Responsibility for Implementation and Enforcement of Airport Land-Use Zoning Restrictions

DETAILS

65 pages | | PAPERBACK

ISBN 978-0-309-43591-8 | DOI 10.17226/23052

AUTHORS

RESPONSIBILITY FOR IMPLEMENTATION AND ENFORCEMENT OF AIRPORT LAND-USE ZONING RESTRICTIONS

By William V. Cheek, Esq.
William V. Cheek & Associates

I. INTRODUCTION

Federal government agencies,[1] states, counties, cities, port authorities, regional governmental authorities, and special taxing districts all, to some degree, share responsibility with respect to airport-related land. This digest seeks to respond to the need for a comprehensive legal resource of applicable statutory and case law affecting the creation and enforcement of airport use restrictions. A survey (see Appendix A) was conducted among the following entities:

1. Cities, counties, state and federal agencies, and subagencies.
2. Agencies, organizations, and individuals:
   a. City/county administrators such as city managers, county administrators, city/county attorneys, airport managers, and city/county zoning and planning agencies.
   b. Federal Aviation Administration (FAA).
   c. National Association of State Aviation Officials (NASAO).
   d. Aircraft Owners and Pilots Association (AOPA).
   e. National Business Aircraft Association.
   f. Regional intergovernmental groups.
3. The survey was also sent to a selected series of representatives and regulators of 1) large "hub" airports and regulators; 2) medium "hub" airports and regulators; 3) small "hub" airports and regulators; and 4) commercial service airports generally serving general aviation (GA) airports. Certain city managers, county executives, lawyers, and risk managers were also surveyed.

The findings of the surveys indicated that local authorities approach incompatible airport land uses in various ways:

- Overlay or "conventional" zoning and control of planned unit developments (commercial or residential) with certain density or clear zone requirements attached.
- Subdivision regulations requiring open space, restrictions of development in stipulated zones, and other constraints.
- Building code restrictions or conditions, insuring soundproofing.
- Avigation easements required from landowners granting overflight rights and releasing the local government authorities from and against any nuisance, damage, or other claim arising from operation of the nearby airport, even if such avigation easements carry a price tag.
- Real property notice requirements pursuant to state law that alert the buyer to the location of the airport and possible nuisance and damage that might follow.
- Airport runway and clear zone requirements over and above what any regulatory agency, such as FAA, might otherwise mandate.
- Buy-out by the local government of real property in certain identified zones, either by agreement or by condemnation under "police powers."

II. GOVERNMENTAL STRUCTURES AND AIRPORT-RELATED LAND USE

Most airports are public nonprofits, run directly by government entities or government-created authorities known as airport or port authorities.

Commercial airports are operated by one of six entities:

1. City—33 percent are city-operated. Examples include Atlanta, Georgia, and Austin, Texas.
2. County—15 percent are county-operated. Fort Lauderdale, Florida, and Las Vegas, Nevada, are examples.
3. State—7 percent are state run. Honolulu, Hawaii, and Anchorage, Alaska, are examples.
4. Port authority—9 percent use a port authority. Examples include New York City, New York; Seattle, Washington; Portland, Oregon; and Oakland, California.
5. Airport authority—30 percent use an airport authority. Washington, D.C.'s, Reagan National Airport; Dulles International Airport in Virginia; and Nashville, Tennessee, are examples.
6. Other—6 percent. Examples include Dallas/Fort Worth, Texas, which is the result of a contract between the two cities, and Monterey, California, which is operated by a special local tax district.[2]

[1] The Federal Aviation Administration (FAA), Environmental Protection Agency, and the Department of Defense (DOD).

[2] Airports Council International (ACI) 2008, *available at* http://www.aci-na.org.

All of these entities, along with the FAA, the Environmental Protection Agency (EPA) in some cases, and the Department of Defense (DOD), share responsibility with respect to airport-related land use.

The person charged with overseeing the airport is typically referred to as the airport director, aviation director, or chief executive officer. This person determines policy direction for his or her respective organization and has several deputies, each responsible for a specific department. The usual department breakdown is as follows:

- Legal.
- Marketing and Public Affairs.
- Finance and Administration.
- Engineering and Maintenance.
- Operations.
- Safety and Security.

Typically, the airport director/manager will report to the county board/commission or city counsel acting through its administrative system.[3] Smaller airports have more simplified structures than large ones, with an airport manager, for example, reporting directly to a city manager.

A. FAA's Role in Aviation Land Use (What the FAA Does and Does Not Do)

1. Overall Authority

The FAA, a subagency of the U.S. Department of Transportation, is the primary agency of the federal government charged with air safety regulation and the development and operation of the Nation's air traffic system. In that connection, it regulates airports, airways, pilots, mechanics, and air controllers. It participates in the regulation of aircraft manufacturers, fixed base operators, aircraft repair facilities, and related matters. It controls the industry by promulgating and enforcing a variety of Federal Aviation Regulations (FARs) and orders. It also produces Advisory Circulars (ACs) for information and guidance to the industry. Some of its actions are mandatory, while others are advisory only. In connection with the funding of airport capital improvements and operations, the FAA is in the position to set forth regulations that impact almost every aspect of airport construction—including master plans, noise restrictions, and even routes of flight, all of which clearly affect land uses in airport environs.

The role of the federal government in preemption of state law was established in the case of *Cooley v. Board of Wardens.*[4] The U.S. Supreme Court said that the federal government could preempt state law when regulating interstate commerce. That principle resides as a result of the U.S. Constitution's supremacy rule being employed when there is actual conflict with state law, when a state law would be an obstacle to affecting the purposes of federal legislation, or a federal law is so comprehensive as to preempt the field. Further, these tests are met when the Interstate Commerce Clause of the U.S. Constitution is at issue, as in the control of the skies. When the FAA is regulating air commerce, it is acting under the Federal Aviation Administration Authorization Act,[5] which includes the authority to regulate most aspects of aviation and, by extension, many issues concerning airports.

The FAA, however, *does not* undertake to enact or enforce local land use controls, and leaves those issues to local government. By federal statute and by case law, as shown by a number of federal cases, the FAA does *not* have a direct hand in zoning and regulating development around airports, but nevertheless plays several important roles related to compatible land use, including planning, technical assistance, and funding for airports. While the agency has no direct authority to regulate land use at the local level, one only needs to look at the myriad of congressional acts that empower FAA to have some influence on airport environs and operations.

There are numerous declarations by FAA that it is *not* in the business of airport land use compatibility planning. It has no statutory or regulatory authority to do so. Its job is to regulate navigable airspace and airports, not airport-neighbor uses.[6]

The federal government *does not control land use*. The FAA does set forth guidelines for land use compatibility to assist those responsible for determining the acceptable and permissible land uses in the vicinity of airports.[7]

Recently the FAA created a land use planning guide entitled *Land Use Compatibility and Airports* (the Guide), which sets forth in some detail the problem of airport land use incompatibility and clearly establishes the federal government's relationship to local land use. The following language appears in the Executive Summary:

> This guide identifies a wide variety of possible land use control methods as they relate to compatible land use planning efforts. This guide also recognizes that state and local governments are responsible for land use planning, zoning, and regulation and presents options or tools that can assist in establishing and maintaining compatible land uses around airports. [Emphasis added].[8]

As to land use compatibility, by the FAA's mechanism of providing funds and conditioning such funding on the establishment of aircraft approaches, clear zones, and height controls over properties near airports, local governments are subject to meeting all those regu-

[3] *Id*.

[4] 53 U.S. 299, 13 L. Ed. 996, 12 How. 299 (1851).

[5] 103 Pub. L. No. 305, 108 Stat. 1569, 49 U.S.C. § 4-101, *et seq.* (1994); *See* Federal Aviation Act of 1958, 85 Pub. L. No. 726, 72 Stat. 731, 49 U.S.C. 1301, *et seq.*

[6] 103 Pub. L. No. 272, 108 Stat. 1101, 49 U.S.C. § 40103, where provision describes the former 1348(a).

[7] www.aee.faa.gov/lui/moc.rec1.html.

[8] *See* ES-1, *available at* http://www.faa.gov/about/office_org/headquarters_offices/aep/planning_toolkit/media/III.B.pdf.

lations. While it is clear that airport land use issues, with some exceptions, are the province of local authorities, there are notable exceptions—for example, noise, height, and environmental issues around airports are clearly within federal preemption.[9] With respect to protrusion of structures into the air and with respect to noise, see FAA AC 150. The National Environmental Policy Act (NEPA)[10] requires the FAA to research environmental issues. The FAA draws its authority from the Interstate Commerce Clause of the U.S. Constitution.[11] Court decisions involving airspace often invoke the doctrine of federal preemption over state or local controls, but nevertheless, the courts have created some confusion as to just where federal regulation stops and local controls begin. This complexity has led to a muddled set of regulations, cases, and advisories. It is little wonder, therefore, that many city and county regulatory agencies have difficulty in reconciling where their entity should or can act with respect to airport land use.

In *City of Burbank v. Lockheed Air Terminal, Inc.*,[12] the Supreme Court held that local ordinances that undertook to make it unlawful for aircraft to serve a major airport except during certain hours to relieve citizens from aircraft noise at night were invalid. It based the decision on the fact that Congress had enacted the Federal Aviation Act and the subsequent Noise Control Act and that, by virtue of federal supremacy, the federal government had preempted any claimed local authority over the skies. Later cases supported the *Burbank* findings. In *Price v. Charter Township of Fenton*,[13] a federal district court struck down a local ordinance and said that the local authority could not restrict flight operations under the aegis of using "zoning power" in the face of federal controls. In *Burbank–Glendale–Pasadena Airport Authority v. City of Los Angeles,*[14] the Court of Appeals for the Ninth Circuit held that federal aviation law preempts a city ordinance when safety is an issue. The basic facts of that case were that when *Burbank-Glendale-Pasadena, et al.*, planned to extend a taxiway on a parcel of land owned by the City of Los Angeles, the Los Angeles City Council passed an ordinance that would have prevented the extension. The court said that the attempt to frustrate the airport authority's plans was preempted by federal law and added that it was clear that the city could not interfere with safety of flight.

[9] 14 C.F.R. pt. 77.

[10] 91 Pub. L. No. 190, 83 Stat. 85242 U.S.C. § 4321, *et seq*.

[11] U.S. CONST. art. I, cl. 3.

[12] 411 U.S. 624, 93 S. Ct. 1854, 36 L. Ed. 2d 547 (1973).

[13] 909 F. Supp. 498 (1995).

[14] 979 F.2d 1338 (9th Cir. 1992).

2. Planning Tools

FAA does help promote compatible land use planning and has prepared an "Airport Noise Compatibility Toolkit," which land planners may find useful.[15]

3. Airport Noise Compatibility Planning Toolkit

The Airport Noise Compatibility Toolkit implements the FAA Land Use Planning Initiative's short-term recommendations to develop a land use planning information package for FAA regions. This toolkit is designed to aid regional offices in assisting state and local officials and interested organizations in airport noise compatibility planning around the Nation's airports. A similar version of the toolkit is being specifically designed for use by state aviation officials. The toolkit has the following sections:

FAA Policies, Regulations, Programs, and Funding Sources

- Excerpts from 1976 Aviation Noise Abatement Policy.
- Overview of 14 C.F.R. Part 150, Airport Noise Compatibility Planning Program.

14 C.F.R. Part 150 Regulation

- Airport Noise Compatibility Planning.
- Overview of FAA Policy on Part 150, Approval of Noise Mitigation Measures.
- Final Policy on Part 150, Approval of Noise Mitigation Measures.
- Community Involvement Policy Statement.

FAA Guidance Materials

- *Land Use Compatibility and Airports*, a guide for effective land use planning.

Advisory Circular 150/5020-1

- Noise Control and Compatibility Planning for Airports.
- Land Use Planning Process Flow Chart.
- FAR, Part 150, Process.
- Aviation Noise Demonstration System and Land-based Classification Standards.

State and Local Noise Compatibility Programs

- State of California Real Estate Transfer Disclosure Law and Statement.
- State of Hawaii Statute–Chapter 508D, Mandatory Seller Disclosures.
- Sample Aviation Easement from Raleigh-Durham International Airport's Ordinance.
- Washington State Airport Land Use Compatibility Program.
- Loudon County, Virginia, County Zoning Ordinance Establishing an Airport Impact Overlay District.

[15] http://www.faa.gov/about/office_org/headquarters_offices/aep/planning_toolkit/.

• NASAO/FAA Survey, Cooperative Partnership Between the FAA and the State Agencies for Reducing Community Concerns Related to Aircraft Noise, February 2000.
• Bibliography of compatible land use plans/model zoning ordinances.

Communication Tools
• Community Involvement Manual.
• Sample speeches.
• Excerpts of written and oral testimony.
• Slide Presentation on Federal Policy for Land Use Compatibility Planning.

Additional Tools
• Toolkit Action Log Form (PDF).

"These [listed] sections include documents to help you and other FAA regional officials provide guidance and land use information at local meetings, public information meetings, and other opportunities."[16]

The following listing and description of related federal statutes that impact, directly or indirectly, airport land use was prepared by the Minnesota Department of Transportation.[17] Note the cross-hatching of the many federal actions that *local governments are bound to respect and follow*, particularly if they are seeking any federal funding for capital improvements or operations for an airport. Obviously, certain of these regulations that are safety-of-flight issues pertain to all airports, public or private.

• *Airport and Airway Improvement Act of 1982, 49 U.S.C. 471 re: Grant Assurances*: The safe operation of the airport and airways system in the United States is of "the highest aviation priority." § 47101(a)(1) authorizes the Secretary of Transportation to provide grants for airport development and sets out procedures for grant applications and awards. Airport owners and operators, in exchange for federal support funding, must make specific assurances, including mitigating and preventing airport hazards and maintaining compatible land uses around airports by the adoption of zoning laws. § 47107(a)(9), (10).
• *Safety Regulation (Aviation Programs—Air Commerce and Safety) 49 U.S.C. 447*: The FAA is required to take measures to "promote safe flight of civil aircraft." § 44701(a). Certain minimum safety standards apply to operating airports that serve aircraft designed for at least 31 passenger seats. § 44701(b)(2). The FAA is authorized to issue airport operating certificates, to include terms to insure safety, § 44706(b), which are mandatory for airports to operate, § 44711(a)(8). Also, there is the authority to regulate structures that could interfere with navigable airspace. § 44718.
• *Notice of Construction, Alteration, Activation, and Deactivation of Airports, 14 C.F.R. Part 157*: This regulation requires anyone who intends to construct, alter, activate, or deactivate an airport to notify the FAA, which then issues a written determination that considers the effect of the change on "the safety of persons and property on the ground." § 157.7.
• *Objects Affecting Navigable Airspace, 14 C.F.R. Part 77*: Establishing standards for determining obstructions in navigable airspace. Sets forth requirements for construction and alteration of structures (e.g., buildings, towers, etc.), including buildings, cranes, cell towers, etc., in the airport vicinity.
• *Proposed Construction or Alteration of Objects That May Affect the Navigable Airspace, FAA AC 70/7460-2K (2000)/(re: Form 7460-1)*: Form 7460-1 is required at all federally supported airports to consider each proposed construction near the airport. FAA conducts a study and determines whether or not the proposed development is a hazard to airspace.
• *U.S. Standards for Terminal Instrument Procedures (TERPS), FAA Order 18 (November 1999) and FAA Order 8260.3 B, Change 14 (July 7, 1976, with Changes 1–19 through May 2002)*: Here, standards for designing and setting forth Terminal Instrument Flight Procedures (TERPS) are established and constraints set forth that could impact land uses allowable beneath certain surfaces.
• *Criteria for Municipal Solid Waste Landfills, 40 C.F.R. Part 258, Subpart B—Location Restrictions*: The subpart establishes criteria for the expansion or development of new municipal solid waste landfills (MSWLFs), so that the units do not pose a bird hazard to aircraft. Any owners or operator proposing to site a new MSWLF unit within a 5-mi radius of any airport runway end must notify the affected airport and the FAA.
• *Airport Land Use Compatibility Planning, FAA Advisory Circular, AC 150/5060-6 (1977)*:

A guide to help development of an airport-area compatibility plan to prohibit areas surrounding an airport that could pose a risk to the airport's operations from being developed. Land use and noise issues are considered and spoken to.

• *Airport Master Plans, FAA AC 150/5070-6B (2005)*: Guidance for the preparation of master plans for airports from small GA to large commercial facilities. This guidance incorporates methods and techniques associated with airport master plan studies, including current industry methods and procedures commonly employed in the preparation and documentation of master plan studies. The AC attempts to foster a flexible approach to master planning and directs attention to the most important issues.
• *Model Zoning Ordinance to Limit Height of Objects Around Airports, FAA AC 150/5190-4A (1987)*: This AC

[16] http://www.faa.gov/about/office_org/headquarters_offices/aep/planning_toolkit/.

[17] OFFICE OF AERONAUTICS, MINN. DEP'T OF TRANSP., AIRPORT COMPATIBILITY MANUAL, *available at* http://www.dot.state.mn.us/aero/avoffice/planning/airportcompmanual.html.

concerns developing zoning ordinances to control the height of objects that could protrude and be a hazard to flight.

Considering all of the authority and guidance of the FAA concerning airports and land use activities, it is clear that local units of government must enact or enforce local land use controls that are consistent with all of the items mentioned. Nonetheless, see the *California Airport Land Use Planning Handbook* for the following quotation:

> Land use safety compatibility guidance from the Federal Aviation Administration (FAA) is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace. The lack of FAA land use compatibility criteria for other portions of the airport environment is often cited by land use development proponents as an argument that further controls on land use are unnecessary. What must be remembered, however, is that the FAA has no authority over off-airport land uses—its role is with regard to the safety of aircraft operations. *The FAA's only leverage for promoting compatible land use planning is through the grant assurances which airport proprietors must sign in order to obtain federal funding for airport improvements.* State and local agencies are free to set more stringent land use compatibility policies as they see fit. [Emphasis added].[18]

4. FAA's Regulations Concerning Height Restrictions (14 C.F.R. Part 77)

The FAA's regulation of airspace around airports is established primarily to protect aircraft, occupants, and people on the ground. However, only local governments have the authority to correct or prevent any construction or alterations that would pose a hazard to air navigation. FAR Part 77 identifies airspace within which development should be controlled to protect air navigation. It describes a number of imaginary surfaces with various shapes for different types of airports and runway configurations. Whether a particular object constitutes an obstruction depends on the height of the object and its location in proximity to the airport. The regulations establish a three-dimensional space in the air around the airport; any object penetrating that space is considered an obstruction hazard and may affect the aeronautical use of the airspace. Antennas, buildings, other types of structures, and trees should be limited so as not to pose a threat to aircraft.

Dimensions of the surfaces vary from airport to airport depending on the runway classification. The following descriptions of the surfaces are abbreviated from the federal documents.

