PRESERVING General Aviation Airports



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A Technical Guide for Compatible Land-Use Planning in North Texas





What is NCTCOG?

The North Central Texas Council of Governments (NCTCOG) is a voluntary association of, by and for local governments established to assist local governments in planning for common needs, cooperating for mutual benefit and coordinating for sound regional development. NCTCOG's purpose is to strengthen both the individual and collective power of local governments and to help them recognize regional opportunities, eliminate unnecessary duplication, and make joint decisions.

NCTCOG serves a 16-county region of North Central Texas which is centered on the two urban centers of Dallas and Fort Worth. NCTCOG has over 240 member governments including 16 counties, numerous cities, school districts, and special districts.



NCTCOG Aviation

The NCTCOG aviation program is engaged in several initiatives benefitting the region's aviation facilities and surrounding communities. These include the development of a Regional General Aviation and Heliport System Plan funded by the Federal Aviation Administration; planning for surface access to regional aviation facilities; and promoting aviation education opportunities to primary and secondary students. Additionally, staff oversees the Air Transportation Technical Advisory Committee (ATTAC) which is made up of regional airport managers and aviation stakeholders. The purpose of the Committee is to oversee the Regional General Aviation and Heliport System Plan and advise NCTCOG staff on regionally significant issues affecting the general aviation and heliport system. This handbook is a resource to help both city and airport officials establish sustainable long-range plans for the region's airports. Funding for this effort was provided by the Federal Aviation Administration through the Regional General Aviation and Heliport System Plan.

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NCTCOG photos

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Glossary

Term	Description
ACRP	Airport Cooperative Research Program
ALP	Airport Layout Plan
AOPA	Aircraft Owners and Pilots Association
AOZ	Airport Overlay Zone
AOZO	Airport Overlay Zoning Ordinance
APA	American Planning Association
DNL	Day-Night Noise Level (Average)
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
IFR	Instrument Flight Rules
NCP	Noise Compatibility Plan
NCTCOG	North Central Texas Council of Governments
NEM	Noise Exposure Map
OE	Obstruction Evaluation
TxDOT	Texas Department of Transportation
VFR	Visual Flight Rules

Introduction



Since 1981, an average of 262 airports per year have closed throughout the United States.¹ These closures occur for a variety of reasons, including urban encroachment. The threat of urban encroachment is ever present in North Texas. The North Central Texas Council of Governments (NCTCOG) estimates by 2035 the total population of the region will have increased to 9.8 million people, a 50% increase from the current population of 6.5 million.

While most of the region's airports currently have enough capacity to operate freely, the increasing infrastructure requirements needed to sustain such a large future population could put a significant strain on the airports' ability to operate effectively. Therefore, the time for city and airport staff to prepare their airports for the future is now.

In 2012, the Texas Department of Transportation (TxDOT) estimated Texas general aviation airports had an economic impact of \$14.6 billion.² This figure emphasizes the economic importance of protecting each airport to ensure the fiscal health of the region. This handbook has been prepared to educate airport and city officials on the intricacies involved in airport zoning.

The handbook is not designed to make the reader an expert in airport zoning matters, but to assist in the development of practices that will eliminate or discourage encroachment around their airport. The handbook attempts to take a simplistic approach to introducing land-use concepts, allowing the reader to better understand similar information found in more detailed federal and state documents.

1 AOPA: General Aviation Information and Statistics; Airports and Landing Areas Abolished 2 TxDOT: Economic Impact Study, 2012

Planning: The Keystone of Compatible Land Use



Airport Land-Use Zoning

The first step to protecting an airport from encroachment is the local government's ability to plan for compatible land use around the airport. In general, historical land-use plans prepared by municipalities haven't taken into account the planning implication for airport development needs.

