

# **FAR PART 150 STUDY**

## CHANDLER MUNICIPAL AIRPORT



### **What is a Part 150 Study?**

The Federal Aviation Regulation (FAR) Part 150 Noise Study is a voluntary noise exposure and land use study that airports undertake to address noise and land use compatibility. The City of Chandler completed its first FAR Part 150 Study in 1999. This is an update of the previous study to reflect the changes that have occurred.

The Study, whose components are set by the Federal Aviation Administration (FAA), allows an airport to develop programs to increase compatibility of land uses around the airport. This compatibility can be accomplished by two primary avenues: noise abatement alternatives and land use alternatives.

### **FAR Part 150 Noise Compatibility Study**

The first step in the Study process is to identify the existing and potential future noise exposure (at least five years in the future). This is accomplished by developing noise contours based on the aircraft operations occurring at Chandler Municipal Airport in the present, as well as predicting what those aircraft operations will be in the future. The noise contours are lines that depict equal levels of aircraft noise exposure around the airport. These noise contours are overlaid on updated land use maps to determine what land uses are present in the highest noise levels around the airport. The result is the Noise Exposure Map (NEM) which sets the baseline conditions for which alternatives will be developed to address the identified noise levels.

The second step in the process is the evaluation of potential alternatives to reduce the noise impacts around the airport. The alternatives evaluated include both aircraft operational procedures (abatement) as well as land use measures (mitigation). Recommendations may include the establishment of noise abatement flight corridors, sound insulation of homes, and working with the local jurisdictions to prevent future development in the most noise impacted areas.

The final product of the Study is a Noise Compatibility Program (NCP). The NCP contains all the alternatives that were considered in the Study and makes recommendations on which alternatives should be implemented. The NCP is reviewed by the FAA, and each specific recommended alternative is reviewed in detail. Those recommendations approved by the FAA requiring funding will become eligible for federal funds in the implementation phase.



## Roles and Responsibilities

### CHANDLER AIRPORT ADMINISTRATION

The City of Chandler Airport Administration is responsible for planning and assisting with the implementation of actions designed to reduce the effect of noise on residents of the surrounding area. Such actions include noise abatement ground procedures, land acquisition, and other measures that do not discriminate, create an unsafe situation, impede the management of the air navigation system, or interfere with interstate or foreign commerce. Any operational procedure must be approved by the FAA.

### FEDERAL AVIATION ADMINISTRATION

The FAA's Air Traffic Control is responsible for the movement of aircraft on both on the airfield and in the air and has the authority to implement noise abatement operational procedures which have been recommended by the airport sponsor and approved by FAA. Any noise mitigation procedure must be consistent with air safety and all legal requirements.

### LOCAL GOVERNMENTS

The local governments have the responsibility to provide for land use planning, zoning, and housing regulations that limit land use near the airport to those compatible with airport operations.

### PILOTS

The pilot has the ultimate responsibility for the operation of the aircraft. Although certain noise mitigation procedures are set by the airlines, and the FAA assigns the flight track and altitude, the pilot (both commercial and general aviation) still maintains the authority to make the final judgment. In general, it is up to the pilot to adhere to noise abatement procedures.

### RESIDENTS AND PROSPECTIVE RESIDENTS

The residents in areas surrounding an airport should provide input regarding noise concerns and strive to understand procedures that can and cannot be taken to minimize the effect of aircraft noise. Future residents should acquaint themselves with noise and flight corridor information available through the Airport Administration.

## MEASUREMENT LOCATIONS



## Aircraft Noise Modeling

The standard methodology for analyzing the noise conditions at airports involves the use of a computer simulation model. The FAA has approved two models for use in preparing noise contours - NOISEMAP and the Integrated Noise Model (INM). NOISEMAP is used primarily at military airports, while the INM is used primarily at civilian airports. The INM version 7.0a, the latest version of the model, was developed by the Transportation Systems Center of the United States Department of Transportation at Cambridge, Massachusetts and is undergoing continuous enhancement. Airport specific data that is used in the model to develop the noise contours includes:

**DAILY OPERATIONS:** An aircraft operation is defined as an aircraft takeoff or landing. The total number of aircraft operations over a 12-month period is determined. The yearly operations are then divided by 365 to generate the annual-average day operations, which are used for noise modeling.