- Primary Surface: A surface longitudinally centered on a runway and extending 200 ft beyond the end of that runway. The width of this surface is 250 ft. The elevation of any point on the primary surface is the same as the elevation of the runway at that point.
- Approach Surface: A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. The inner edge of the approach surface is the same as the width of the primary surface and it expands uniformly to 1,250 ft at a distance of 5,000 ft. The slope of this surface is 20:1.
- Transitional Surface: These surfaces extend outward and upward at right angles to the runway centerline or its extension at a slope of 7:1 from the sides of the primary surfaces and the approach surfaces.
- Horizontal Surface: A horizontal plane 150 ft above the established airport elevation, the perimeter of which is constructed by swinging arcs of 5,000 ft from the center of each end of the primary surface of each runway and connecting the adjacent arc by lines tangent to those arcs.
- Conical Surface: A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 ft.

The purpose of these imaginary surfaces is to protect the approach, departure, and circling airspace in the vicinity of the airport. Any object that penetrates the surfaces is an obstruction. FAA reviews each proposed obstruction to determine if it constitutes a hazard to air navigation.

In addition to natural objects or man-made structures that protrude above the planes or surfaces defined, certain other uses are to be restricted or prohibited:[19]

1. Uses that release into the air any substance that would impair visibility or otherwise interfere with the operation of aircraft (i.e., steam, dust, or smoke).
2. Uses that produce light emissions, either direct or indirect (reflective), that would interfere with pilot vision.
3. Uses that produce electrical emissions that would interfere with aircraft communications systems or navigational equipment.
4. Uses that would attract birds or waterfowl, including but not limited to, operation of sanitary landfills, maintenance of feeding stations, sand and gravel dredging operations, storm water retention ponds, created wetland areas, or the growing of certain vegetation.

5. FAA's Involvement in Noise Issues

In addition, as a means of implementing the Aviation Safety and Noise Abatement Act of 1979,[20] the FAA

[18] DIV. OF AERONAUTICS, CAL. DEP'T OF TRANSP., CALIFORNIA AIRPORT LAND USE PLANNING HANDBOOK, *available at* http://www.dot.ca.gov/hq/planning/aeronaut/documents/ALUPHComplete-7-02rev.pdf, at 9-4.

[19] 14 C.F.R. pt. 77.

[20] 103 Pub. L. No. 272, 108 Stat. 1284, 49 U.S.C. 47501 *et seq*.

adopted regulations[21] establishing a voluntary program that airports can utilize to conduct airport noise compatibility planning. Part 150 states: "This part prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving these programs."

Part 150 also prescribes a system for measuring airport noise impacts and presents guidelines for identifying incompatible land uses. Airports that choose to undertake a Part 150 study are eligible for federal funding both for the study itself and for implementation of approved components of the local program. The noise exposure maps are to be depicted in terms of average annual day-night average sound level (DNL) contours around the airport. For the purposes of federal regulations, all land uses are considered compatible with noise levels of less than DNL 65 dB. At higher noise exposures, selected land uses are also deemed acceptable, depending upon the nature of the use and the degree of structural noise attenuation provided. In setting the various compatibility guidelines, however, the regulations state that the designations

> …do not constitute a Federal determination that any use of land covered by the [noise compatibility] program is acceptable or unacceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.[22]

The U.S. DOD is another federal agency that has some land use controls. They include safety criteria and define certain potential "impact" zones near military airfields.[23] These zones were created based on a study of where military aircraft accidents had occurred in the past. Each of the three designated accident potential zones (APZs) requires consideration of uses for land located within those zones. For example, the use of property for residential purposes is considered incompatible in APZ I and compatible only at low densities in APZ II. Generally, this DOD action overrides any local land use, and typically, if the uses of these zones is incompatible with affected land, DOD will acquire the properties outright or gain easements.

B. State Aviation Regulatory Agencies, Their Authority and Activities

After reviewing all of the land use control functions of FAA, it is useful to review the myriad of airport-related land use statutes, ordinances, regulations, and processes, including court actions, that have emerged to regulate and enforce airport-area land use at local levels. In many cases, since counties and cites are generally the creatures of state government, questions of land use control generally are delegated to local county, city, or port authority units of government. While every state authorizes local zoning controls, some 30 specifically refer to airport zoning. Those states authorize local governments to create airport zoning, through an overlay plan, comprehensive plan, master plan, or similar mechanism. In addition to the general land control that rests at the state level, local communities—cities, counties, or port authorities—have shown particularly good leadership in addressing the airport land use problems. But, on balance, where state aviation offices have been more aggressive in airport land use issues, there is more consistency in the regulatory framework, driven by a clear recognition that airports are sites of economic importance and a vital transportation link to the entire United States and the international community as well.

A few state transportation/aviation agencies have created airport land use manuals and provided them to local governments. Several models of these activities were examined as part of this report. California provided leadership in the land use area by commissioning a study in the early 1980s that, in turn, used information gathered by the Institute of Transportation Studies at the University of California–Berkeley with respect to aircraft safety, including protection of citizens owning property near airports, as discussed below.

California,[24] the Denver Council of Governments,[25] Florida, [26] Oregon,[27] Minnesota,[28] Washington,[29] and Wisconsin,[30] to name a few, have established programs that show important progress in providing assistance to local communities with respect to airport land use compatibility. State aviation agencies have, with the support and blessing of legislatures, provided help to local

[21] 14 C.F.R. pt. 150.

[22] DIV. OF AERONAUTICS, CAL. DEP'T OF TRANSP., CALIFORNIA AIRPORT LAND USE PLANNING HANDBOOK, *available at* http://www.dot.ca.gov/hq/planning/aeronaut/documents/ALUPHComplete-7-02rev.pdf.

[23] Air Installation Compatible Use Zones (AICUZ), DOD, 1977; 32 C.F.R. pt. 256 (as to both noise and safety).

[24] DIV. OF AERONAUTICS, CAL. DEP'T OF TRANSP., CALIFORNIA AIRPORT LAND USE PLANNING HANDBOOK. Hodges and Shutt Consultants, 1993.

[25] DENVER COUNCIL OF GOVERNMENTS (DRCOG), AIRPORT COMPATIBLE LAND-USE DESIGN HANDBOOK (1998).

[26] OFFICE OF PUBLIC TRANSP., FLA. DEP'T OF TRANSP., AIRPORT COMPATIBLE LAND-USE GUIDANCE FOR FLORIDA.

[27] AERONAUTICS DIVISION, OR. DEP'T OF TRANSP., AIRPORT COMPATIBILITY GUIDELINES (vol. VI of the Oregon Aviation System Plan, 1981).

[28] OFFICE OF AERONAUTICS, MINN. DEP'T OF TRANSP., AIRPORT COMPATIBILITY MANUAL.

[29] AERONAUTICS DIVISION, WASH. STATE DEP'T OF TRANSP., LAND-USE GUIDELINES STUDY (vol. VIII of the Washington State Airport System Plan, 1991).

[30] WIS. DEP'T OF TRANSP., GUIDE FOR LAND USE PLANNING AROUND AIRPORTS IN WISCONSIN, 1989.

governments in airport land use issues and, in fact, have in some cases mandated local commission or planning units to do significant land use planning for airport-related areas.

In California, the State Aeronautics Act[31] requires each county that has an airport to create an Airport Land Use Commission (ALUC) and prepare an Airport Land Use Plan. Such a plan should define its scope, establishing land use policies in the area of noise, safety, airspace protection, and overflight issues. Each ALUC is required to create a compatibility table that describes zones near the airport and establishes what uses those zones can be put to and what uses are prohibited.[32]

The Caltrans Handbook specifies what regulations are in place for local governments to follow regarding airport-related land use planning, gives technological and sound reasoning to support the suggested (and mandatory) processes, and deals with all the issues of preplanning for land areas, mitigation of situations where land use is found to be incompatible with airport development, and what to do to mitigate nonconforming uses if they are found to exist. The Caltrans Handbook, first created in 1983 and updated in 1992, has led to the development of local (county or city) land use handbooks and ordinances throughout the state, and particularly where urban growth has proliferated in airport-related environs.[33]

Similarly, the handbooks of other states approach the situation in light of the legislative authority in those particular states, which, in many cases, differ substantially from that of California. Most of the handbooks and guidebooks reference the statutes of the state that refer to preparing a "comprehensive land use plan" or to the use of zoning as the tool of local governments to approach airport-area noncompatibilities.

Some examples of state statutes or statements from the various guidebooks regarding airport-related land use appear in Appendix B.

C. Local Communities and Zoning Authority

As indicated, all 50 states have enacted legislation that authorizes local governments to regulate land use by some form of zoning, comprehensive plan, overlay district, or similar mechanism, and over 30 states have adopted statutes that specifically grant local governments authority to adopt airport zoning regulations.

Most jurisdictions today are involved in various land use plans that undertake to establish long-range land use. Many of these plans, however, do not have much to say about airports, their existence or expansion, and their impact on the local community. This may be because many local planners are not experienced in aviation matters and simply do not address some of the issues, except where a major airport exists or is planned, and then much planning attention is brought to bear.

In general, the U.S. Supreme Court, in the landmark case of *Village of Euclid v. Ambler Realty Co.,*[34] recognized municipal planning and regulation of land use as a valid exercise of "police power." That case, widely cited in zoning matters, recognized the authority of states to authorize local community planning and defined what the U.S. Congress attempted to codify in the Standard City Planning Enabling Act (1928). This Act permits the establishment of a planning commission at the municipal level, including a "master plan" or a "zoning plan" for the "control of the height, area, bulk, location, and use of building and premises." However, irrespective of that activity, actual local authority derives from state zoning enabling acts, not in the federal government, so most of the decisions ruling on the validity of zoning acts are in state courts interpreting state statutes, except where a federal question of preemption is present, as in aviation regulations, noise controls, or "takings" of land use or easements based on an overriding federal action. On occasion, state courts will look to federal cases and federal law as dispositive of local aviation contests.

It follows that when personal interests in land are affected as to values, use, and purpose, property owners are constantly testing the validity of zoning acts by local governments. There are literally thousands of cases in this area, and a review of the actions of courts strongly suggests that there are issues that go to both federal and state constitutionality. City and county administrations must be constantly aware that zoning in its broadest sense must meet the subdefinitions of "police power," namely, health, safety, and welfare.

What the cases say has extreme relevance to the airport land use issues and ultimately to "takings," equating that principle with eminent domain, whether the action is an affirmative step by local governments or a reactive defense by local governments to claims of inverse condemnation, which, in turn, can represent substantial liability on governmental units. In Section VI of this report, where the issue of "takings" is explored, there are examples of millions of dollars in payment to a landowner who has successfully convinced a court that the zoning authority has taken his property. These decisions should be a wake-up call and warning to local agencies that they need to be certain their land use planning and zoning are well-founded and that they have taken whatever protective actions are available to avoid financial liability.

Local authorities must be careful to recognize that zoning without a "master plan" or "comprehensive plan" can be subject to attack by landowners who may claim that the community failed to approach land use zoning with adequate planning. Typically, enabling acts by the state legislatures permit or direct municipalities to establish planning commissions, the duties of which are to create a "zoning plan" for the "control of the height,

[31] California Public Utilities Code, commencing with § 21670 (div. 9, pt. 1, ch. 4, art. 3.5).

[32] *Id.* at 24.

[33] Available from Caltrans in written form and by compact disk for a modest fee.

[34] 272 U.S. 365, 47 S. Ct. 114, 71 L. Ed. 303 (1926).

area, bulk, location, and use of buildings and premises."[35]

If the court sees a particular zoning action as "spot" zoning, it follows that adoption of a zoning plan may not have been developed in accordance with an overall legislative mandate to create a "comprehensive plan."[36]

> The spot-zoning cases, like those dealing with partial zoning appear to make the legislative requirement in accordance with a comprehensive plan a nullity. The words become a…reminder of the underlying test of constitutionality. So long as the legislation is reasonably related to the police power, plausibly serving the ends of health, safety, welfare, morals, and not demonstrably arbitrary or discriminatory, it will be sustained. To avoid the charge of spot zoning, the community must be sure only that in dealing with one land parcel other similar situations have been taken into account. In this sense, "comprehensive" is virtually synonymous with "uniform," the uniformity being in terms either of the ordinance itself or generalized…"policy."[37]

It follows, then, that "haphazard" or "spot" zoning can be subject to challenges of constitutionality, particularly if the state statute infers the concept "in accordance with a comprehensive plan" or, certainly, that the zoning is itself judged by a court to the "plan."

Airport land use plans, as part of a "master plan" or "comprehensive plan," have rarely been successfully attacked when they follow the police powers concepts—particularly since health, safety, and public welfare seem clearly to be a central purpose of airport land use controls. This does not mean, however, that a plan and accompanying ordinances will necessarily insulate the local government from financial liability in all cases.

Further, the handbooks issued by states, and also by the FAA, often include a "model" ordinance for use by local governments that should be helpful to cities, counties, and port authorities; for example, the following model from Oregon.

> Model Public Use Airport Safety and Compatibility Overlay Zone for Public Use Airports with Instrument Approaches
>
> .010 Purpose. The purpose of this overlay zone is to encourage and support the continued operation and vitality of public use airports with instrument approaches by establishing compatibility and safety standards to promote air navigational safety at such public use airports and to reduce potential safety hazards for persons living, working or recreating near such public use airports.[38]

In Wyoming, the suggested land use protection ordinance undertakes to incorporate both the FAA's suggested Part 77 ordinance with respect to heights of obstructions and its Part 150 with respect to noise issues.[39]

An example of a comprehensive county ordinance with respect to airport land use is the one enacted for Lenawee County, Michigan. The ordinance follows the recommendations of the Michigan Department of Transportation Bureau of Aeronautics, illustrating that a state aviation agency can influence how local governments react to the advice of the state agency. Note the reference to the purposes, namely: health, safety, and general welfare (police powers). The section quoted below is simply the statement reflecting the authority of the county to enact an airport zoning ordinance and is shown here to reflect how important the lead-in is to the county action:

> Lenawee County (Michigan) Airport Zoning Ordinance
>
> Adopted October 12, 2006
>
> An ordinance establishing airport zoning regulations restricting the height of structures and objects of natural growth and otherwise regulating the use of property in the vicinity of the Lenawee County Airport; providing for the allowance of variances from such regulations; designating the Administrative Agency charged with the administration and enforcement of such regulations; establishing an airport zoning board of appeals, providing for enforcement; and imposing penalties for violation of this Ordinance. Pursuant to the authority conferred by the provisions of Act No. 23 of the Public Acts of the State of Michigan for the year 1950 (Extra Session) and as amended Act. No. 158 of the Public Acts of the State of Michigan for the year 1976 *for the purpose of promoting the health, safety and general welfare of the inhabitants of the county* of Lenawee by preventing the establishing of airport hazards and thereby protecting the general public, users of the Lenawee County Airport and occupants of land in its vicinity, and preventing the destruction and impairment of the utility of said airport and the public investment therein; The Lenawee County Board of Commissioners and the Lenawee County Airport Zoning Board under the provisions of Section 13 of Act No. 23 of the Public Acts of the State of Michigan for the year 1950 (Extra Session) and as amended Act No. 158 of the Public Acts of the State of Michigan for the year 1976, does hereby ordain the following to be known as the Lenawee County Airport Zoning Ordinance. [Emphasis added].[40]

Observe that the ordinance first recites the principal objective—to prevent the creation or establishment of airport hazards and to provide additional safety and protection to the users of the airport and to the people who live and work in its vicinity. Then it designates a "hazard area" as being a 10-mi radius of the airport. It further refers to the Michigan Aeronautics Commission and the FAA as having established various elevations and requires any new construction to be in accordance with the ordinance with height restrictions based on FAA standards,[41] which is specifically mentioned in the ordinance. The ordinance further sets out a listing of acceptable land uses within the zones it has created, that is, residential versus nonresidential, referring to

[35] PA. STAT. ANN. tit. 53 § 9166 (1938).

[36] Charles M. Harr, *In Accordance with a Comprehensive Plan,* 68 HARV. L. REV. 1154 (1955).

[37] *Id*. at 1170.

[38] Airport Land Use Compatibility Handbook, Appendix G.

[39] See a model provided by the Wyoming Aviation Department, tit. 15, WYO. STAT., art. 6, ch. 1.

[40] Lenawee County (Michigan) Airport Zoning Ordinance, adopted Oct. 12, 2006.

[41] 14 C.F.R. pt. 77 *et seq*.

runway protection zones to conform with the FAA's Airport Improvement Program, with guidelines as to land uses and strategies to prevent uses that are not in conformity with the ordinance. As for administration, it appoints a zoning administrator and a board of appeals and requires permits to be issued for development of property within the large zone so designated. It further allows for judicial action for any person who wishes to appeal from administrative actions and establishes penalties for violations. Several charts are attached as part of the ordinance to provide a visual explanation of the aircraft approach zones and the zones established for various land uses.

Courts have consistently referred to "police powers"—that is, health, safety, and public welfare—as key elements in reviewing the validity of zoning actions. With particular respect to airport environs, some communities have enacted the FAA "Model" almost verbatim, and that has been persuasive to some courts.

The following was stated in a law review article written by a member of the American Institute of Certified Planners:

> A fundamental issue in airport planning is the potential conflict between federal regulation and state land use law when states exercise their police power by imposing land use controls in areas subject to federal regulations. Federal regulation of natural resources, economic activities, and public facilities has raised substantial questions about the exercise of federal power under the Commerce Clause in regulating local conditions. For example, FAA flight regulations for aircraft often conflict with local land use and zoning regulations designed to reduce noise from aircraft takeoffs and landings…*City of Burbank v. Lockheed Air Terminal, Inc.,* [411 U.S. 694 (1978)] it was held that local land use regulations to control aircraft noise are preempted by FAA regulations. But *Burbank* created some confusion because the Court, in *dicta*, distinguished between municipalities as regulators exercising police powers and municipalities as owners operating airports. Owners are allowed to impose restrictions and controls on land ownership but local governments who do not own airports cannot impose restrictions. Although *Burbank* is often cited for federal noise preemption the case is more important for airport vicinity planning because of the *dicta* in footnote fourteen…the footnote stated…."We do not consider here what limits, if any, apply to a municipality as a proprietor."[42]

An alert to local planners is clear: they must be careful, if they are both the local regulatory agency and the owner/operator of the airport, to follow some well-trod paths in adopting zoning that involves airport-area properties. It appears that comprehensive planning should follow four major steps, i.e., 1) the formation of goals and objectives; 2) the making of basic research studies; 3) the drafting of the plan; and 4) implementation of the plan. Effective airport planning requires a higher level of intergovernmental coordination because of the jurisdictional complexity that accompanies the location and expansion of airports. A minority of states mandating planning requires detailed plans for airports, while also providing statutory authorization of airport zoning regulations.

This whole debate about the bifurcation of authority over airport-related use has triggered literally thousands of lawsuits in the area of "takings" or inverse condemnation. Every state agency in the country as part of the research for this report was queried to determine whether those agencies 1) provided an airport land use compatibility guide or handbook; 2) knew of specific strategies that local governments in their state used to manage incompatibilities; and, 3) provided advice to local governments as to how to manage existing incompatibilities. Of the 50 states, 25 agencies responded to the requests for information. Some state aviation agencies do provide airport compatibility land use materials and some provide copies of sample ordinances or other legal materials, but few give much advice to local governments except to refer them to federal regulations.