Zoning is the most effective tool that cities can utilize to ensure that the airport is protected from incompatible land uses. A properly zoned airport that utilizes compatible land uses will eliminate many of the noise, operational, and safety concerns that may arise due to poor planning. As the rate of population and development growth in the Dallas-Ft Worth region continues to increase, it will become increasingly important for city and airport officials to plan for compatible land uses around their airports. Noncompatible land use can lead to the airport's closure as seen in **Figure 1**. Integrating compatible land-use practices into development decisions is key to avoiding future airport encroachment that may result in the facilities closure.



Figure 1 Saginaw Airport (Closed in 2002)

Instituting proper zoning techniques is often the most effective and popular tool that a municipality uses in combating airport encroachment and ensuring compatible land uses. Zoning promotes compatibility while leaving the property under private ownership and on the tax rolls. However, once a specific zoning ordinance is passed, it may not be permanent. Future ordinances can be passed eliminating the initial zoning's intent, further emphasizing the need to have open communication between airport and city staff members.



The dense multifamily development in Irving illustrates the rapid population and development growth in North Central Texas, further emphasizing the need for effective land-use planning.

Source: NCTCOG

There are several different methods to help prevent incompatible land use near airports. The simplest method would be to disallow any development within two miles of the airport; but for many airports this step is impossible to implement due to existing encroachment around the airport's property. However, there are other options such as avigation easements and land acquisition, which can be helpful tools for airport sponsors and city officials to pursue.

Avigation Easements

Avigation easements are the right of overflight in the airspace above, or in the vicinity of, a particular property. Easements are sometimes used to promote compatible land use because they allow municipalities to acquire the rights to the land of private owners at a reasonable cost. The advantages of this option are that only a fraction of the cost of the property value is paid to the owner, the easements can be made permanent, and the property remains with the private owner and on the local tax rolls.

Often the least popular and most expensive option for ensuring compatible land use, land acquisition, is accomplished through:

- Negotiation with owners
- Voluntary offering by owners
- · Condemnation by the local government entity

While there are federal programs that will assist with the cost of purchasing the property, it is far less expensive to establish zoning that encourages compatible land use.³

The first step to ensuring effective zoning around the airport is to look at the city's comprehensive plan. A comprehensive plan lays out the long-term development goals and policies for the community and is an effective way to gauge the future growth potential of the airport. When combined with a simultaneous review of the airport's master plan, city officials will be able to determine if the future development plans of the airport are compatible with the city's designated land uses.

Figure 2 is an example of future zoning districts that are found in the City of Arlington's Comprehensive Plan. As residential districts tend to be less tolerant of frequent aviation operations, commercial and other non-residential zoning districts are best suited near airports. Some examples of compatible land uses near airports are:⁴

- Commercial
- Industrial
- Park/recreation
- Business park/retail
- Agriculture

While there certainly are additional acceptable land uses deemed compatible for airports, each should be examined on a case-by-case basis to determine suitability. Conversely, land uses of concern to airports include those that attract high concentrations of people, use tall structures, create visual obstructions or attract wildlife and birds. Therefore, city officials need to assess the compatibility of land use in great detail to determine the appropriate zoning near an airport.

3 FAA: Land Use Compatibility and Airports4 TxDOT: Airport Compatibility Guidelines 2003

Figure 2 City of Arlington Zoning

Arlington Future Year Zoning 2025



FAA – Part 150 Study

One of the most popular and effective planning tools available for reducing aircraft noise on the environment and ensuring compatible land use around the airport is a Part 150 study. A Part 150 study is an in-depth process that involves working with the community to address its concerns regarding airport noise. It is a voluntary program that an airport may undertake to seek a balance between operational needs and the resulting noise impacts on the surrounding communities. An added benefit of performing a Part 150 study is that federal funding is available for the study and the subsequent implementation of approved sections of the local program. In general, a typical Part 150 study will include six major steps and two main deliverables.

1. Identify Noise and Land-Use Issues and Concerns

This step plays a vital role in alerting the airport owners to any unique noise impacts, on and off airport planning issues, community concerns, and/or airport user issues.