**AIRCRAFT FLEET MIX:** The aircraft fleet mix includes the various types of aircraft using the airport. Identifying the fleet mix is important because certain aircraft are noisier than others.

**RUNWAY USE:** Wind speed and direction together with runway length are the primary factors that determine the direction of flow of aircraft at the airport. The air traffic controllers at the airport designate the flow of aircraft arrivals and departures into the wind. Under calm wind conditions, air traffic control usually has more flexibility to vary the directional flow of aircraft at the airport.

**FLIGHT CORRIDORS AND CORRIDOR USE:** Flight corridors are established for use in the model by obtaining flight track information from air traffic controllers. These corridors represent the paths that aircraft follow when approaching or departing the airport.

**DAY/NIGHT USE:** Following FAA guidelines, day is defined as 7 a.m. to 10 p.m. with night being 10 p.m. to 7 a.m. The number of aircraft that use the airport during daytime or nighttime hours is an important factor in the calculation of aircraft noise exposure. The contribution of each nighttime operation to the total noise exposure is weighted to account for the greater annoyance of noise at night.

## Noise Measurements

The data collected from noise measurements is primarily used to provide information to the Study on the ambient noise levels around the airport and to provide information on the noise levels associated with single event operations at a particular location. In addition, onsite noise monitoring information does allow the study team to compare single event and cumulative noise levels with noise exposure levels developed by the INM. Contrary to popular belief, the noise measurement data is not used to develop the noise contours. The FAA does not allow for the use of the noise measurement data in this way and sets a strict requirement that only their approved computer models are used for noise contour development.

Noise measurements were conducted for Chandler Municipal Airport's FAR Part 150 Study during two different periods: May 20-22, 2008, and March 24-26, 2009. Several noise monitors were used to collect noise measurement data at a total of 13 sites, located around the airport, during the

collection periods. The first collection period collected noise measurements at eight sites, and the second collection period collected noise measurements at five sites. The noise measurement data conclusions will be presented at the next public open house for the Study.

## Noise Complaints

Noise complaints are an important input to any airport and serve as the pulse of the community for the airport and provide the airport sponsor with key information on noise concerns. Noise complaints are being reviewed as part of this Study to provide a clear picture of the concerns of the local communities. A summary of this data will be provided in the NEM report submitted to the FAA. As with noise measurements, it is important to state that noise complaint data does not influence the noise contours or their development. Noise contour development is based on operational data.

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### Frequently Asked Questions

#### *Why Prepare an FAR Part 150 Study?*

Airport sponsors, such as the City of Chandler, have the option of implementing noise mitigation programs. Should the sponsor wish to use Federal funding to pay for the program, the sponsor is required to base the program on an FAA-approved noise exposure map and a noise compatibility program.

#### *What will the Study include?*

The Study will identify existing and future flight corridors; will develop aircraft noise exposure maps for current and future conditions; will evaluate air traffic control procedures that could be implemented to reduce noise exposure over residentially developed areas; will consider land use controls that could be established to reduce future incompatible land uses from being developed within high noise areas; and will evaluate means to mitigate noise impacts within high noise exposure areas.

#### *How long will the Study take to complete?*

The Study began in January 2008 and is scheduled for submittal to the FAA by the end of 2009. Implementation of the Study recommendations will occur following review and approval of the reports by the FAA. The review period by the FAA is set at 180 days from the date of submittal.

More information about the Study can be found on the Study's website at:

<http://www.wilbursmith.com/chandlerpart150/>



### How can I be involved?

During the Study, workshops and public hearings will be held. Study progress will be shared during these sessions and the public is encouraged to provide input. The dates and locations of these sessions will be published in local newspapers, on the City's website, and on the Study's web site.

### Advisory Committee

A Part 150 Advisory Committee representing organizations that use the airport as well as affected political jurisdictions, agencies and neighborhoods has been formed to provide feedback and comment throughout the Study. The Part 150 Advisory Committee will meet several times to review analysis and offer suggestions about the recommendations being considered. Membership to the committee is by invitation; a list of the invited members is provided on the study's website.

### STUDY TIMEFRAME