In some states, the involvement of state aviation agencies is more intensive than in others. In a few jurisdictions, the state owns or directly controls a number of airports, but, by far, most airport ownership is vested in either cities or counties.

D. Local Authorities and Airport Noise Issues

As a point of beginning concerning the relationship of aircraft noise/airport noise to local zoning, following is a quote from the AOPA guide:

> *Airport safety, noise, and land use planning go hand in hand. The problem has been, in the past that most elected officials and airport sponsors just didn't understand this interaction….* Responsible land use planning is simply a fair way to protect both the interests of the airport and the community surrounding the airport. Almost every concern a community expressed about an airport relating to noise and safety could be eliminated with responsible land use planning. [Emphasis added].[43]

Noise can be defined as unwanted sound. Noise is perceived differently by different individuals. In addition to loudness (decibels in the A weight range), other facts that affect noise include tone, frequency, duration, weather, wind, and time of day. Wind can shift the direction and location of sound, low ceiling may reflect sound, and nighttime noise is more annoying than the same noise in the daytime. The major sources of noise in an aircraft engine are the machinery noise and the exhaust noise from power production. Significant reductions have been made in noise from turbine (jet) engines, but not much has been done to reduce noise in GA aircraft. The future appears more promising with the introduction of small turbine and diesel aircraft engines, which produce less sound and emit fewer particles into the air.

[42] Steven H. Magee, *Protecting Land Around Airports; Avoiding Regulatory Taking Claims by Comprehensive Planning and Zoning*, 62 J. AIR & COM. 243, 249 (1996).

[43] AOPA's Guide to Airport Noise and Compatible Land Use, *available at* http://www.aopa.org/asn/land_use/.

The Federal Aviation Act of 1958[44] required appropriate federal agencies to control and abate aircraft noise. The FAA implemented FAR, Part 36, which prescribes noise standards. The maximum allowable aircraft noise is 105 Effective Perceived Noise (EPN) level (decibels in the A weighted scale) dB-A for an aircraft approach, 103 EPNdB for sideline, and 101 EPNdB for takeoff. FAA AC 36-3G lists sound output for all GA aircraft. GA aircraft produce between 56.0 dB-A and 83.0 dB-A for a Grumman Tiger and a Saberline (business jet).

NEPA[45] establishes acceptable noise levels for categories of use at or near operating airports. The residential zoning classification allowable maximum is 65 dB-A at night (10:00 p.m.–7:00 a.m.).

FAA has issued guidance with 50–60 dB-A DNL as clearly acceptable noise levels, 55–60 as normally acceptable noise levels, 60–65 as marginally acceptable levels, 65–70 as normally unacceptable levels, and 70–75 as clearly unacceptable levels.[46]

A review of the "noise" cases, many of which occurred in California, shows that communities are having difficulty attempting to solve the noise issue, the single most significant problem faced by airport operators. Objections run all the way from nuisance to disruption of quiet enjoyment, to the "taking" issue, where landowners claim that an "aviation easement" has been seized by airport authorities without payment of "just compensation."

The leading case for years in the noise area has been City of *Burbank v. Lockheed Air Terminal,*[47] in which the city undertook to impose a curfew on jet operations at a privately owned airport. The legal question was simply whether the acts of the city administration were invalid because the Federal Aviation Act and the Noise Control Act of 1972[48] had preempted any local control over airports. Among other things, the Federal Aviation Act clearly declares that the federal government has "complete and exclusive national sovereignty in the airspace of the United States." Further, the EPA along with the FAA has complete control over aircraft noise, making actions of local authorities unable to assert "police powers" as the basis of their actions. The majority decided that state and local governments cannot use police powers to regulate the flight of aircraft and the noise so caused, in direct conflict with federal law. This left airport owners in a position to determine the length of runways, for example, and thus to deny applications for service from an air carrier if the proposed service would, in turn, require additional runways or avigation easements for the noisier aircraft.

In *Airport Transport Association of America. v. Crotti*,[49] the plaintiff, an airline industry advocacy group that represents most major air carriers, claimed that regulations adopted by the California Department of Aeronautics, pursuant to the California Public Utilities Commission Code, were invalid and unenforceable. The statute gave the department the authority to establish noise standards or deny airport-operating certificates, revoke licenses for failure to adhere to the standards, and subject the operators to a charge of criminal misdemeanor.

The case was brought in federal court, where the Airport Transport Association (ATA), on behalf of the airlines, argued that the regulations were invalid and unenforceable because of federal preemption under the commerce and supremacy clauses of the U.S. Constitution. Further, ATA argued that the Noise Control Act of 1972 reinforced the power of the FAA, supported by NEPA, to have total control of aircraft noise. ATA relied on the findings in *Burbank*.

The court was not persuaded that there was federal supremacy because the airport was owned by the city, an airport operator as well as a creature of the state, but nonetheless, primarily held in favor of the federal government, while finding also that the airport owner was responsible to control noise at certain levels.

In *National Aviation v. City of Hayward*[50], the city sought to restrict aircraft operations at its airport, including the imposition of a nighttime curfew. On the one hand, the *Burbank* case apparently had held that "state and local governments will remain unable to use their police powers to control aircraft noise regulating the flight of aircraft," while *Crotti* held that it was not the intent of Congress to completely preempt the field of aircraft noise and, by implication, all aircraft operations.

The Hayward ordinance was not found to place a serious burden on interstate commerce and since there was not a uniform and exclusive system of federal regulation, the "void" left the local authority the right to make curfew and certain aircraft restrictions. A claim for inverse condemnation was dismissed despite assertions by the plaintiffs that denial of certain access to the airport diluted the value of their leases, since the court found that the ordinance was not an unreasonable constraint.

So, what is a local authority to do if it is challenged by local landowners to prohibit unwanted noise when such prohibitions could lead to, among other things, restrictions on use of the airport, curfew times, limits on aircraft size, and so on? The best solution appears to be to follow model suggestions by the FAA and the state aviation agencies if those agencies had followed the FAA guidance in AC 150.

[44] 90 Pub. L. No. 411, 82 Stat. 395.

[45] 91 Pub. L. No. 1901, 83 Stat. 852, 42 U.S.C. § 4321 *et seq*.

[46] *See* FAA Airport Noise and Compatibility Planning Web site, available at http://www.faa.gov/airports_airtraffic/airports/environmental/airport_noise/.

[47] 411 U.S. 624, 93 S. Ct. 1854, 36 L. Ed. 2d 547 (1973).

[48] 92 Pub. L. No. 574, 86 Stat. 1234, 42 U.S.C. 4901 *et seq*.

[49] 389 F. Supp. 58 (1975).

[50] 418 F. Supp. 417 (1976).

For an example of what to do about noise, see the *California Airport Land Use Planning Handbook*.[51] The following is a quote from the Handbook as it approaches the problems of aircraft noise:

> The subjective and highly complex nature of noise is implicit even in the measurement of noise. These characteristics are particularly evident with respect to measurement of airport noise. As discussed in this chapter, airport noise differs in many respects from other sources of noise, including other transportation noise. Also discussed are the efforts, which have been and continue to be made to devise ways of describing and quantifying airport noise. Lastly, issues involved with measuring noise levels for a particular airport and projecting potential future noise impacts are addressed.
>
> Noise is often perceived to be the most significant of the adverse impacts associated with airport activity. To better understand airport noise impacts, it is important to recognize the variables involved with regard to different types of aircraft, aircraft flight routes, and other factors such as pilot technique.
>
> As experienced on the ground, the noise emitted by different types of aircraft has distinct differences in terms of both the overall sound level and other properties. There are differences in sound levels generated by a selection of general aviation, air carrier, and military aircraft in California.

E. Ordinances Directed at the Safety Issue

Attached as Appendix C is an extensive quote from Chapter 9 of the *California Airport Land Use Planning Handbook* (January 2002) that concerns airport safety issues and offers some excellent advice to airport planners and authorities anywhere.

The following is an example of a chart showing acceptable and nonacceptable land uses by zones, which could be made a part of an ordinance. The one shown is from the Denver Council of Governments, and is based on a study reflecting APZs.

Fig. 1. Compatible and Noncompatible Land Uses—Based on Accident Potential Zone Analysis.

The land uses set forth are classified as to the APZs and are based on the logic of Compatibility Land Use Listings used in the *Denver Regional Council of Governments (DRCOG) Design Handbook*. Each of the Identified Land Use Categories is listed and various land uses have been identified and the interpretation and comments follow. Various land uses, when viewed against Accident Potential Zones (APZs) are classified as:

1) Clearly Acceptable
2) Normally Acceptable
3) Marginally Acceptable
4) Normally Unacceptable
5) Clearly Unacceptable

Symbol/Classification/Comments

1. ++ CLEARLY ACCEPTABLE: The activities associated with the specified land use will experience little or no impact due to airport operations. Disclosure of airport proximity should be required as a condition of development.
2. + NORMALLY ACCEPTABLE: The specified land use is acceptable in this zone or area. Impact may be perceived by some residents. Disclosure of airport proximity should be required as a condition of development. In addition, dedication of an avigation easement may also be advisable.
3. ° MARGINALLY ACCEPTABLE: An impact will be perceived as a result of allowing the specified use in this zone or area. Disclosure of airport proximity and avigation easements should be required as a condition of development.
4. - NORMALLY UNACCEPTABLE: Specified use should be allowed ONLY if no reasonable alternative exists. Disclosure of airport proximity and avigation easements should be required as a condition of development.
5. — CLEARLY UNACCEPTABLE: Specified use should not be allowed. Potential safety or overflight nuisance impacts are likely in this area.

[51] *See* http://www.dot.ca.gov/hq/planning/aeronaut/documents/ALUPHComplete-7-02rev.pdf.

TABLE 1

Another example is the following chart from San Luis Obispo, CA, showing six APZs*.

AIRPORT LAND USE COMPATIBILITY LISTING**	APZ-1(RPZ)	APZ-2	APZ-3	APZ-4	APZ-5	APZ-6
Residential						
Single-family, nursing homes, mobile	---	---	---	---	---	o
Homes, multi-family, apartments, Condominiums	---	---	---	---	---	o
Public						
Schools, libraries, hospitals,	---	---	---	---	---	--
Churches, auditoriums, concert halls	---	---	---	---	---	--
Transportation, parking, cemeteries	---	+	++	++	++	++
Commercial & Industrial						
Offices, retail trade	---	--	--	o	+	+
Service Commercial, Wholesale trade, Warehousing, light industrial	---	--	--	o	o	o
General Manufacturing, utilities, Extractive industry,	---	--	o	o	o	o
Agricultural & Recreational						
Cropland	++	++	++	++	++	++
Livestock (not feed lots)	++	++	++	++	+	++
Feed Lots	--	--	o	o	+	++
Parks, playgrounds, zoos---	---	+	+	+	++	++
Golf courses, riding stables, Water recreation	---	--	+	+	o	++
Outdoor spectator sports	---	---	--	--	o	+
Amphitheatres	---	---	--	--	o	o
Open Space	++	++	++	++	++	++

* Source: City of San Luis Obispo California
** Assumes no obstructions violate FAR Part 77

Each land use category would need to be integrated into existing or "new" county land use designations, but the principles would be the same. This could be done by zoning, overlay zoning, performance standards or regulations, subdivision controls, or similar mechanisms. The appropriate mechanism would call for identifying the zones shown on the accompanying APZ charts and cross referencing those areas to the airport land use compatibility listing, requiring compliance with the land uses set forth on the chart, subject to qualifications such as "normally acceptable," marginally acceptable," etc.

Note that obstructions regulated under FAR, Part 77, and noise issues under FAR, Part 150, and related ACs have not been specifically addressed in this treatment. It is assumed that no land use in any of the APZs would violate the obstruction rules.

III. LOCAL AIRPORT LAND USE CONTROLS

A. Example of Procedures to Adopt a Safety Zoning Ordinance

The following wording appears in the Minnesota Guide: "The Minnesota procedure is somewhat typical of zoning processes around the country and is presented here as a 'model,' recognizing that state statutes, which vary from state to state, must be consulted by state and local authorities before formal action is taken."

1. Letter from the airport owner to the county (counties), township(s), and/or city (cities) requesting the establishment of a joint airport zoning board.
2. Certified resolutions of the airport owner, the county (counties), township(s), and/or city (cities) establishing the joint airport zoning board.
3. A draft of the proposed ordinance and map prior to presentation at a public hearing. *Two noticed public hearings should be held.*
4. Certified resolution of the zoning board for each hearing held, declaring a proposed ordinance and arranging a time and place for a public hearing.
5. Affidavit of publication from two newspapers of the notice of public hearing for each hearing held.
6. Affidavit that mailed notice was given for each hearing held, and additional "mailed notice" documents.
7. Certified minutes of each public hearing.
8. Certified zoning board resolution as to a proposed zoning ordinance to be submitted for Commissioner's Order of Approval.
9. Certified zoning board resolution adopting the proposed ordinance.
10. Two certified copies of the adopted ordinance with accompanying map sets.
11. Certification as to the filing of the ordinance with the County Register of Deeds and the filing numbers.[52]

IV. PREVENTION OR DISCOURAGEMENT OF INCOMPATIBLE AIRPORT LAND USES

A. Local Authorities' Approach to Incompatible Land Uses

- Overlay or "conventional" zoning and control of planned unit developments (commercial or residential) with certain density or clear zone requirements attached.
- Subdivision regulations requiring open space, restrictions or development in stipulated zones, and other constraints.
- Building code restrictions or conditions, insuring sound-proofing.
- Avigation easements required from landowners granting overflight rights and releasing the local government authorities from and against any nuisance, damage, or other claim arising from operation of the nearby airport, even if such avigation easements carry a price tag.
- Real property notice requirements pursuant to state law that alert the buyer to the location of the airport and possible nuisance and damage that might follow.
- Airport runway and clear zone requirements over and above what any regulatory agency, such as FAA, might otherwise mandate.
- Buy-out by the local government of real property in certain identified zones, either by agreement or by condemnation under "police powers."

B. Comprehensive Land Use Plans—Master Plans

Airport master plans can and should fit into overall land use planning. In most cases, where FAA funds are sought for capital improvements, FAA will require an airport master plan that will not only cover operational issues, but also suggest overlays for land use around airports to avoid conflicts between airport operators and neighbors, existing or expected. However, the FAA does not create the plan.

C. Performance Standards or Regulations

Under certain circumstances, a series of "performance standards" or regulations as to land use might be included in an ordinance that undertakes to exercise the "police power" of the local government with respect to things that can and cannot be done on the land involved. If the land is in an airport hazard area, as might be defined in the standards, certain uses may be disallowed. This is, in reality, a form of zoning control, but one that might be more politically palatable and possible.

D. Subdivision Regulation; Covenants, Conditions, and Restrictions

When a developer approaches the city, county, or zoning authority for approval of subdivision plats, assuming the right ordinances or statutes are in place that control subdivision activity, certain requirements may be established as part of the approval process, as is done with other issues, to specifically include airport compatibility. For example, the requirement for "avigation easements" is now becoming common. Those easements, similar to the one shown in this report from Hawaii (Section V.D), are part of overall administrative controls and require landowners to grant "air rights" above the proposed development, and further, require all subsequent buyers to have certain language in the transfer deed, in which the buyer fully acknowledges the facts concerning proximity to the airport and the understanding that there is risk attaching to such location. This may forestall future litigation or provide a

[52] OFFICE OF AERONAUTICS, MINN. DEP'T OF TRANSP., AIRPORT COMPATIBILITY MANUAL, Model Airport Safety Zoning Ordinance and Procedural Guide, at 168, *available at* http://www.dot.state.mn.us/aero/avoffice/pdf/airportcompmanualch6.pdf .

defense if lawsuits for trespass, nuisance, or inverse condemnation are filed.

E. Changes in Subdivision Regulations

Another approach to land use planning around an airport is subdivision regulations. Provisions can be written into the regulations prohibiting residential construction in intense noise or hazard exposure areas. These areas can be determined by acoustical or aeronautical specialty studies prior to approval of a residential development near an airport. Open space requirements that reduce the density in certain areas, such as APZs, can be insisted upon by the zoning authority at a very minimum. This approach may need to be backed up by ordinances.

F. Building and Housing Codes and Police Powers

Insulation requirements can be made a part of the local building codes, without which the building permits cannot be issued. Often, county planning departments have drafted reports on noise guidance for land use planning and development. It will then typically be adopted based on a model building code, such as the State of Florida's Recommendation Sound Level Reduction Construction Methods and Material Lists.[53]

Adoption of a building code similar to one of the existing models prior to issuance of residential building permits may mitigate future noise complaints.

Using the health and welfare power (police powers) might be a strategy to help protect occupants of houses or businesses located within airport-affected areas. Soundproofing could be accomplished for residences and businesses already in the airport area, where noise studies confirm excessive aircraft noise in impacted areas.

G. Capital Improvement and Infrastructure Planning

Cities, counties, and local zoning authorities may, in the long run, greatly discourage the pressures for residential and commercial land use in the vicinity of airports by simply not authorizing, installing, or paying for water, sewer, road, and other infrastructure in areas considered to be in noise, obstruction, or air safety hazard zones, as defined well in advance of any development proposals. One county in Colorado, for example, simply will not authorize infrastructure expenditures unless the airport management has given its approval to the proposed land use.

H. Tax Incentive Programs to Influence Developers' Decisions

Once a community determines that it must exert control over land near its airports, it can buy out the property in certain zones. Then it will have complete control of the situation, including the right to resell the property and to attach use restrictions that will meet the standards and uses it has predetermined. In an effort to attract certain uses, it could offer tax incentives, such as reductions or outright exemptions, to such businesses as warehouses and other industrial uses that are considered appropriate for airport neighbors. In some cases, such as seen in LaCrosse, Wisconsin, aggressive industrial airport developments around the airport, with land uses that are clearly airport-compatible, have become a magnet for industry and have assisted a public airport in becoming a positive economic force instead of a financial burden.

V. TYPICAL APPROACHES TO MITIGATION OF AIRPORT-INCOMPATIBLE LAND USES

A. Noise Studies and Soundproofing

When faced with existing airport-incompatible land uses, some local governments have done studies which, when shared with the public, create opportunities for after-built noise restraints by home owners, as an alternative to buy-outs of airport noise-impacted areas.

B. Changes in Airport Operating Procedures by "Friendly Persuasion" or by Ordinance

If a local government can assist in modifying certain operating situations at airports either by "friendly persuasion" or by other more intrusive means, the result could be less obtrusive noise and a safer flying environment. Hours of operation, the type of aircraft that can be flown, the number of aircraft that can be based at a facility, the specific uses such as flight schools (or prohibition of such), and the prohibition of structures in certain identified zones are examples of positive influences that the local government can exert for the general public good.