2. Define Current and Future Noise Exposure

The main goal of this step is to define the levels of noise exposure around the airport to include current and future levels (minimum of five years) of aircraft noise. The FAA requires that noise be measured in the Day-Night Average Sound Level (DNL). The product of this step is Noise Exposure Maps (NEM), the first of two main products of the study.

3. Evaluate Alternative Measures

Step three is the evaluation of all feasible options to abate noise and manage the encroachment of incompatible land uses near the airport.

4. Develop a Noise Compatibility Plan (NCP)

This plan will discuss in detail both preferred noise abatement and land-use management measures, as well as a plan for the implementation of these measures. The implementation plan also includes the estimated cost to the airport, FAA, local unit of government, etc., for each of the recommended measures. This is the second major product stemming from the study.

5. Obtain Necessary FAA Approval

Step five is the submission of the completed Part 150 Study to the FAA for review. The FAA has 180 days to approve or reject the study. There are a number of criteria the FAA will consider when making a decision, the link to which will be available in the reference section of this document.

6. Develop an Implementation and Monitoring Plan

This final step is usually performed internally by the airport and involves the creation of techniques to monitor the implementation efforts. 5



5 FAA: Land-Use Compatibility and Airports



Part 150 Deliverables

The integrated noise model is used during Part 150 studies to help predict locations affected by aircraft noise and to develop noise exposure maps (one of the main deliverables produced by the Part 150 study). The FAA's integrated noise model is a state-of-the-art aircraft noise modeling software package, available to airports when conducting a noise study. This software allows each airport to enter in facility-specific data and receive accurate noise contours used to develop noise exposure maps that aid in land-use planning.

Noise Exposure Maps (NEM) are designed to identify an airport's current and future noise patterns and the land uses that are not compatible with those noise patterns. The noise exposure maps are important because once the study is complete and the NEM is found to be in compliance with rules and regulations, it serves as a reference to the airport's existing and future noise impacts for anyone who is proposing noise sensitive developments near the airport.

Day-Night Average Noise Level (DNL) is the unit with which the FAA measures noise. DNL is an average noise level, incorporating both the intermittent noise of aircraft operations with the time of day of no aircraft noise.

A NEM will consist of two maps of the airport with noise contours plotted over land uses. The noise contours for the DNL 65 - 85 noise levels are shown on these maps. The first map will contain current conditions and identifies current airport noise compatibility issues. The second map projects the noise contours that can be predicted five years in the future while also taking into account future noise compatibility issues. On the following page, **Figure 5** illustrates how noise contours appear once mapped.

Figure 5 Noise Exposure Map



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The main purpose of the Noise Compatibility Plan (NCP) is to recommend land-use management measures to be implemented by local jurisdictions. As part of the Part 150 study, each jurisdiction is encouraged to adopt all relevant parts of the NCP as an element of the municipal comprehensive plan or to make NCP recommendations as planning guidelines. This will help ensure compatible land-use planning around the airport by guaranteeing that the land use is compatible with airport operations and the airport. In general a Noise Compatibility Plan:

- Identifies existing and future noise levels over existing noise-sensitive land uses
- · Reduces the introduction of new noise-sensitive land uses near airports
- · Provides mitigation measures that are sensitive to the needs of the community

While a Part 150 study is a good tool for identifying non-compatible land use surrounding the airport, it isn't necessary for every airport to undertake. Generally, when annual operations are below 90,000 propeller operations or below 700 jet operations, the cumulative noise levels greater than 65 DNL would remain within the airport's property line. When this occurs, airports often find that conducting a Part 150 Study does not provide any appreciable benefit to the community. In cases where the annual aircraft operations are greater than those levels listed above, a Part 150 study may be effective.⁶



6 FAA: Land Use Compatibility and Airports

One of the most effective tools a city can employ in establishing compatible land use, reducing height hazards, and protecting an airport from encroachment is to establish an airport overlay zoning ordinance (AOZO). An airport overlay zoning ordinance is one of the most common forms of zoning associated with airports because it promotes compatible land use and height limitations of the airport. It essentially protects the approaches, airspace, and physical areas surrounding the airport by ensuring compatible land uses and development in proximity to the airport. The AOZO is usually created by the airport's sponsoring city and is aimed at providing three main benefits:

