for each aircraft operation (landing or takeoff).

The SEL for each operation is then adjusted to reflect the duration of the operation and arrive at a “partial” DNL for the operation. The partial DNLs are then added logarithmically — with the appropriate penalty for those operations occurring during the nighttime hours — to determine total noise exposure levels for the average day of the year.

b. As directed by the U.S. Congress in the Aviation Safety and Noise Abatement Act (ASNA) of 1979, the FAA and other branches of the federal government have established guidelines for noise compatibility based on annoyance. FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, Appendix A, paragraph 14.3, page A-61, defines the threshold of significance for noise impacts as follows. "A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe".

4) Q: Who said the FAA model was correct? What modeling technology was used?
   a. FAA Response: The FAA’s Integrated Noise Model (INM) produces DNL noise contours. INM is a computer model used to develop aircraft noise exposure maps. INM is the industry standard for calculating the level of aircraft noise at and around airports. INM uses a database of aircraft noise characteristics to predict DNL based on user input on the types and number of aircraft operations, annual average airport operating conditions, average aircraft performance, and aircraft flight patterns.

5) Q: I took readings in my back yard with a decibel meter that registered levels in the 70s, 80s, and 90s. How can the 65 DNL contour be correct when my house is located outside of it and I am getting such high readings?

   a. FAA Response: Readings of 70+ decibels are not the same as the DNL.

   b. Day-Night Average Sound Level (DNL) is a 24-hour equivalent sound level. DNL is expressed as an average noise level on the basis of annual aircraft operations for a calendar year. To calculate the DNL at a specific location, Sound Exposure Levels (SELs) (the total sound energy of a single sound event) for that particular location are determined for each aircraft operation (landing or takeoff). The SEL for each operation is then adjusted to reflect the duration of the operation and arrive at a "partial" DNL for the operation. The partial DNLs are then added logarithmically — with the appropriate penalty for those operations occurring during the nighttime hours — to determine total noise exposure levels for the average day of the year.

6) Q: Why is it that pilots have so much trouble sticking to the preferential flight tracks, which are part of the Fly Quiet program?
    a. FAA Response: Wind drift accounts for some variability in the departure aircrafts along a track.

7) Q: Is the FAA considering a change in the algorithm calculation being used to measure noise changes?

    a. FAA Response: The FAA is undertaking research to analyze public perception of noise impacts from air transportation. The FAA is continuing its work on surveying community residents around airports to inform an update to the scientific evidence on the relationship between aircraft noise exposure and its effects on communities around airports. FAA anticipates completing the survey in late 2016 and the analysis of survey results in early to mid-2017.

8) Q: I understand that the FAA now requires quieter jet engines for new aircraft. Is there any chance that the law will change to mandate quieter engines on existing aircrafts?

    a. FAA Response: We are unaware of any pending legislation that will further regulate aircraft engine noise levels.