In *Faux-Burhans v. County Commissioners of Frederick County*,[54] a local government was allowed to pass a restrictive ordinance governing the use and operation of a privately-owned airport. The Frederick County Council had passed a zoning ordinance concerning certain restrictions on a local airport. The plaintiff, a private-airport owner, challenged the county's action and brought suit in federal district court. After reviewing several important cases concerning federal preemption, mostly dealing with noise and overflight issues, and finding that the plaintiff could not point to any federal statutes or regulations that explicitly or implicitly preempted the broad areas of regulation of the size, scope, and manner of operations at a private airport, the court found against him.

The court tended to ignore prior federal cases and held as follows:

> The ordinance in question does not regulate noise emissions or the actual conduct of flight operations within navigable airspace. Rather, the Frederick County zoning law regulated intensity of use (by number of aircraft), the

[53] *See* Florida Building Code Online, *available at* http://www.floridabuilding.org/c/default.aspx.

[54] 674 F. Supp. 1172 (D. Md. 1987).

type of aircraft that can use the facility (by take-off distance required), the clear zone at the runway ends (by prohibiting building thereon), the locale of operation (by set-back requirements), and the type of aircraft operations (by prohibiting instructional flights). *Certainly, these are all areas of valid local regulatory concern, none of which is federally preempted, and none of which inhibits in a proscribed fashion, the free transit of navigable airspace. And, just as certainly, no federal law gives a citizen the right to operate an airport free of local zoning control.* [Emphasis added].[55]

C. Performance Standards or Regulations

Under certain circumstances, a series of "performance standards" or regulations as to land use might be included in an ordinance that undertakes to exercise the "police power" of the local government with respect to things that can and cannot be done on the land involved. If the land is in an airport hazard area, as might be defined in the standards, certain uses may be disallowed. This is, in reality, a form of zoning control, but one that might be more politically palatable and possible.

D. Real Estate Disclosures

Some states have statutes in place that require real estate agents and developers to make disclosures about "negative issues" about a property being sold. This can be attached in residential property transactions near airport locations and traffic patterns of the airport. A couple of states, Michigan and Indiana, also require an "in-writing" disclosure on the seller's sale form. In Hawaii, a seller must disclose "potential disturbances" to warn of noise as well as other inconveniences. Research indicates that when these disclosures are made and acknowledged by the buyers, there are fewer court actions.

The following is wording required on deeds (from Hawaii):[56]

Notification required; ambiguity.

When residential real property lies:

1) Within the boundaries of a special flood hazard area as officially designated on Flood Insurance Administration maps promulgated by the United States Department of Housing and Urban Development for the purposes of determining eligibility for emergency flood insurance programs;

2) Within the boundaries of the noise exposure area shown on maps prepared by the department of transportation in accordance with Federal Aviation Regulation Part 150-Airport Noise Compatibility Planning (1 Code of Federal Regulations Part 150) for any public airport;

3) Within the boundaries of the Air Installation Compatibility Use Zone of any Air Force, Army, Navy, or Marine Corps airport as officially designated by military authorities; or

4) Within the anticipated inundation areas designated on the department of defense's civil defense tsunami inundation maps; subject to the availability of maps that designate the four areas by tax map key (zone, section, parcel), the seller shall include such material fact information in the disclosure statement provided to the buyer subject to this chapter. Each county shall provide, where available, maps of its jurisdiction detailing the four designated areas specified in this subsection. The maps shall identify the properties situated within the four designated areas by tax map key number (zone, section, parcel) and shall be of a size sufficient to provide information necessary to serve the purposes of this section. Each county shall provide legible copies of the maps and may charge a reasonable copying fee.

When it is questionable whether residential real property lies within any of the designated areas referred to in subsection (a) due to the inherent ambiguity of boundary lines drawn on maps of large scale, the ambiguity shall be construed in favor of the seller; provided that a good faith effort has been made to determine the applicability of subsection (a) to the subject real property. Except as required under subsections (a) and (b), the seller shall have no duty to examine any public record when preparing a disclosure statement.

E. Buy-Outs by Agreement or Condemnation

Local governments choose buy-outs or condemnation of property that is airport-incompatible as a "last resort." Sometimes it is the only practical alternative, even when houses or businesses existed prior to the construction of airports. Buy-outs by contract or by the use of eminent domain are the only options.

As indicated in the AOPA's Part 2, of Airport Compatible Land Use Materials, other common land use control techniques:

…include the airport sponsor acquiring ownership of the land or specific air or land rights surrounding the airport. When applied as an afterthought to fix earlier incompatible land uses near the airport, this method can be a costly one for local residents [read taxpayers] as well as the airport. Without direct public consent to the sale of their property, airport sponsors can attempt to purchase avigation easement or development rights to the properties. These options would, in effect, provide the sponsor the right to produce noise over the property (avigation easements) and/or give the sponsor the right to ensure the compatible development of the land while leaving the property owner with all other rights of ownership.

Specifically, an avigation easement is a conveyance of a specified property interest that creates a servitude on a particular area, restricting the use by the owner of the surface and assuring the owner of the easement the right and privilege of a specific use contained in Martin v. Port of Seattle the easement document. (See FAA Order 5100.37A: Land Acquisition and Relocation Assistance for Airport Projects.) Such rights may consist of the right of flight of aircraft, the right to cause noise, dust, etc; the right to remove all objects protruding into the airspace, together with the right to prohibit future obstructions in the airspace; and the right of ingress/egress on the land to exercise the rights acquired. Other types of easements, such as clearance easements, do not protect an airport

[55] *Id*. at 1174.

[56] HAW. STAT. § 508D-15.

owner from future property owner claims against overflight. It is important to recognize that a clearance easement only provides protection from obscurations and does not include the right of flight.

As will be seen in the section on "takings," even if the local airport authority has required an avigation easement in exchange for approving a proposed subdivision, a court may find that it was not voluntarily given and might still find that the local authority is liable in damages in an inverse condemnation case.[57]

For example, see Avigation Easement as recommended by the Michigan Department of Transportation (Appendix D). This notice is given to new property purchasers to assure that the purchasers are aware of the proximity of the property to the airport.[58]

F. Changes in Airport Configurations

One of the problems of airport expansion to meet burgeoning air traffic needs is that an airport and its approach patterns create conflict with neighborhoods. If an airport needs additional runways, for example, often these create unforeseen incompatibility. Changes in configurations of airports may be an option, at great expense, to help reduce conflicts.

In several recent cases where commercial and residential development had threatened quiet enjoyment of property owners and where an additional major runway as proposed by the airport would have made the problem even worse, the airport owner ended up purchasing property for airport expansion at extremely high prices. In *Martin v. Port of Seattle,*[59] the Supreme Court of Washington held for the landowners, who succeeded in obtaining a multimillion dollar judgment against the county.

VI. ENFORCEMENT OF AIRPORT ENVIRONS LAND USE

A. Forced Purchase or Condemnation

How have local governments, with financial assistance from federal and state governments, approached and paid for the expense of eminent domain (condemnation) for the benefit of airports and airport users? Is the economic trade-off worth it for the overall public benefit? Important cases such as the Port of Seattle matter required millions of dollars to be paid to homeowners who were in place well before the airport existed. Will there be decisions by local governments to just shut down airports rather than face the expenses related to condemnation?

B. Inverse Condemnation and "Takings" Issues from *Causby* to *Sisolak*

One primary purpose of this study is to review the litigation that has developed among units of government, airport operators, users, and landowners. Several questions need to be addressed:

1. How effective are airport-related land use zoning ordinances, master plans, and other development controls in creating airport-compatible land use for off-airport property?
2. With respect to noise, pollution, and other interference, actual or perceived, what impacts on landowners of property in proximity to airports are compensable?
3. Are units of government vulnerable to inverse condemnation ("takings") requiring payment to affected landowners?
4. What are the "rules of law" as largely expressed in the case law with respect to resolving the myriad of conflicts that have developed between and among airports, airport users, airlines, private aircraft owners and operators, land developers, and entire neighborhoods?

No description of the development of the inevitable conflict between landowners and airport operations would be complete without the recognition of the oft-quoted and perhaps misunderstood case of *United States v. Causby.*[60] Land owner Causby and his wife operated a chicken farm located about 2,000 ft from the end of a runway of a civilian airport. In 1942, after World War II began, the federal government leased the airport and began flying military bombers and fighter planes over Causby's property. The noise from the aircraft operations was deafening, and as a result, the chickens began to die either from fright or from throwing themselves against a fence in panic. Causby brought an inverse condemnation action against the government, alleging that the aircraft activity had destroyed his chicken business and that the government had thereby taken his property without paying compensation.

The government's response was that there was no "taking" since the federal government had asserted control over all airspace through a series of congressional acts, namely the Air Commerce Act and the Civil Aeronautics Act of 1938. Causby relied on the ancient maxim to real property law, which held that a landowner owned not only the surface, but all the way to heaven, which doctrine the Supreme Court rejected, but notwithstanding, the Court stated that the landowner must have exclusive control over the "immediate reaches" above his property. Congress had defined safe "navigable" airspace in terms of 300-, 500-, and 1,000-ft flight levels. The U.S. Supreme Court agreed with the lower Court of Claims that there was a diminution of the value of the land and that the frequent overflights

[57] *See* McCarran Int'l Airport v. Sisolak, 137 P.3d 1110 (2006).

[58] *See* App. E for a summary of modern cases with respect to takings and other land use litigation as summarized by the State of Minnesota Department of Transportation/Office of Aeronautics in an appendix to its *Airport Compatibility Manual.*

[59] 64 Wash. 2d 309, 391 P.2d 540 (1964).

[60] 328 U.S. 256, 66 S. Ct. 1062, 90 L. Ed. 1206 (1946).

were the cause. The Court further held that the value of the "easement" so taken had not been properly assessed by the lower court and remanded the case to the lower court for it to make findings about the value of the "taking."

Years later, in *Griggs v. Allegheny County,*[61] the Court was asked to define who would pay for any takings and decided that the airport owners, in this case the county, should pay compensation, not the airlines or other airport users. They based that decision on the fact that the local government had made the decisions to build an airport, where it would be located, etc. The Court concluded that the county government had taken the airspace over Griggs's property for public use, and said it was the county that owed just compensation.

Ever since *Causb*y, by far the most "takings" cases have been in state courts, with the justifications based on both the Fifth and Fourteenth Amendments to the U.S. Constitution or on state constitutions that have private property protections similar to the wording of the Fifth Amendment, which allows the taking of private property for public use only if just compensation is paid.

Until about 1997, the taking or damaging as the basis for an award to a property owner dealt with direct overflights, again calling up a trespass principle. Federal courts found direct overflights to be indispensable.[62] Such courts, according to some authorities, refused to find takings based on noise, vibrations, or testing of jet engines nearby, and insisted on actual physical interference.

- As to noise: *Town of East Haven v. Eastern Airlines*.[63]
- As to taxiing operations: *Town of East Haven*.[64]
- As to testing of jet engines: *Bellamy v. United States*.[65]

In 1997, however, a Federal Circuit Court opened the door to takings claims based at least in part on nonoverhead flights, where there is a "peculiarly burdensome" pattern of activity.[66]

It is clear that the altitude and frequency of flight are key elements to a claim of inverse condemnation. Courts have seemed to find it handy to use an FAA chart showing flight levels of 500, 1,000, and 1,500 ft, with the 500-ft level supposed to represent "safe" flight over occupied areas, a sort of floor for "navigable airspace," but the use of specific levels do not guarantee limiting or eliminating liability for a taking.[67]

Despite more than 60 years since *Causby* and more than 40 since *Griggs*, there is still a tendency to cite them in takings cases, even though events have overtaken some of the principles laid out in those cases. Some older nonaviation cases that refer to takings have surfaced in airport-oriented matters.

The court in *Pennsylvania Coal v. Mahon*[68] held that state regulation of property may require "just compensation" if regulations go "too far." In *Pennsylvania Coal*, the company was sued by the state, which said that the defendant could not remove coal under certain circumstances, but the company kept taking the coal. The company claimed that the statute under which the state was proceeding was unconstitutional under the Fifth Amendment and that their property was being taken without just compensation. The U.S. Supreme Court agreed. In a more recent case, *Penn Central Transportation Co. v. New York*,[69] the court held that so-called "air rights" claimed by landowners–developers where regulations prohibited the construction of a high-rise building was not a "taking." This case is often cited in inverse condemnation cases, but was found unpersuasive in *Sisolak* and in a following case, *Vacation Village, Inc. v. Clark County*,[70] Nevada, both arising from inverse condemnation cases in Las Vegas, Nevada. These two cases are treated more fully below.

Loretto v. Teleprompter Manhattan CATV Corp.,[71] not an aviation case, held that there was a taking when government authorized a cable company to install cable boxes in an apartment building. Some would say that because it is not an aviation case, it should not be relied on in air rights matters. It does seem to stand for the principle that when government "goes too far" it may have to pay aggrieved parties. In *Loretto* the court found a physical invasion, deemed to be important and a distinguishing factor in some aviation cases.

In *Nollan v. California Coastal Comm'n*,[72] the Supreme Court held that the Commission had to pay landowners just compensation for the grant of a public access easement across beachfront property. In the case, the governmental unit had relied on "police power," but the lower court found the regulations to be invalid because they did not further public purposes.[73]

In another case, *William C. Haas v. City and County of San Francisco*,[74] zoning regulations did not constitute a taking even though the value of the land was reduced from $2,000,000 to $100,000.

McCarran v. Sisolak[75] represents a far-reaching decision with respect to the rights of property owners as

[61] 369 U.S. 84, 82 S. Ct. 531, 7 L. Ed. 2d 585 (1962).

[62] *See* Brown v. United States, 30 Fed. Cl. 23 (1993).

[63] 331 F. Supp. 16 (D. Conn. 1971).

[64] *Id*.

[65] 235 F. Supp. 139 (E.D.S.C. 1964).

[66] *See* Argent v. United States, 124 F.3d 1277 (Fed. Cir. 1997).

[67] *See* Griggs v. Allegheny, 369 U.S. 84, 82 S. Ct. 531, 7 L. Ed. 2d 585; Martin v. Port of Seattle, 64 Wash. 2d 309, 391 P.2d 540 (1964).

[68] 260 U.S. 393, 43 S. Ct. 158, 67 L. Ed. 322 (1922).

[69] 438 U.S. 104, 98 S. Ct. 2646, 57 L. Ed. 2d 631 (1978).

[70] 497 F.3d 902 (2007).

[71] 458 U.S. 419, 102 S. Ct. 3164, 73 L. Ed. 2d 868 (1982).

[72] 483 U.S. 825, 107 S. Ct. 3141, 97 L. Ed. 2d 677 (1987).

[73] *See* Highline Sch. Dist. v. Port of Seattle, 548 P.2d 1085 (Wash. 1976), where the court found that frequent and low overflights amounted to a taking.

[74] 605 F.2d 1117 (9th Cir. 1979).

[75] 137 P.3d 1110, 122 Nev. Adv. Rep. 58 (2006).

against county administrations when ordinances are enacted to restrict land use in areas zoned for airport-area use. Because of its importance, the amount of money involved, and the interesting analysis of the Nevada Supreme Court, the case is likely to be widely cited in future inverse condemnation matters, but perhaps widely assailed as well. A dissent in the case should also be carefully considered.

The facts as recited by the court are as follows:

> Since 1955, the County [Clark County, Nevada] has restricted the height of buildings on property in the vicinity of its public use airports. The County's height restriction ordinances are designed to avoid air navigation hazards that could endanger the lives and property of airport users and nearby property occupants.
>
> During the 1980s, Sisolak bought three adjacent parcels of land for investment purposes, which were each zoned for the development of a hotel, a casino, or apartments. Located on the southwest corner of South Las Vegas Boulevard and Arby Avenue in Las Vegas, the parcels lie 5,191 feet from the west end of a McCarran International Airport runway.
>
> When Sisolak purchased the property, Clark County Ordinance 728 was in effect. Passed in order to regulate the height of structures and the use of property in the vicinity of all public use airports, *the Ordinance aimed to prevent the establishment of obstructions that would pose air navigation hazards*.[76]
>
> In 1990, McCarran Airport began expanding and upgrading the runway at issue for use by commercial jet aircraft, in conformity with the 1979 Clark County master plan.
>
> Next, the County enacted an ordinance, which adopted "Airspace Zoning Maps," including an Aircraft Departure Critical Area Map for McCarran Airport. According to the map, Sisolak's property was located in the departure critical area and was therefore placed under an 80:1 slope restriction (limiting an owner's use of airspace one foot above ground level for every 80 feet from the runway), resulting in height restrictions of 3 to 10 feet above ground level. Ordinance 1599 provided for a variance procedure similar to that in Ordinance 1221.[77] [Emphasis added].

The matter was tried by a jury, and the FAA's standard 500-ft flight level for operations over occupied land was recognized, and given the difference in terrain altitude for the property involved, there would have been a maximum height of any structure of no more than 66 ft. The jury was instructed to determine the fair market value of the "taking" while recognizing that the county ordinances so restricted the development of the property. The jury, after considering the expert appraisers' testimony, returned a verdict in Sisolak's favor in the amount of $6,500,000 plus prejudgment interest in the amount of $8,060,000, attorney's fees of $1,950,000, and over $107,730 in costs. *Sisolak* is a case that needs very careful reading and scrutiny by local county or city airport regulators as well as landowners. Taking some of the primary legal issues in the case, the following decisions and reasoning occur:

1. Sisolak clearly had an interest in the property involved. The court reasoned that under *United States v. Causby*, a landowner does own/control land below the various FAA flight minimums, in this case 500 ft.
2. The court cited *Griggs v. Allegheny County* as the basis for saying that although aircraft may fly below 500 ft "when necessary for takeoff and landing, the right does not divest the property owner of his protected property right to his usable airspace."
3. The claim that the matter was not "ripe" for consideration by the court because Sisolak had not filed a request for a variance was found not to have merit.
4. Sisolak did not have to prove flights took place below certain levels, because it was patently obvious that numerous flights were invading the airspace below 500 ft.
5. The trial court did not err when it instructed the jury that any structure on the land could not be higher than 66 ft, based on the evidence heard at trial—a figure arrived at by looking at the terrain and the 500-ft level.
6. The granting of an avigation easement by Sisolak's predecessor in interest in the land was done as a condition of a development plan and, therefore, could not be said to have created a permanent right for the county/airport. Citing *Nollan v. California Coastal Commission*, the court stated, "to obtain easement of access across private property, the State must proceed through its eminent domain power because 'required uncompensated conveyance of [an] easement outright would violate the Fourteenth Amendment [U.S. Constitution].' " Therefore, the *Sisolak* court said the district court did not err in instructing the jury that the perpetual avigation easement provided no defense to the taking of Sisolak's airspace.
7. Ordinances passed either before or after Sisolak bought the property, made no difference. The court held that the ordinances authorize the permanent physical invasion of his [Sisolak] airspace. The ordinances exclude the owners from using their property and, instead, allow aircraft to exclusively use the airspace as a critical departure area within an airport approach zone. The essential purpose of the ordinances adopted to facilitate flight through private property is to compel landowner acquiescence. Significantly, the court cited *Loretto v. Teleprompter Manhattan CATV Corp.*
8. Based on the best use of the property for a hotel or casino, the height restriction that would be allowed, namely 66 ft, was, for all practical purposes, a complete "taking."
9. No abuse of discretion occurred in awarding more than $8,000,000 in prejudgment interest plus substantial attorney's fees and costs.