- 1. Protect the airport from incompatible land uses
- 2. Protect the public safety by reducing the potential for fatalities, property damage, or noise complaints near the airport
- 3. Protects the taxpayer's investment in their airport and the economic benefits the airport brings to the region

Establishing an AOZO is effective because it supersedes the existing underlying zoning within specified zoning districts or it can apply additional conditions or restrictions to a specified area while retaining the existing base zoning. The flexibility of an AOZO mixed with the strength of its political backing make it a powerful tool in ensuring the future success of the airport.⁷



Dallas Airpark Source: NCTCOG

7 ACRP Report 16: Guidebook for Managing Small Airports

Airport overlay zoning ordinances are generally developed upon the completion of a Part 150 study because of the role that noise exposure maps play in creating the ordinances. The noise contours generated from the noise exposure maps will determine what areas need to be zoned and what type of zoning needs to be enforced. It is recommended that airport overlay zones be broken down based on each area's exposure to noise. Airport overlay zones can be established as follows:

- Airport Overlay Zone 1 (AOZ-1): That portion of the controlled compatible land-use area outside the 65 DNL contour line
- Airport Overlay Zone 2 (AOZ-2): That portion of the controlled compatible land-use area between the 65 and 70 DNL contour lines

While this example lists two airport overlay zones, each airport should include as many overlay zones as its noise exposure maps have noise contours. When creating the airport overlay zones, it is important to designate zoning based on compatible land use for the amount of noise exposure experienced by each area. See **Figure 6** to determine what types of land use are compatible with each overlay zone. The general land-use categories to be included in the matrix are residential, aviation-related uses, public, recreational, entertainment, commercial, and production/industrial.

Figure 6	Compatible Land Uses				
Land Use Matrix	Classification	Public Assembly Safety Area	Moderate Noise Exposure	Significant Noise Exposure	Severe Noise Exposure
	Airport Overlay Districts	AO-1	AO-2	AO-3	AO-4
	Average Sound Level DNL	Less than 65	65 to 70	70 to 75	75 - abov
	Land Uses Residential				
	Single Family Detached	Y	N	Ν	N
	Townhouse/Duplex Units	Y	N	N	N
	Apartments/Group Quarters	Y	25	N	N
	Hotels/Motels	Y	25	N	N
	Mobile Home Parks	Y	N	N	N
	Other Residential Units	Y	N	N	N

Key to Symbols

 \boldsymbol{N} (NO) - Land use and related structures are prohibited

Y (YES) - Land use and related structures are permitted

25 - Land uses and related structures are compatible; measures to achieve noise reduction level of 25 decibels must be incorporated into the design and construction of structures as specified in Construction Code of (City), Texas

Hazard Planning

A common misconception is that the FAA is regulatory in nature and can limit the height of structures near an airport. The FAA has no legal authority to regulate the height of structures. An effective way for a municipality to limit height hazards near an airport is to place restrictions on the height of structures and objects of natural growth and by regulating the use of nearby property.

The airport's master plan must be examined to determine what land needs to be protected. Each airport is surrounded by different layers of airspace, as outlined by Part 77, that are commonly referred to as imaginary surfaces. These surfaces are designed to allow an airplane a clear and safe path for a gradual descent upon landing. No obstacles should be allowed to penetrate one of these surfaces. Below are the definitions of the imaginary surfaces. While **Figure 4** on the following page contains a graphic illustrating the surfaces. While the specific dimensions of these surfaces may vary depending on the type and size of each airport's runway, the general characteristics of these surfaces will remain uniform regardless of each runway's unique dimensions.

Part 77 Imaginary Surfaces

Approach - Longitudinally centered with the runway and generally extending to the runway end. Consists of a vertical slope of 50:1 for a horizontal distance of 10,000 feet from the end of the runway, and a slope of 40:1 for an additional 40,000 feet.