In a vigorous dissent, Justice J. Becker of the Nevada Supreme Court largely disagreed with the majority, stating as follows:

[76] *Id*. at 1114.

[77] *Id*. at 1115.

> Neither case found that aircraft overflights, takeoffs or landings, in and of themselves, constitute a taking under the Fifth Amendment of the United States Constitution. Rather, it was the effect of the planes upon the owners' property that resulted in a taking. Likewise the majority of states that a regulation which requires the granting of an easement is automatically a taking under *Nollan*…. However, *Nollan* only holds that such a requirement may be a taking if the easement doesn't relate to the health, safety or welfare purpose of the regulation or is overly broad to accomplish that purpose.[78]

In *Hsu v. County of Clark*,[79] the Supreme Court of Nevada had previously reversed an inverse condemnation claim against Clark County that was based on a county ordinance limiting the height of buildings surrounding the airport, the purpose of which was to restrict the use of the land in the event of a crash so as to affect as few people as possible. But in this review, citing the results of *Sisolak,* the court decided that compensation was owed and remanded the case to the trial court to determine the amount of damages that should be awarded.

Following the decision in *Sisolak*, the U.S. Court of Appeals for the 9th Circuit in *Vacation Village,*[80] looking at facts very similar to *Sisolak*, sustained the fact that the Clark County Ordinance 1221 amounted to a "taking" and sent the case back to the trial court for a calculation of just compensation "in light of *Sisolak*." *Vacation Village* was decided in the U.S. Ninth Circuit Court, which found itself interpreting the Nevada law under *Comm'r v. Estate of Bosch,*[81] citing *Erie R.R. Co. v. Tompkins*.[82]

While the U.S. Ninth Circuit Court found that it "respectfully disagreed" with the Nevada Supreme Court and did not believe that a U.S. Constitution Fifth Amendment taking had occurred when Clark County passed ordinances that created an avigation easement over the landowner's property, the court nevertheless followed the "highest court of the State." In doing so, it referred to the language of the *Sisolak* case and concluded that the facts presented a regulatory per se taking entitling the landowner to just compensation, adding that the "Nevada Constitution defines takings more broadly than the United States Constitution," and deferred to the Nevada Supreme Court in that court's decision that the easement did amount to a taking under the Nevada Constitution.

The following is a case summary from the Minnesota *Airport Compatibility Manual*:[83]

> In *Tahoe-Sierra Preservation Council v. Tahoe Regional Planning Agency*, 535 U.S. 302 (2002), the U.S. Supreme Court applied the parcel as a whole concept to determine that a taking was not present. The defendant imposed a development moratorium for 32 months while determining a development plan for the Lake Tahoe area. The Supreme Court reaffirmed its finding that courts must consider the entire parcel of property not just the affected portion. The Supreme Court instructed litigants that per se takings occur only in extraordinary cases, typically only when there has been permanent or regulatory denial of all economically viable use of the relevant property.
>
> Under this reasoning, an occasional over-flight is not a permanent occupation of the airspace. When no permanent *physical occupation* is present, the next question is whether there has been a permanent regulatory deprivation of all economically viable use of the relevant property interest. If the relevant parcel is the parcel as a whole, then only the airspace segment is without use and the land below the height limit still has economic use and value. Therefore, there has been no permanent regulatory deprivation of all value of the applicable parcel. Tahoe-Sierra also finds that when there is neither a permanent physical occupation nor permanent regulatory deprivation of all economically viable use, the "default rule" applies. This rule is the "more fact specific inquiry" that rejects a per se approach and instead embraces the multifactor test…. [Emphasis added].

This case suggested that there is still considerable conflict in the courts when it comes to the "takings" issue. In *Sisolak*, for example, the majority of the court found that there was physical invasion of the landowner's property, introducing a sort of "trespass" theory harking back to *Causby*, but the Clark County ordinance did nothing more than restrict the height of structures that pose a potential hazard to aviation.

Of course, advocates for the American Planning Association argued at the appellate level that the most extreme results would flow from affirming the case. The Nevada Supreme Court did affirm the lower court's decision and followed the principles of *Sisolak*. It remains to be seen if the dire results the brief forecast will come true.

In the meantime, there are hundreds of zoning, taking, and related cases that have been reviewed, analyzed, and cited on all sides of the issues.

VII. COMMUNICATION OF GOVERNING BODIES TO PUBLIC ABOUT AIRPORT LAND USE

A. Gaining Community Support for the Airport

In an article entitled "Why Your Community Needs Its Airport: Because Once It's Gone, It's Gone Forever,"[84] the author opens his article with the following quote:

> A dearth of open space suitable for urban development has combined with the need for cash-strapped municipal governments to seek short-term tax revenues, creating a "perfect storm" in the ongoing assault on general aviation

[78] *Id*. at 1131.

[79] 173 P.3d 724, 123 Nev. Adv. Op. No. 60 (2007).

[80] 477 F.3d 902 (2007).

[81] 387 U.S. 456, 87 S. Ct. 1776, 18 L. Ed. 886 (1967).

[82] 312 U.S. 484, 61 S. Ct. 662, 85 L. Ed. 964 (1941).

[83] http://www.dot.state.mn.us/aero/avoffice/pdf/airportcompmanualappendices.pdf.

[84] David Esler, AVIATION WEEK, July 25, 2006, *available at* http://www.aviationweek.com/aw/generic/story_generic.jsp?channel=bca&id=news/airport0806.xml.

airports. Last year, *Business & Commercial Aviation* reported the targeting of general aviation airports by real estate developers in order to gain land for new housing, offices and stores as a growing trend. However, in the intervening months, it appears to have gained sufficient momentum to be reclassified as an accepted practice by the land development industry. For financially beleaguered city and county governments—as well as politicians soliciting PAC campaign contributions—these proposals can appear extremely attractive.

An excellent method to raise positive public awareness is to commission an airport economic impact study to highlight the economic value that the airport has to the community.

B. Appearances of Public Officials at Conferences, Forums, etc.

Elected officials and professional staff have unique opportunities to appear at civic clubs, conferences, forums, airport events, and so on. Radio and television talk shows and airport "town hall" meetings and planning sessions are all excellent methods of communication. Public officials should provide copies of working drafts of planning documents at public libraries, schools, and universities and offer staff time to interested parties at those locations. They should take every opportunity to talk about the local airport to the community regarding the economic benefits of an airport as well as airport planning, restrictive ordinances, and compatible and incompatible uses of land and adjacent properties. Consideration should be given to commissioning an economic impact study as well as long-term planning for airport expansion, which will certainly come as air traffic continues to grow—whether in a large city or a small one.

C. Use of Media: Publications, Internet, and Other

Meetings should be established with various media editorial boards to discuss airport critical issues. Briefings should be provided for the Chamber of Commerce staff and board of directors. Officials should work with a professional public relations firm to develop a positive campaign highlighting the needs and benefits of the airport.

VIII. CONCLUSION

It is clear that many communities have done more than just rely on the federal agencies to help them with airport land use incompatibilities. Plenty of resources are available that can be easily accessed, many of which are described in this report. Overlay plans, master plans, and airport plans can become the fabric around which airport land use issues can be approached. Zoning is a function of planning and should be carefully accomplished after advice from federal and state aviation organizations. The FAA has published all sorts of materials in this area, as have the states of California, Wisconsin, Minnesota, and others. Policy makers should consider making "master" planning a must if airports are to thrive and provide a reliable link to the Nation's travel needs.

The same entities that have a responsibility to plan ahead also have the burden of creating an atmosphere by various ordinances, regulations, statutes, and operating rules that will implement the plans they have made. The policy makers are the lawmakers, both by tradition and by the form of government in a democratic society.

Ultimately, there will be disputes about the use of the skies, which many citizens will see as interference with their quiet and safe enjoyment of their land, or landowners will believe that a "taking" of their land or their "air rights" has deprived them of their property or its use. A delicate balance must be struck, but occasionally, the conflict of aircraft overflights and noise, seen by landowners as violations of their rights, finds its way into the court system. Occasionally, the only way for a governmental entity to create safety of flight around airports is to buy the land adjoining the airport or condemn it under principles of eminent domain. The principles of inverse condemnation then lead to a lawsuit against the governmental authority when the landowner claims that there has been a taking without compensation. The cases in this area are legend. Courts are widely split on the issues. State and federal courts often disagree in their decisions. Local authorities are in a dilemma—they must try to follow FAA's advice, and if federal financial aid is sought, local authorities are bound to follow a whole series of federal statutes and regulations in exchange for that financial help. But, in so following, the local government may find itself in court, threatened with a large potential damage claim with generally no contribution from the federal government available.

It should be added that under certain circumstances, federal monetary assistance may be available to assist local governments in acquiring land adjacent to airports to defray costs of condemnation if air safety is involved.

This report has sought to bring forward sufficient case law on the takings issue to alert the policy makers to the issues and to suggest that great care must be taken in the land use area to avoid very uncomfortable circumstances.

A listing of corrective, preventative, and mitigation strategies to discourage or prohibit airport land use incompatibilities has been included in the report as has been a reflection of the answers provided to the survey, showing very important results.

Appendix A
Results of Survey to Airport Authorities and Units of Government

There are over 10,000 airports located throughout the United States. Airports are generally classified by the Federal Aviation Administration according to hub size based upon the kinds of aircraft using the airport and the annual number of enplaned passengers served. Those hub sizes are: Large Hub, Medium Hub, Small Hub, Non-Hub, Commercial Service, and General Aviation Airports. It would not be practical to survey all the airports in the United States, so consultants, in preparing a list of airports to be surveyed for this study, took into consideration factors such as airport hub size, state location and population, and cities known throughout the airport industry as having experienced difficulties with incompatible airport development. While recognizing that airports accommodating larger passenger and cargo aircraft volume will most likely have had some significant community incompatible growth issues, most of those airports, over the past 40–50 years, have developed programs and strategies for trying to deal with such conflicts and have found the resources to do so.

Other smaller airports, while not experiencing growth issues of the same magnitude, have found similar problems and issues but with fewer resources available to them with which to resolve conflicts. For this reason, the consultants included General Aviation Airports and Commercial Service Airports in the list to be surveyed. General Aviation airports were carefully selected from each state after studying aviation service statistics and aerial photos of airports to try to determine potential or existing incompatible growth conflicts.

Interactive surveys were sent via the Internet to 231 airports of the six-hub types through the Airport Managers or Directors. In an attempt to develop sufficient interest in the subject matter, surveys were also sent to City Managers, County Administrators, Airport or Port Authority Officials, and various Legal Departments of the units of governments responsible for their airport in their political jurisdiction. The following table illustrates the number of surveys sent by each classification.

In an attempt to maximize response, the surveys were sent out on two separate occasions. Within the time specified, a total of 45 responses were received. The table below lists the responses by hub size, and the percentage of the response by hub size.

Airport Size	**Surveys sent**	**Number of responses**	**Percentage**
Large Hub Airports	28	7	25%
Medium Hub Airports	36	7	19%
Small Hub Airports	30	3	10%
Non-Hub Airports	21	3	14%
Commercial Service Airports	10	2	20%
General Aviation Airports	106	23	22%

Since the survey is nonscientific, results are applicable only as to the respondents, and readers can judge whether the responses are sufficient to provide insight as to the questions posed.

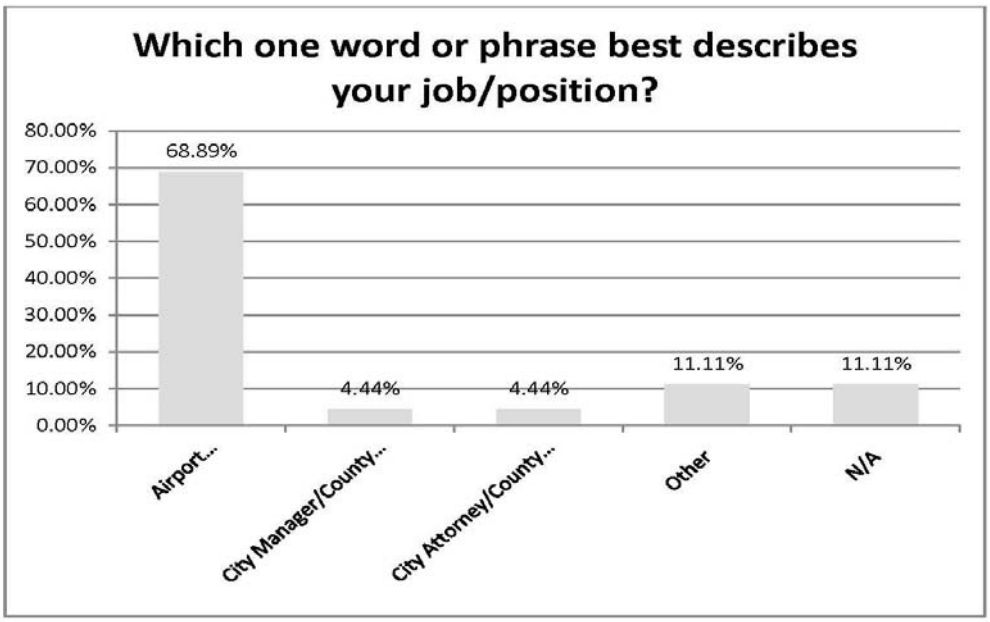

CHART 1

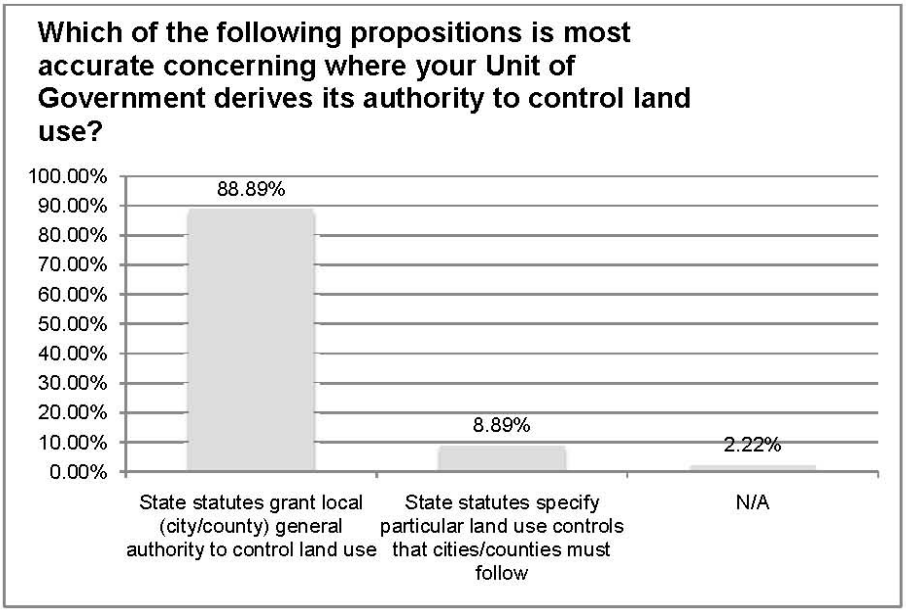

CHART 2

Chart #2 shows that 89% of respondents have state authority to control land uses and promulgate appropriate restrictions to protect the airport .

Most respondents report that planning/zoning Boards/Commissions act upon airport land use issues and recommend action to elected bodies of government (Chart #3) and most recommendations are followed by the elected body (Chart #4).

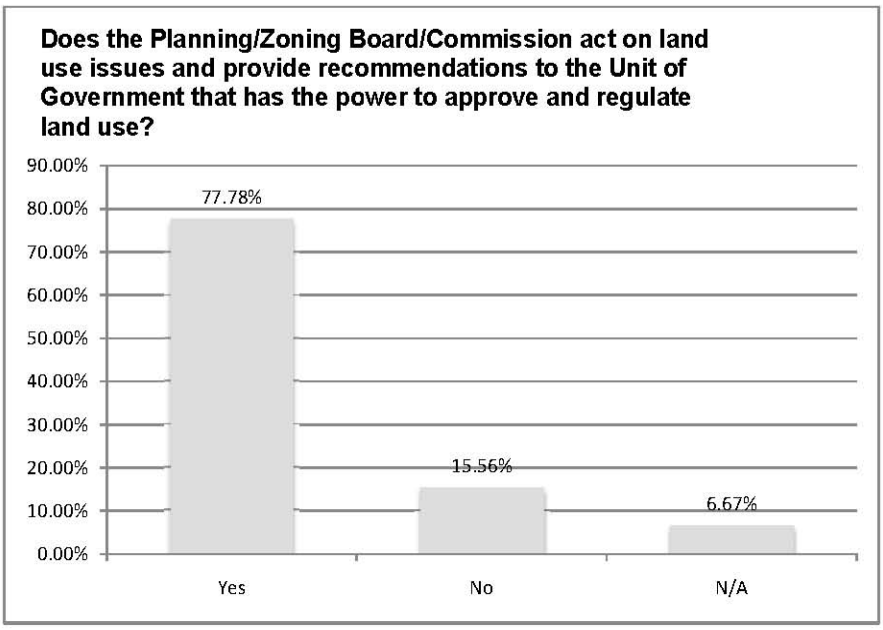

CHART 3

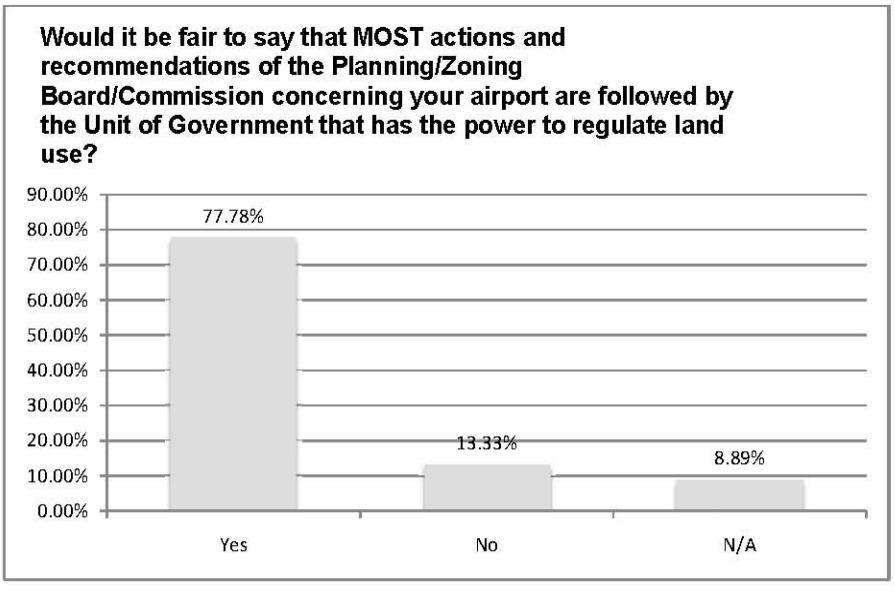

CHART 4

Less than half of the states responding have requirements for the adoption of comprehensive land use Master Plans (Chart #5), but mandated or not, 89% of respondents reported that their communities have adopted comprehensive/master plans (Chart #6).