Horizontal - Horizontal plane 150 feet above the established airport elevation. Constructed of swinging arcs ranging from 5,000 feet to 10,000 feet from the runway centerline.

Conical - Extends outward and upward 4,000 feet beyond the horizontal surface with a vertical slope of 20:1.

Transitional - Constructed to join the approach and horizontal surfaces. Extends outward and upward at right angles to the runway centerline from the approach surface. Consists of a 7:1 vertical slope which extends until reaching the horizontal surface.





Source: Washington DOT

These surfaces must be protected for the continued operation of the airport. If a structure is built that protrudes into one of these surfaces, it will cause a disruption to published flight procedures by requiring pilots to fly the landing approach at a higher altitude (something that can be dangerous during times of poor visibility), use a different approach if one is available, or ultimately be forced to use another airport due to the safety risks posed by the obstruction. (If this happens, it will not only affect the airport and pilots, but the general public by disrupting businesses that utilize the airport and possibly limit the ability of air emergency services).

To help avoid this situation, TxDOT recommends that no structure shall be built, altered or replaced and no tree shall be allowed to grow in any zone above the applicable height limitations established in each surface. It is further recommended that the accepted height incorporated into most zoning regulations for property surrounding airports is 50 feet. This would most likely still allow for the proper use of the property while not obstructing the surfaces.⁸ A recent survey conducted by the North Central Texas Council of Governments (NCTCOG) discovered a number of good examples of height-hazard planning and zoning in the region. Approximately 63% of airports practice some form of height-hazard zoning. One such example can be found in Benbrook.

8 TxDOT: Airport Compatibility Guidelines 2003

City of Benbrook Zoning Ordinance Amendment

"No structure in the City may exceed an elevation of 1,150 feet above mean sea level nor shall any structure exceed the allowable height within the Approach Departure Clearance Surface Slope, the Conical Surface or the Transitional Surface without the express permission of the City of Benbrook and the Commanding Officer of the NAS Fort Worth Joint Reserve Base."

While the above example is for a military installation, the verbiage is appropriate for a civil airport. TxDOT has provided sample ordinances that will help municipalities draft height hazard zoning requirements. These ordinances are located in the TxDOT Airport Compatibility Guidelines.

Form 7460: The FAA Obstruction Evaluation (OE) Process

Although the FAA cannot prohibit the building of structures near an airport, it will determine if the project creates a hazard to airport operations. It is crucial that city and airport staff be familiar the FAA's Obstruction Evaluation (OE) process because the city has the authority to limit the assembly of these structures. The OE process should be understood and communicated to all city departments and members of the public involved in commercial construction operations or operators of tall equipment such as builders, crane operators, and oil rig operators. This is the only process for alerting an airport of a pending construction project.

The FAA's regulatory control of height hazards is laid out in FAR Part 77, *Objects Affecting Navigable Airspace*. FAR Part 77 specifically states that the builder must notify the FAA prior to beginning construction if one of the following conditions is met:

- · Any construction or alteration that exceeds 200 feet above ground level;
- Any construction or alteration:
 - Within 20,000 feet of a public-use or military airport that exceeds a 100:1 surface from any point on the runway of each airport, with at least one runway more than 3,200 feet;
 - Within 10,000 feet of a public-use or military airport that exceeds a 50:1 surface from any point on the runway of each airport, with its longest runway no more than 3,200 feet; or
 - Within 5,000 feet of a public-use heliport that exceeds a 25:1 surface;

- Any highway, railroad, or other traverse way for which the prescribed adjusted height would exceed the above-noted standards;
- When requested by the FAA; or
- Any construction or alteration located on a public-use airport or heliport regardless of height or location.

If one of the above criteria is met, the FAA requires a Form 7460-1 be submitted detailing the construction. Forms are available online at: *https://oeaaa.faa.gov/*

Important: If the construction equipment is taller than the building itself, an additional notice must be made for the equipment.