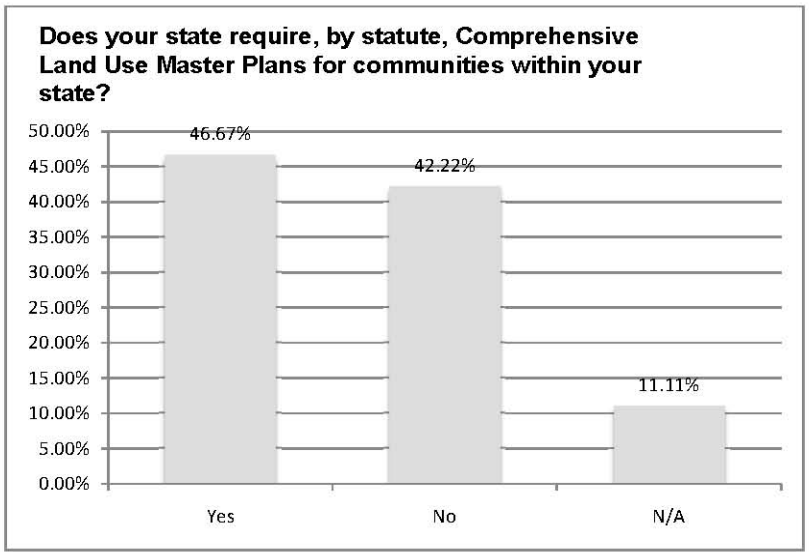

CHART 5

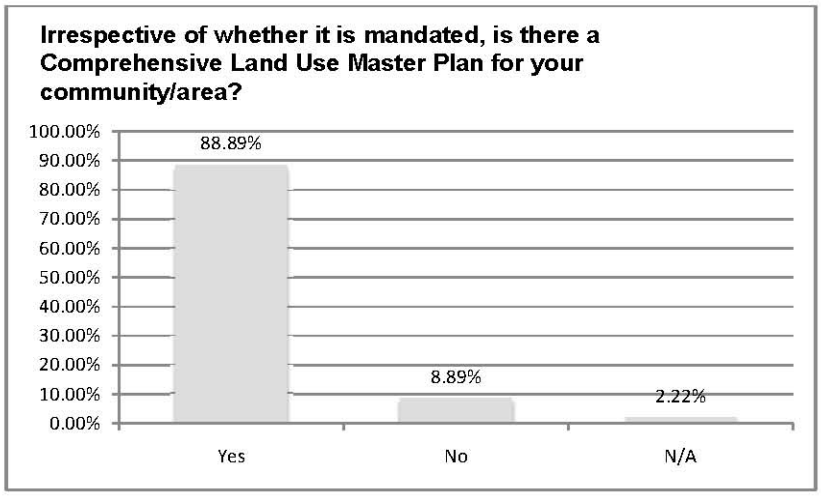

CHART 6

More than 90% of those responding have adopted airport Master Plans (Chart #7).

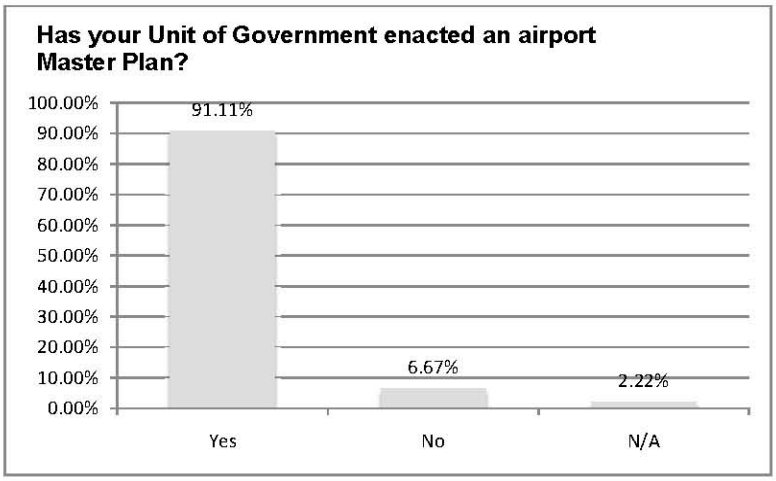

CHART 7

Less than half of the airports responding have conducted studies which define airport compatible/incompatible land uses (Chart #8).

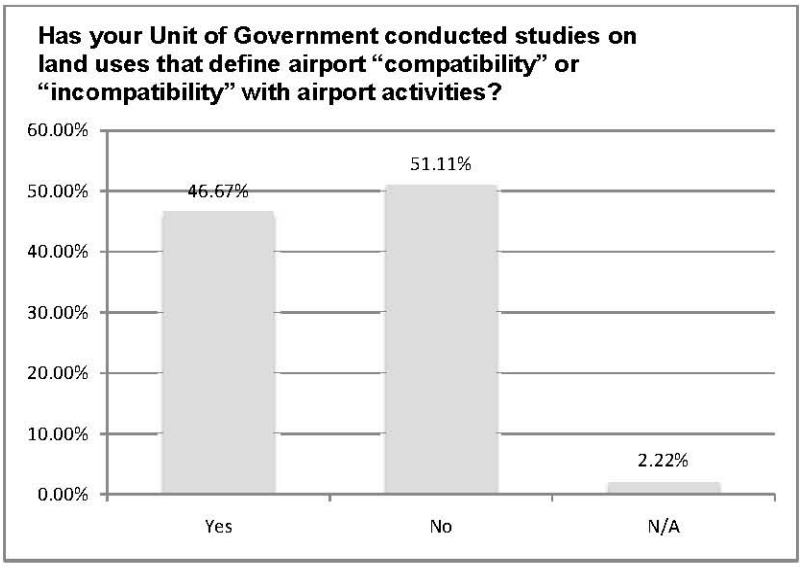

CHART 8

Nearly all reporting airports have utilized a series of land use control tools, measures, or strategies to control land uses on or adjacent to airports (Chart #9).

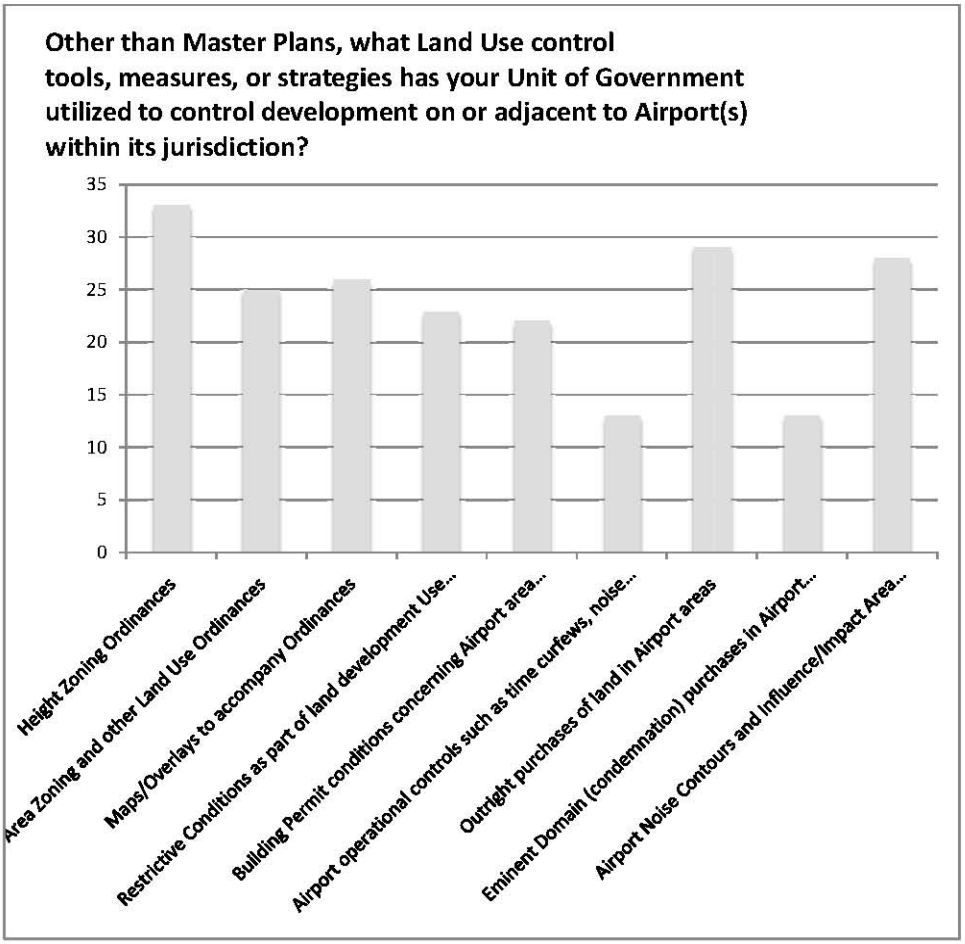

CHART 9

Chart #10 shows ways and means which have been used by airports to communicate master plans, ordinances, land use restrictions to the public.

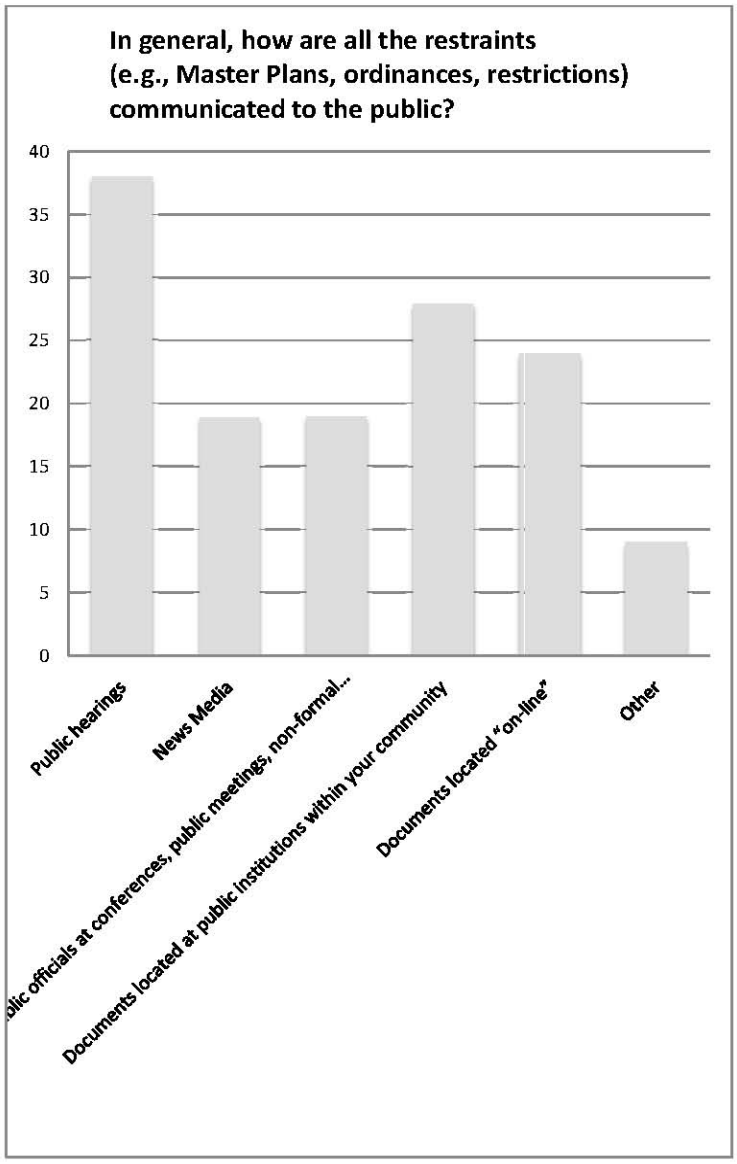

CHART 10

Approximately 73% of airports reported that they currently have independent incompatible land uses on or adjacent to the airport (Chart #11)

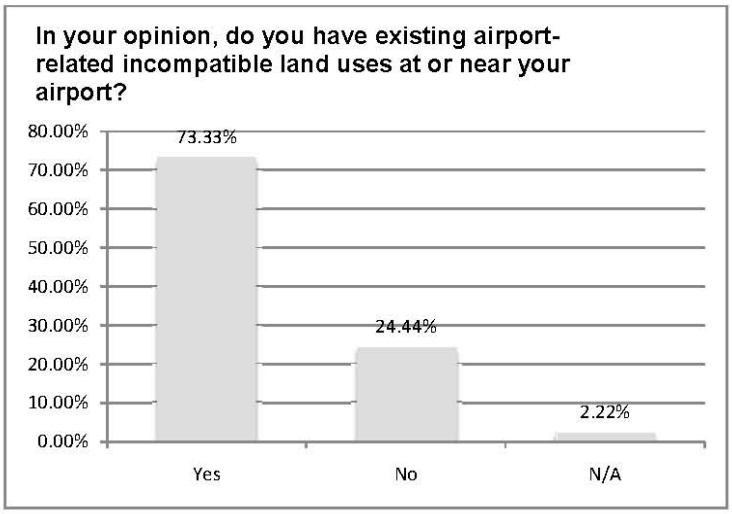

CHART 11

64% reported that incompatible land uses PRE-EXISTED comprehensive land use master plans or airport master plans (Chart #12).

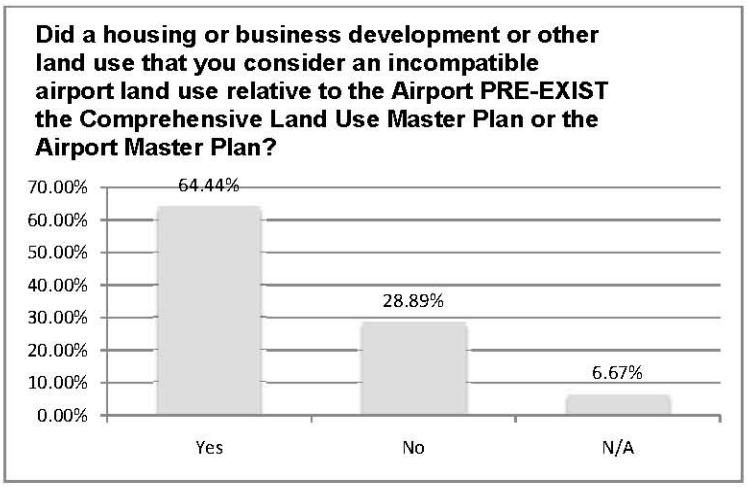

CHART 12

Some 46% of respondents report that housing, businesses, or other incompatible land uses occurred AFTER the adoption of comprehensive land use or airport master plans.

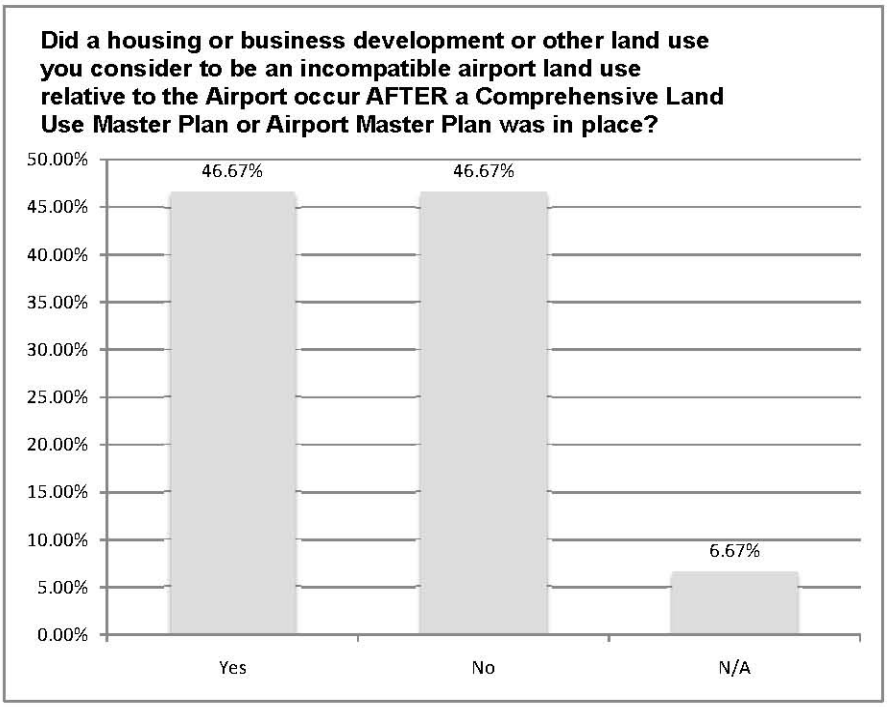

CHART 13

Nearly 33% of airport report that they have experienced legal challenges relating to land use issues at the airport (Chart #14) and 33% of those challenges resulted in litigation (Chart# 15).

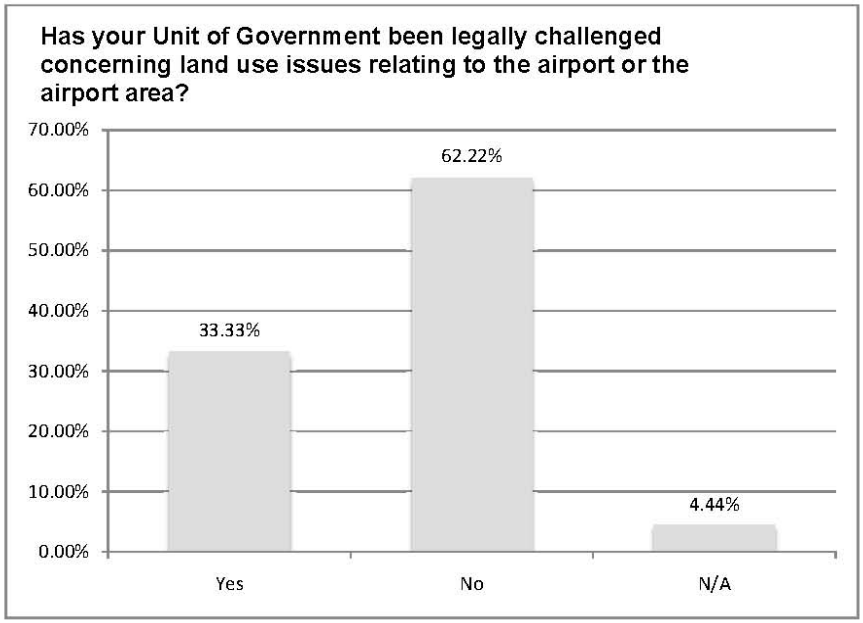

CHART 14

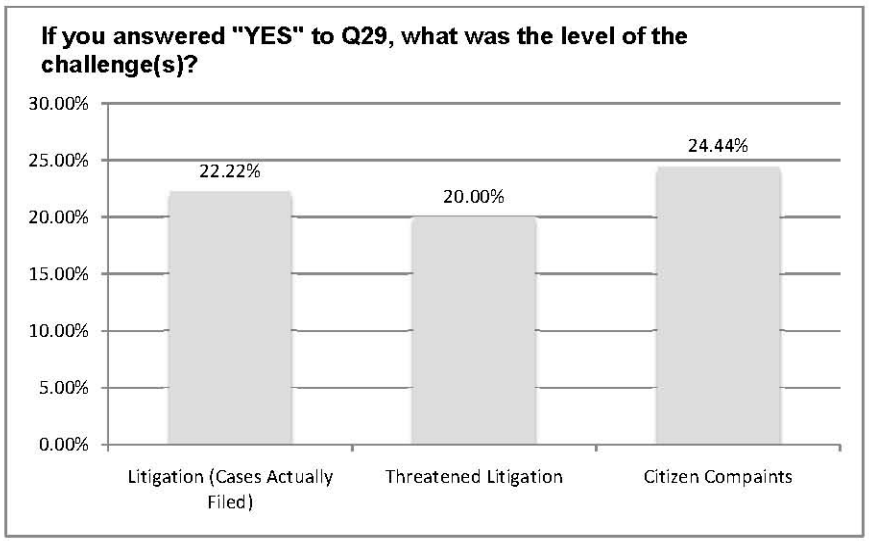

CHART 15

More than 48% of responding airports report that adjacent landowners have requested operational constraints and noise abatement procedures (Chart #16) but only 11% have implemented restricted operational procedures (Chart#17).