Using the following criteria, the FAA will determine if air navigation will be impeded:

- 1. Will the object itself be affecting air navigation routes?
- 2. Will the object be affecting electronic navigation equipment? 9

Figure 3 explains the FAA process when performing an obstruction evaluation, once Form 7460 has been submitted. Upon completing the OE, the FAA will issue a determination. ¹⁰

FAA Determinations

No Objection: The subject construction did not exceed obstruction standards.

Conditional Determination: The proposed construction would be acceptable upon implementing mitigation measures (markings, lighting, etc).

Objectionable: The proposed construction is determined to be a hazard and is thus objectionable.

9 ACRP Report 16: Guidebook For Managing Small Airports 200910 AOPA: Tall Towers; The FAA's Obstruction Evaluation Process 2006



In conclusion, obstructions are generally located on city- or county-owned land, off airport property, making it important for city and airport staffs to monitor construction activities. If a structure is built off airport property that impedes a runway and no mitigation action is taken by the city or airport, the runway may be made inoperable. While it is true that the FAA is aware of structures that may affect the airport's operations, the responsibility of mitigating height hazards depends on proactive city and airport officials. The importance of protecting North Texas' airports from encroaching height hazards is ever increasing due to the recent exploration for natural gas in the Barnett Shale, the building of wind farms to meet our rising demand for energy, and the construction of bigger and taller buildings for our growing population.

Safety Benefits

In addition to the many benefits of airport zoning that have been mentioned, compatible land-use zoning also increases safety. According to the National Transportation Safety Board (NTSB), the agency that investigates and tracks all domestic aircraft accidents, most aircraft accidents occur on airport property. Roughly 45% of all general aviation aircraft accidents occur on airport property, while 15% occur within one mile of the airport, according to the NTSB.

Of the general aviation aircraft accidents that occurred within 1 mile of the airport, 33% occurred on airport property and 29% occurred in the traffic pattern.

The high number of aircraft accidents in such a close proximity to the airport further emphasizes the importance of establishing compatible land use near the airport. **Figure 7** illustrates a typical traffic pattern. As a reference, a traffic pattern has a footprint ranging from 270-1750 acres depending on runway length and size of aircraft that utilize the airport. The area under the traffic pattern should be considered the minimum area of land that is controlled for compatible land use.



Figure 7 Typical Airport Traffic Pattern

Communication: Vital to Success



Communicating between airport and city officials ensures the long-term success of an airport. Communicating with parties whose activities can potentially affect airport operations, like realtors and crane operators, is also important. Most of the general public doesn't understand the complex regulations and laws placed on airports that must be maintained in order for the airport to function. The following sections emphasize with whom airport and city staffs need to communicate to ensure the airport is protected from encroachment.

City Staffs and Elected Officials

Design Review Committee

The key to ensuring the ultimate sustainability of an airport relies on a high level of coordination and communication between municipal and airport staffs. An effective way of coordinating between municipal departments is to establish a Design Review Committee. Often times, when a company submits a plan for development to a city for approval, the department affected is the only one asked to check the building permit and give comments on the project. This is problematic due to the interdependent nature of city departments; as a development in one department may affect several other city departments. This is especially true with airports when a project that calls for the erection of a tall structure may, if left unchecked, negatively affect the airport's operations. A Design Review Committee attempts to alleviate this situation by following the steps below.

- 1. Development project is submitted to the sponsoring city by an outside party.
- 2. The project's plan is circulated to representatives in each city department to review the construction permit.
- 3. Each individual department comments on the impact the development will have on its department.
- 4. If a department has a conflict with the plan, it will need to be re-submitted until each department has no conflicts.
- 5. When no department has an objection to the project, the plan can then begin.

These steps facilitate coordination between departments and help to ensure the complex regulations placed on the airport, in order for it to remain operational, aren't violated.

Realtors

One of the most important decisions that a person makes in his or her lifetime is the purchase of a home. When selecting a location, many new residents are vaguely aware of the airport's presence and are unfamiliar with the level of aircraft noise affecting the property. This is potentially problematic for the airport because once the subdivision begins to flourish, these same residents organize and begin to pressure elected officials to do something about the noisy airport. To avoid this situation, airport and city officials should work to disclose airport noise to potential homebuyers by:

- Informing local elected officials of the need to pass an aircraft noise disclosure agreement requiring realtors to disclose aircraft noise information to potential homebuyers
- Providing realtors with a map detailing the airport's traffic patterns along with aircraft approach and departure procedures
- Providing realtors with the "Preserving General Aviation in North Texas" brochure to distribute to potential homeowners
- Encouraging realtors to inform potential homeowners to spend about two hours at the property to observe the level of aircraft noise affecting the property
- Providing realtors with the airport's phone number to answer residents' concerns
- · Providing maps and noise information on the airport's website

With no state airport noise disclosure laws in Texas, realtors are often just as uninformed as the average resident regarding airport noise. Providing them with the appropriate resources to educate both themselves and their clients about airport noise will help foster a positive future relationship between the airport and the community.¹¹



11 AOPA: Guide to Airport Noise and Compatible Land Use 1999

Public

One way an airport can be a good neighbor is by providing the community a chance to see firsthand how the airport operates, by hosting an open house. Generally, residents of a community are only aware of airports that have scheduled airline service due to the public's direct contact with those airports. General aviation airports are not especially visible to the non-flying public. This obscurity can lead the public to view these airports negatively. It is because of this perception that a well-planned and executed open house can greatly educate and enlighten the public on the importance of your airport.

An open house with static displays, exhibits, tours, presentations and the like can go a long way in opening the community's eyes to the airport's true purpose and value. While there are several good resources available from distinguished airport advocates on how to host an open house, a few of the most important features are listed below.



Advertisement and Invitations – Because the public is often unaware of local general aviation airports, an extensive advertising effort is needed to ensure that people know about and attend the event. This should include posting and distributing fliers, advertising in the newspaper and informing the media of the event. A special effort should

also be made to send personalized invitations to the following individuals:

- Aviation stakeholders
- Applicable federal, local and state officials
- · Members of the local media
- · Groups and individuals who are critical of the airport

Tenant Involvement – Encourage airport tenants to put their aircraft on display for the community to see. Allowing the public to see the diverse number of aircraft and tenants at the airport will go a long way in educating the public on the importance of the airport.

Public Handouts – Provide the public with handouts about activities and statistics in which your airport and airport users are engaged. This would include economic statistics such as number of employees, revenues, economic impact, etc. Pamphlets detailing the airport's programs and aircraft noise information, and any other items that would be appropriate, should also be included.¹²

Website – One of the easiest and most effective ways of communicating with the public on issues and events at the airport is to display the information on the airport's official website. While most airports do have a website, most do not utilize this tool to its full potential. When properly used and maintained, an airport website can be an effective public outreach tool for airport management. The website can be catered specifically to the public by making available useful information that reflects what the public needs to know about the airport. A successful airport website will contain information relating to noise, economic benefit, contact information, frequently asked questions and answers, maps and other broad programs and outreach materials that would benefit the public.

Construction Companies and Crane and Gas Well Operators

Many times construction is conducted near the airport without the knowledge of airport and city officials. This can be hazardous to an airport if the construction causes an airport to alter its operations. There are two types of construction projects important to airport: Those occurring on airport property and those occurring off airport property.