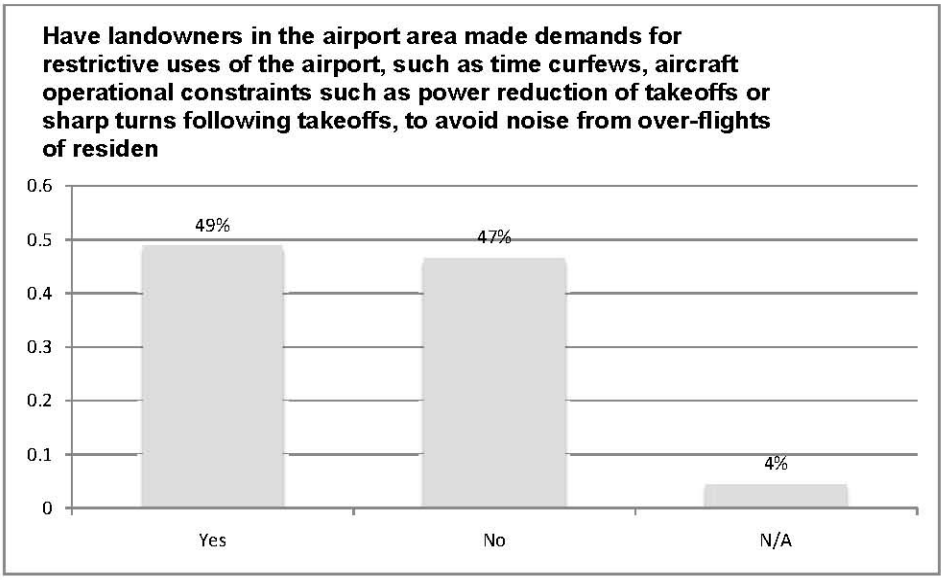

CHART 16

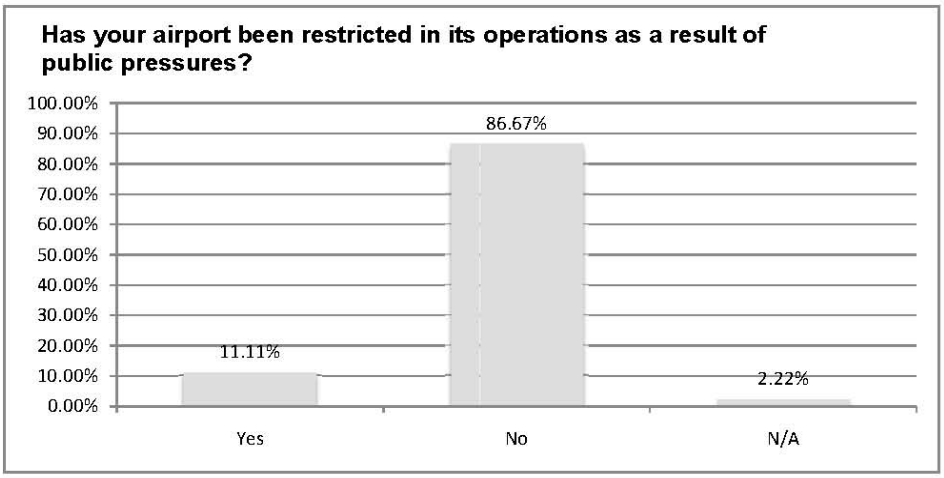

CHART 17

More than 88% of airports and their governments have the power of condemnation (Chart #18) while only 49% of reporting airports have used eminent domain to purchase land which had incompatible uses (Chart #19).

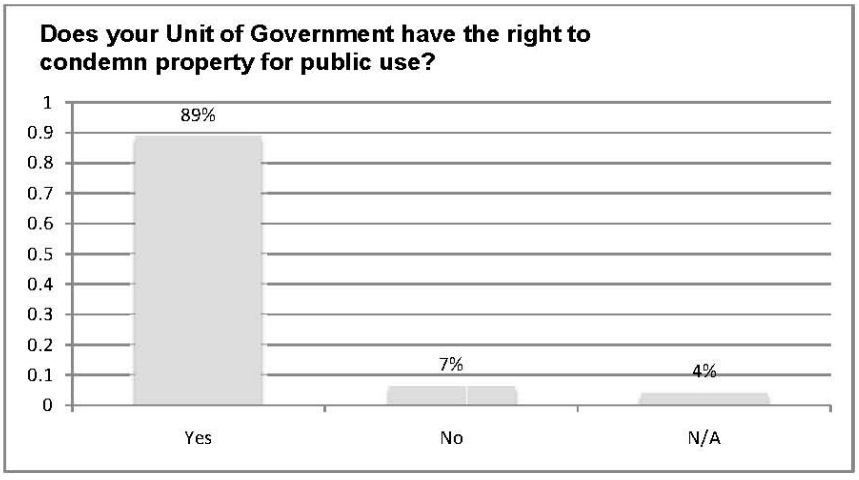

CHART 18

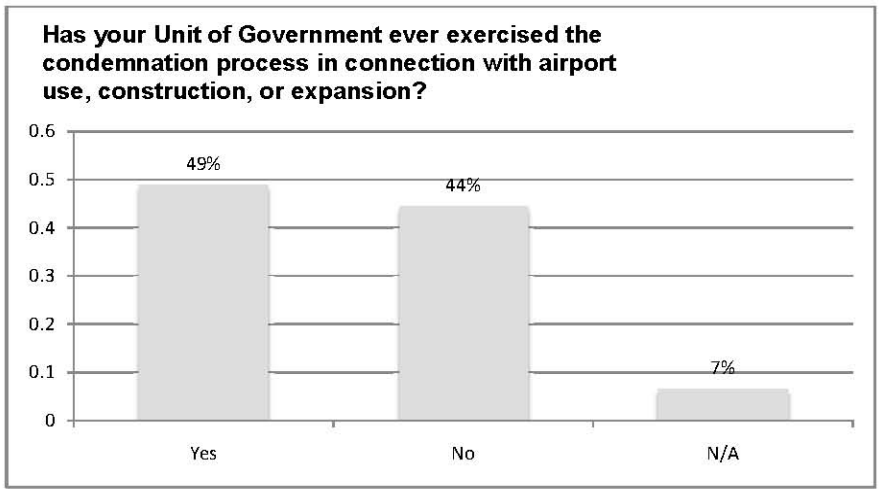

CHART 19

At only 16% of reporting airports, landowners had claimed inverse condemnation or taking land by the airport without just compensation (Chart #20).

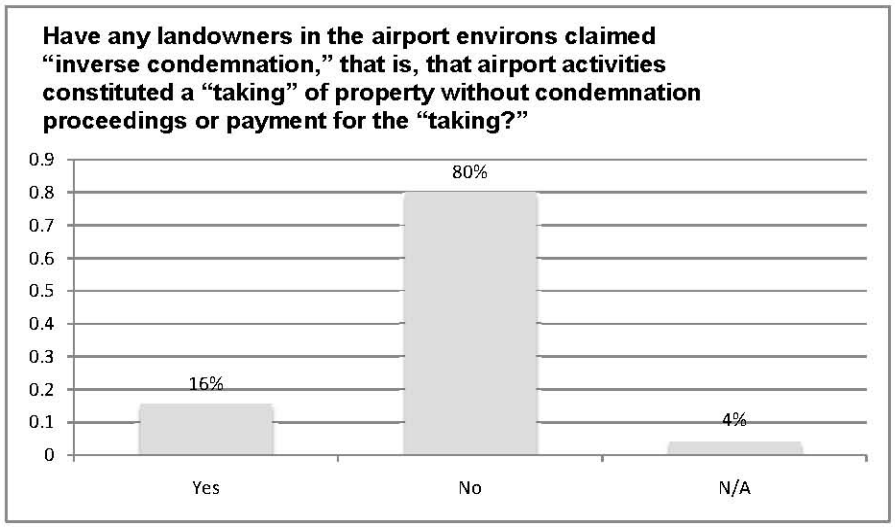

CHART 20

Only 38% of reporting airports have all airport property including approach/departure corridors within their jurisdiction; 51% have property including approach/departure corridors in an adjacent community (Chart #21).

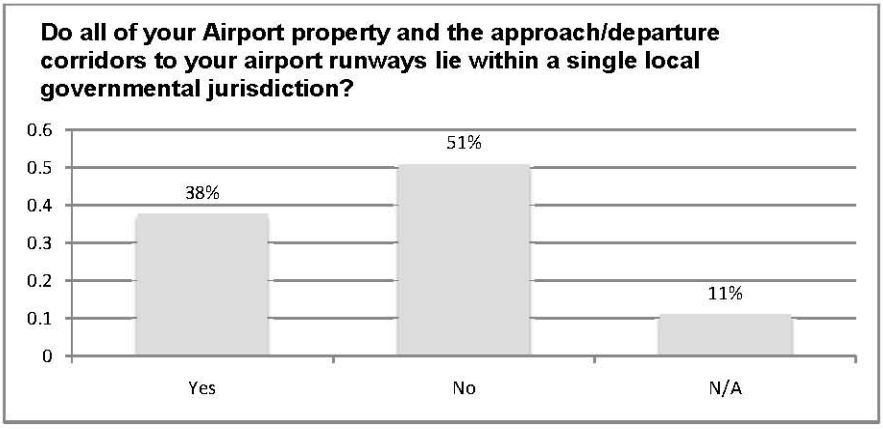

CHART 21

Only 7% of responding airports have regional planning agencies responsible for coordinating protective legislation among adjacent governmental entities for airport land use conflict issues (Chart #22).

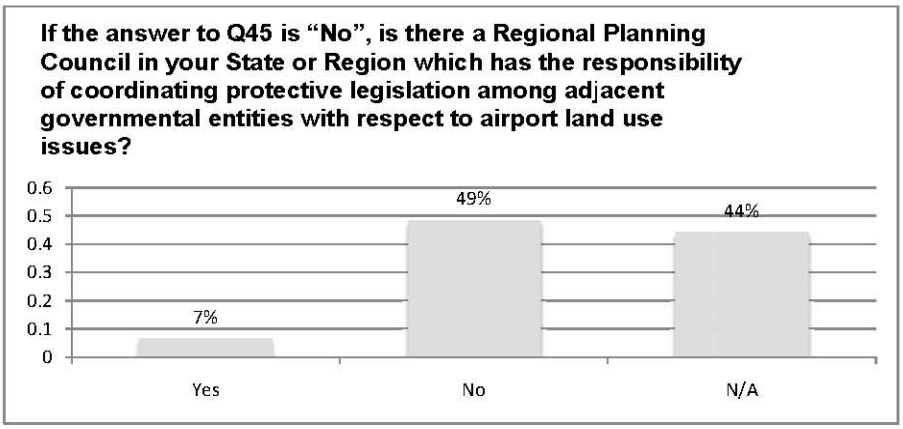

CHART 22

Of that 7%, only 18% of Regional Planning agencies address incompatible land use issues among adjacent jurisdictions (Chart #23)

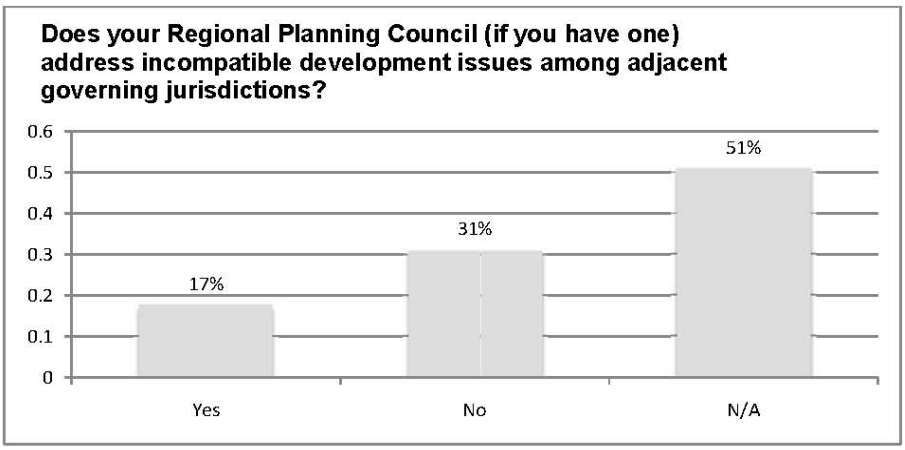

CHART 23

Only 7% have legal authority to enforce regional planning agency decisions (Chart #24), however, 31% or airports reporting have been successful in acquiring the support of adjacent jurisdictions in adopting adequate land use control measures to protect the approach/departure corridors and other airport related land from incompatible development (Chart 25).

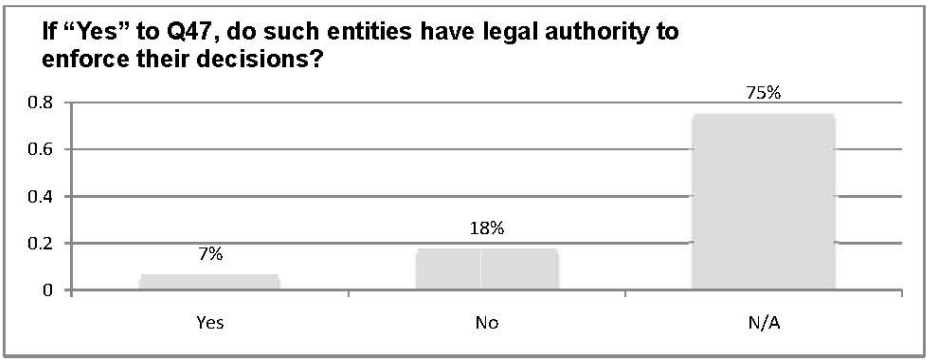

CHART 24

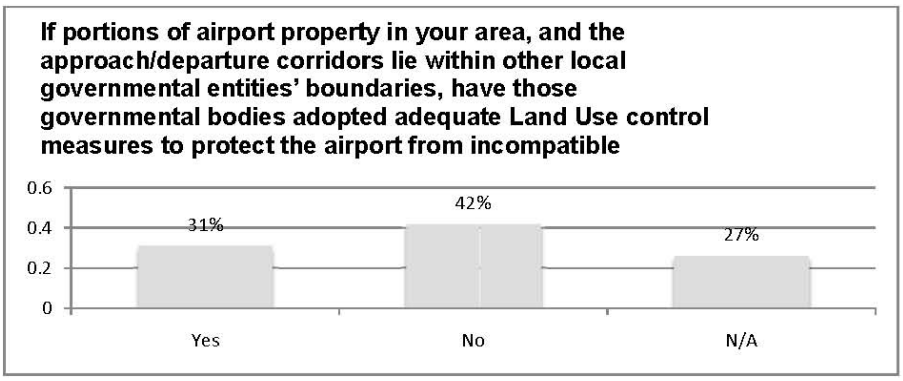

CHART 25

Only 5% of reporting airports have been forced to litigate against other governmental entities to enforce land use control methods and measures to protect the airport from incompatible development and the adjacent entity. (Chart #26).

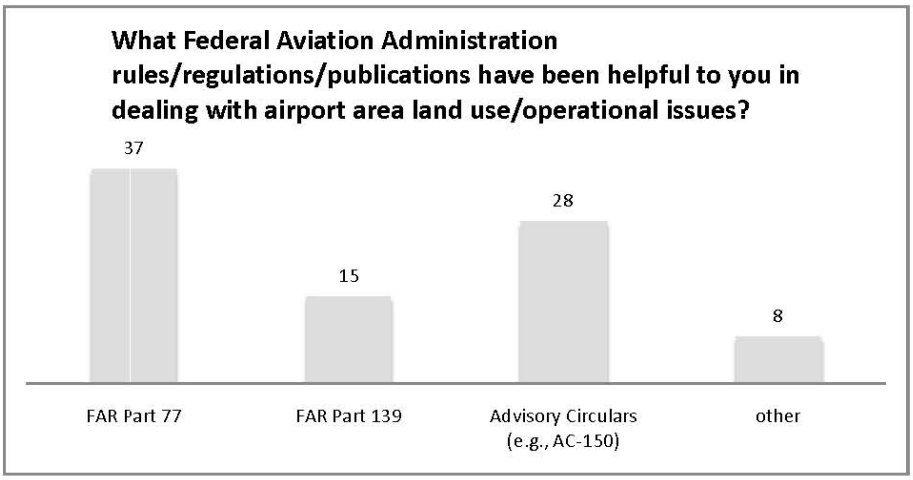

CHART 26

Responding airports reported that FAA rules and regulations, advisory circulars, and state aviation departments rules, regulations, advice and publications have been somewhat helpful and useful in dealing with airport land use issues (Chart # 27)

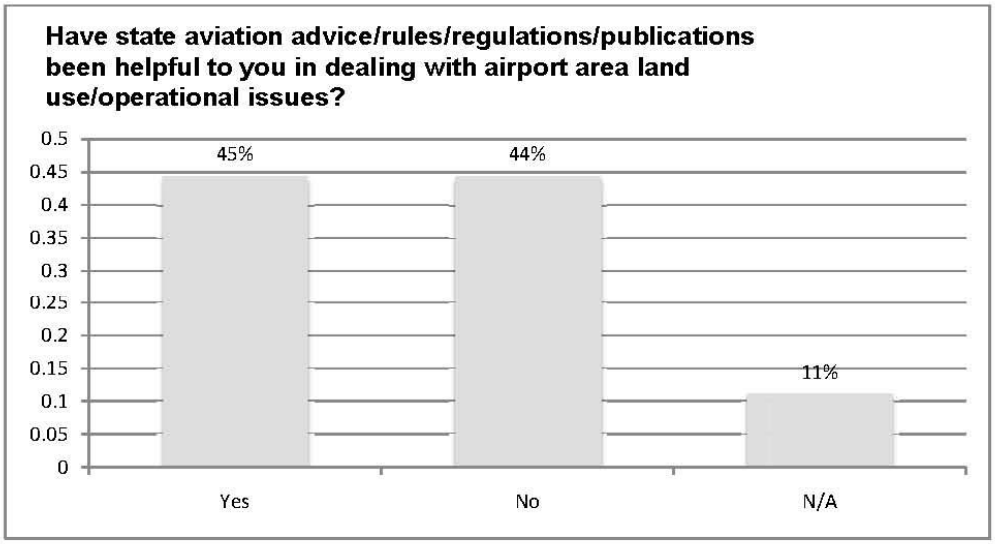

CHART 27

TRB TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

WILLIAM V. CHEEK & ASSOCIATES AVIATION CONSULTING

Airport Land Use Survey

This survey is being conducted by W.V. Cheek & Associates on behalf of the Transportation Research Board. We wish to survey the current applicable actions (statutory and case law) affecting the creation, dissemination, and enforcement of airport-area land use restrictions. We value your contribution, and ask that you take a few moments to answer this questionnaire. Data gathered, and the report which will follow, is critical to the future of our industry. Confidentiality of responses to this survey will be observed and all responses will be collated and de-identified. All contributors, airports and specific government entities will remain anonymous. As a "Thank-you" for contributing to this study, we will forward a copy of our final report to you electronically if you provide your email address.