12 AOPA: The Complete Guide to Holding an Airport Open House

One effective way to ensure that everyone knows what to expect during the construction period is to have a preconstruction conference. This helps to discover and address any problems that may exist during the construction process. Attendees should include:

- Construction Project Manager
- Airport Management
- Subcontractors
- Airport Tenants
- FAA
- Affected Utilities
- Applicable Environmental Agencies

Discussion at these meetings should include the relationships and authorities between those involved, safety and security requirements during construction, vehicle movements through airport operations areas, and the need for continued vigilance for potential hazards to aircraft and tenants stemming from the construction process.¹³

Off-Airport Property

Construction occurring off airport property is more difficult for airport and city officials to prepare for because airports are often not contacted prior to the construction process. Because of this common occurrence it is especially important to educate local construction, crane, and oil rig companies regarding construction notification processes, especially the need for filing the Form 7460-1. The notification must be sent to the FAA regional airport district office 30 days before the start of construction or the filing of a construction permit, whichever occurs first. This lead time allows the FAA time to do an aeronautical case study and issue a determination. Providing those companies with the notification requirements necessary for the airport to operate is a key step in ensuring the full operability of the airport during the construction process. Regardless of whether the construction occurs on or off the airport, airport officials should ask themselves the following questions pertaining to the construction process:

- Will the tower or building impact the airport's approach minimums at the airport?
- If the FAA's circular indicates a change in approach minimums, how will this impact the aviation community? Is this the only approach at your airport predicated on a specific type of navigational aid? Does the impacted approach offer the lowest minimums at that facility?

13 ACRP Report 16: Guidebook For Managing Small Airports 2009

- Will the structure in question be close to a visual landmark such as a highway, mine, reservoir or any other point commonly used as a visual reference for VFR pilots?
- Will the tower underlie terminal airspace, creating traffic compression and an increased risk of a mid-air collision?
- Will the structure lie in an area in which a high volume of training activities are conducted?

The answers to these questions will help airport officials prepare for the construction process and guide the discussion with the construction company on how to avoid adverse effects to the airport.



ATC Tower Construction; Collin County Regional Airport Source: Collin County Regional Airport This toolkit guides city and airport officials on how to prevent and minimize airport encroachment at their airports by providing information on airport zoning and with whom to communicate to ensure that the airport is protected. In 2009, Dallas-Fort Worth was designated as the fastest growing metroplex in the United States. As more and more people move into North Texas, the region's airports will face new encroachment issues. Ultimately, it is the responsibility of city and airport staffs to protect their airports. It is never too early to begin protecting an airport from encroachment. An integral step is realizing when to initiate the conversation between airport and city officials regarding land use and zoning issues. Some of these include:

- When Creating or Updating a Master Plan: This will give staff the opportunity to evaluate the current zoning and land uses and determine if changes need to be made. This is also an ideal time to see if any additional I and needs be purchased to facilitate both protection and expansion of the airport.
- When Performing an Update to the City's Comprehensive Plan: As with master plans, land uses should be identified to see if adequate zoning is in place for the long-range health of the airport.
- Forecast Increase in Population: If a significant increase in population is being forecast for the city or county in which the airport resides, it would be beneficial to establish appropriate land uses adjacent to the airport.
- New Residential Developments: When new residential developments are being planned or constructed near the airport, it is necessary to contact real estate agents and construction companies to inform them of the location of the airport, to encourage aviation noise disclosure to potential homebuyers and explain the requirement for filing the 7460-1 form during the construction process.
- Forecast Increase in Airport Operations: A forecast increase in airport operations could mean that more zoning is necessary to accommodate more traffic. This is especially true if larger, noisier planes are planning on utilizing the airport. In this case, new zoning should be designed to keep residential developments out of new noise impact areas.

 Forecast Increase in Airport Operations: While establishing new zoning and land uses would do little to decrease the number of current noise complaints from the public, it could ensure that future residential development in the area is redirected to areas with little aviation noise. New zoning combined with public outreach may help gain the support of the community.

While these represent some of the major discussion points designed to bring airport and city staffs together to plan for the future protection of the airport, this is by no means a comprehensive list. Each airport is different from the next, with different opportunities and challenges. Therefore it is up to the professional judgment of city and airport staffs to determine when to implement needed land-use changes. One thing that all airports in North Texas have in common is the need to be proactive. From the largest reliever airports to the smallest general aviation airports, encroachment doesn't discriminate based on size. City and airport officials need to ensure that the airports of today continue to be the airports of tomorrow.



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