There are 4 ways to submit this survey - Please return by February 15th

1. Fax	928-717-1392
2. Mail	WV Cheek & Associates PMB #468, 1042 Willow Creek Rd., Suite 101 Prescott, AZ 86305
3. Email	survey@wvcheek.com
4. Online	http://wvcheek.questionform.com/public/trb

Introduction

1. Please include your:

   Airport _____

   City _____

   State _____

2. Which *one* word or phrase best describes your job/position?
   - ☐ Airport Manager/Director
   - ☐ City Manager/County Executive-Manager
   - ☐ Manager of some other function of City or County Operations that does not oversee Airports
   - ☐ Mayor (elected)
   - ☐ City Attorney/County Attorney/Legal Department
   - ☐ Planning and Zoning Director/Chairman
   - ☐ Risk Manager (City/County)
   - ☐ Other (Please Describe) _____

3. Specific Structure/Organization/Unit of Government that you work in
   - ☐ City Council (elected)
   - ☐ County Commissioner/Supervisor (elected)
   - ☐ Authorities/Commissions/Port Authority
   - ☐ State Transportation Department (Aviation area)
   - ☐ Other (Please Describe) _____

TRB TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

WILLIAM V. CHEEK & ASSOCIATES AVIATION CONSULTING

Sources of Authority and Influence

4. Following are several statements that might reflect how your "Unit of Government" functions.

(Please mark all answers that apply).

- ☐ Airport Manager/Director reports to City or County Administration
- ☐ City Manager/County Executive-Manager; Reports to Council/Commission/Board
- ☐ Legal Department reports to City/County Council/Commission/Board
- ☐ Planning Commission/Zoning Board acts on land use issues and recommends final actions to City/County Unit of Government
- ☐ Regional or Area Council comprising overlapping jurisdictions that consults and recommends actions concerning Airport issues to Units of Government
- ☐ State Transportation Dep't/ State Airport Director that (who) consults and recommends actions concerning Airport issues to Units of Government
- ☐ Specify Other Relationships/Structures Not Listed Above: _____

5. Which of the following propositions is <u>most accurate</u> concerning where your Unit of Government derives its authority to control <u>land use</u>?
   - ☐ State statutes grant local (city/county) general authority to control land use
   - ☐ State statutes specify particular land use controls that cities/counties *must* follow

6. Which of the following propositions is <u>most accurate</u> concerning what your Unit of Government can do to control airport-area land use?
   - ☐ State Statutes DO NOT specify Airport-area land use or require airport-area planning
   - ☐ State Statutes DO specify airport-area land uses and require local Units of Government to do Airport-area planning

   Please include Code/Statute Citation, _____

7. Does your Unit of Government include a Planning/Zoning Board or Commission?
   ☐ Yes ☐ No

8. Does the Planning/Zoning Board/Commission act on land use issues and provide recommendations to the Unit of Government that has the power to approve and regulate land use?
   ☐ Yes ☐ No

9. Would it be fair to say that <u>most</u> actions and recommendations of the Planning/Zoning Board/Commission concerning your airport are followed by the Unit of Government that has the power to regulate land use?
   ☐ Yes ☐ No

   If you answered "No" to Q9, why is your answer in the negative?
   _____
   _____

10. Does your state require, by statute, Comprehensive Land Use Master Plans for communities within your state?
    ☐ Yes ☐ No

TRB TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

WILLIAM V. CHEEK & ASSOCIATES AVIATION CONSULTING

11. Irrespective of whether it is mandated, is there a Comprehensive Land Use Master Plan for your community/area?
☐ Yes ☐ No

12. If you answered "Yes" to Q11, is it reasonably current (within 5 yrs. of adoption/revision)?
☐ Yes ☐ No

13. Has your Unit of Government enacted an airport Master Plan?
☐ Yes ☐ No

14. If your answer to Q13 is "**Yes**," is it reasonably current (within 5 yrs. of adoption/revision)?
☐ Yes ☐ No

15. If your answer to Q13 is "**No**," has your Unit of Government enacted any Land-Use ordinances or other controls regarding the airport area?
☐ Yes ☐ No

If your previous answer involves Land-Use ordinances outside of Airport Master Plans, please write a brief description of these ordinances:

_____

_____

16. Has your Unit of Government conducted studies on land uses that define airport "compatibility" or "incompatibility" with airport activities?
☐ Yes ☐ No

IF YES, ARE THESE STUDIES ARE AVAILABLE AS PUBLIC DOCUMENTS or posted on a website, AND CAN BE ACQUIRED BY THIS STUDY GROUP? Please advise names/addresses (or e-mail addresses) of persons/offices or website addresses where such materials may be obtained. Thank You.

_____

17. Other than Master Plans, what Land Use control tools, measures, or strategies has your Unit of Government utilized to control development on or adjacent to Airport(s) within its jurisdiction? (Mark all that apply)

☐ Height Zoning Ordinances
☐ Area Zoning and other Land Use Ordinances
☐ Maps/Overlays to accompany Ordinances
☐ Restrictive Conditions as part of land development Use Permits
☐ Building Permit conditions concerning Airport area structures
☐ Airport operational controls such as time curfews, noise abatement procedures or flight pattern restrictions
☐ Outright purchases of land in Airport areas
☐ Eminent Domain (condemnation) purchases in Airport areas
☐ Requirement that developers obtain statements (waivers/avigation easements) from purchasers of land near the airport
☐ Airport Noise Contours and Influence/Impact Area Ordinances
☐ Other? Please describe:

_____

_____

TRB TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

WILLIAM V. CHEEK & ASSOCIATES AVIATION CONSULTING

18. In general, how are all the restraints (*e.g.,* Master Plans, ordinances, restrictions) communicated to the public? (Mark all that apply).
    - ☐ Public hearings
    - ☐ News Media
    - ☐ Appearances by public officials at conferences, public meetings, non-formal sessions, talk shows, etc.
    - ☐ Documents located at public institutions within your community
    - ☐ Documents located "on-line"
    - ☐ Other _____

19. Please rate your impressions on the effectiveness of restraints on airport-area land use in your area. (Statutes, ordinances, resolutions, case law) Scale of 1 to 5 (#1 = "Not Effective" & #5 = "Extremely Effective")

    1__ 2__ 3__ 4__ 5___

    COMMENTS:_____

20. Who provides regular Legal Representation for your airport?
    - ☐ Don't know (Skip to Q23)
    - ☐ Airport Attorney
    - ☐ City/County Attorney
    - ☐ Port Authority Counsel
    - ☐ Airport Authority Counsel
    - ☐ State Attorney General
    - ☐ Outside Counsel

21. Would the person or firm you referred to in Q20 be knowledgeable about the history of Airport Land-Use compatibility ordinances, zoning and/or litigation at your airport?
    ☐ Yes ☐ No

Please provide contact information for that individual / firm:

Name of Firm_____ Name of Attorney _____

Address _____

E-mail _____ Phone, if no e-mail _____

22. Has your Unit of Government ever been required to use counsel on Airport Land-Use Compatibility matters?
    ☐ Yes ☐ No

If Yes please provide:

Name of Firm_____ Name of Attorney_____

Address _____

E-mail _____ Phone, if no e-mail _____

TRB TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

WILLIAM V. CHEEK & ASSOCIATES AVIATION CONSULTING

Land-Use Issues and Challenges

23. What, *in your opinion*, are the MOST compelling issues concerning land use around Airport(s) in your community/area?

Please rank-order your impressions on a scale of 1-5 #1 = "Most Compelling" to #5 = "Least Compelling"

RANK	LAND USE ISSUES
	Noise
	Pollution or other Environmental factors
	Safety of Airport neighbors
	Land use (development) which is incompatible with the Airport for reasons other than those listed
	"Other Incompatibilities" (describe below)

"Other Incompatibilities" please describe here _____

24. *In your opinion*, do you have existing airport-related incompatible land uses at or near your airport?
☐ Yes ☐ No

25. *In your opinion*, what are the airport-related "land use incompatibilities" that exist in your area? (Mark all that apply).
☐ Single-family housing development too near the Airport
☐ Multiple housing development too close to the Airport
☐ Commercial development too near the Airport
☐ Schools, churches, stadiums, hospitals, places of public assembly, high density uses too near the Airport
☐ Other / Please Describe:_____

26. Did a housing or business development or other land use that you consider an *incompatible airport land use* relative to the Airport PRE-EXIST the Comprehensive Land Use Master Plan or the Airport Master Plan?
☐ Yes ☐ No

27. Did a housing or business development or other land use you consider to be an *incompatible airport land use* relative to the Airport occur AFTER a Comprehensive Land Use Master Plan or Airport Master Plan was in place?
☐ Yes ☐ No

28. If you answered "Yes" to Q27, how did the development proceed if it was in apparent conflict with the Comprehensive Land Use Master Plan and/or the Airport Master Plan?

_____
_____
_____

29. Has your Unit of Government been legally challenged concerning land use issues relating to the airport or the airport area?
☐ Yes ☐ No

30. If you answered "Yes" to Q29, what was the level of the challenge(s)? Mark whatever applies.

☐ Yes ☐ No Litigation (cases actually filed)
☐ Yes ☐ No Threatened litigation
☐ Yes ☐ No Citizen Complaints that did not reach the level of litigation or threatened litigation

31. If you marked "litigation" or "threatened litigation" to Q30, what was (were) the essence of the issue(s) raised? (Mark all that apply).
    - ☐ Excessive airport-related noise
    - ☐ Excessive airport-related pollution
    - ☐ Loss of quiet enjoyment and/or reasonable use of property due to airport-related functions
    - ☐ Claim of Devaluation of property values due to airport-related functions
    - ☐ Claim of loss of business due to airport-related functions
    - ☐ Claim that a specific Unit of Government did not have jurisdiction (power) to affect or control land use
    - ☐ Other? Brief explanation _____

32. Have landowners in the airport area made demands for restrictive uses of the airport, such as time curfews, aircraft operational constraints such as power reduction of takeoffs or sharp turns following takeoffs, to avoid noise from over-flights of residential areas? ☐ Yes ☐ No

33. Has your airport been restricted in its operations as a result of public pressures? ☐ Yes ☐ No

34. Does your Unit of Government have the right to condemn property for public use? ☐ Yes ☐ No

35. Has your Unit of Government ever exercised the condemnation process in connection with airport use, construction, or expansion? ☐ Yes ☐ No

36. Was the result of the condemnation process costly, in your opinion? ☐ Yes ☐ No

37. Have any landowners in the airport environs claimed "inverse condemnation," that is, that airport activities constituted a "taking" of property without condemnation proceedings or payment for the "taking?" ☐ Yes ☐ No

38. If "Yes" to Q37, what was the result of that claim—that is, did your Unit of Government end up paying compensation to the landowners? _____

39. If "Yes" to Q37, was it by way of "settlement" or did it require a court trial and judgment? ☐Trial ☐Settlement

40. Have any landowners in the airport area who made claims for losses or lack of quiet enjoyment sued airlines or other airport tenants instead of the Unit of Government that controls the airport? ☐ Yes ☐ No

41. What was the end result of *that* litigation (Q40)
    - ☐ Airlines or other airport tenants/users "lost" the case(s), *i.e.* paid out money?
    - ☐ Airlines or other airport tenants "won" the case, *i.e.* (dismissed or otherwise adjudicated in favor of airline(s) or other Airport tenants/users).

42. If your Unit of Government, Airline, or other airport tenants/users "lost" a case(s) and if the case was appealed, please list citation(s) from reports at the appellate level:
    _____
    _____

43. If the Unit of Government, airline, or other airport tenants/users "won" the case(s) and if the case was appealed, please list citation(s) from reports at the appellate level:
    _____
    _____

44. Has your Unit of Government been required by court action to restrict airport operations, such as times of operation, flight patterns, or otherwise? ☐ Yes ☐ No

45. Were there, in your opinion, pre-existing airport "incompatible" developments (that is, *before* the airport existed) which have currently prevented the airport from expanding or making improvements to accommodate changes in airport facilities to meet growth and expansion demands at the airport? ☐ Yes ☐ No

    Example(s) _____

46. Do all of your Airport property and the approach/departure corridors to your airport runways lie within a *single* local governmental jurisdiction? ☐ Yes ☐ No

    If the answer to Q45 is "No", is there a Regional Planning Council in your State or Region which has the responsibility of coordinating protective legislation among adjacent governmental entities with respect to airport land use issues? ☐ Yes ☐ No

47. Does your Regional Planning Council (if you have one) address incompatible development issues among adjacent governing jurisdictions? ☐ Yes ☐ No

48. If "Yes" to Q47, do such entities have legal authority to enforce their decisions? ☐ Yes ☐ No

49. If portions of airport property in your area, and the approach/departure corridors lie within other local governmental entities' boundaries, have those governmental bodies adopted adequate Land Use control measures to protect the airport from incompatible development? ☐ Yes ☐ No

50. Has it been necessary to litigate against other governmental entities to enforce Land Use control methods and measures to protect your airport from incompatible development in another community adjacent to your airport?
    ☐ Yes ☐ No If "**Yes**", what were the results?

    _____

    Please cite the case if it went to an appellate court. _____

51. What Federal Aviation Administration rules/regulations/publications have been helpful to you in dealing with airport area land use/operational issues?
    ☐ FAR Part 77
    ☐ FAR Part 139
    ☐ Advisory Circulars (*e.g.*, AC-150)
    ☐ Other? Please specify _____

52. Have state aviation advice/rules/regulations/publications been helpful to you in dealing with airport area land use/operational issues? ☐ Yes ☐ No

53. Please specify what agencies you are referring to so that we may contact them for further information:

    Name _____

    E-mail contact_____

    Telephone number, if no E-mail _____

Other

54. Other than the traditional processes for dealing with Land-use incompatibility issues, has your Unit of Government developed any other innovative methods or processes to control airport incompatibility Land-Use issues?
    ☐ Yes ☐ No If "**Yes**", please describe.

    _____

    _____

TRB TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

WILLIAM V. CHEEK & ASSOCIATES AVIATION CONSULTING

55. Please comment on any other issues you feel are relevant to this survey and study:

_____

_____

_____

56. Have you done or supervised any legal research in the areas reflected in this survey?
☐ Yes ☐ No

57. Would you be willing to share copies of briefs or references with the TRB and us IF we paid copying costs and provided attribution in our final report? ☐ Yes ☐ No

58. Would you be willing to be interviewed by telephone or in person concerning some of the issues reflected in this survey? ☐ Yes ☐ No

If "**yes**", please provide Contact information and indicate the best time or method to contact you

Name _____

Contact Information _____

_____

Best day/time to call _____

If you wish to discuss any of these issues or add any thoughts, please feel free to include those comments on this survey or contact us at:

William V. Cheek & Associates Aviation Consulting
PMB #468
1042 Willow Creek Rd. Suite 101
Prescott, AZ 86305

Phone 928-776-8745
Fax 928-717-1392
www.wvcheek.com

Thank you for your willingness to assist us and the Transportation Research Board with this vital project. We realize it took valuable time to work through this survey and we are grateful for your efforts.

Confidentiality of responses to this survey will be observed and all responses will be collated and de-identified. All contributors, airports and specific government entities will remain anonymous

As a "Thank-you" for contributing to this study, we will forward a copy of our final report to you electronically if you provide your email address below.

Email: _____

Appendix B State Statutes and Statements from Various Guidebooks Regarding Airport Related Land Use

California: Aeronautics Law, Public Utilities Code of California (§21001 *et seq*.), requires all counties which have airports to create an Airport Land Use Commission (ALUP) for the purposes shown in italics below:

§21670. Creation; Membership; Selection

(a) The Legislature hereby finds and declares that:

(1) It is in the public interest to provide for the orderly development of each public use airport in this state and the area surrounding these airports so as to promote the overall goals and objectives of the California airport noise standards adopted pursuant to Section 21669 and to prevent the creation of new noise and safety problems.

(2) It is the purpose of this article to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses.

(b) In order to achieve the purposes of this article, every county in which there is located an airport which is served by a scheduled airline shall establish an airport land use commission. Every county, in which there is located an airport which is not served by a scheduled airline, but is operated for the benefit of the general public*, shall establish an airport land use commission, except that the board of supervisors for the county may, after consultation with the appropriate airport operators and affected local entities and after a public hearing, adopt a resolution finding that there are no noise, public safety, or land use issues affecting any airport in the county which require the creation of a commission and declaring the county exempt from that requirement.* The board shall, in this event, transmit a copy of the resolution to the Director of Transportation. For purposes of this section, "commission" means an airport land use commission. Each commission shall consist of seven members to be selected as follows:

(1) Two representing the cities in the county, appointed by a city selection committee comprised of the mayors of all the cities within that county, except that if there are any cities contiguous or adjacent to the qualifying airport, at least one representative shall be appointed therefrom. If there are no cities within a county, the number of representatives provided for by subdivisions (2) and (3) shall each be increased by one. (2) Two representing the county, appointed by the board of supervisors. (3) Two having expertise in aviation, appointed by a selection committee comprised of the managers of all the public airports within that county.(4) One representing the general public, appointed by the other six members of the commission.(c)

Public officers, whether elected or appointed, may be appointed and serve as members of the commission during their terms of public office. (e) A person having an "expertise in aviation" means a person who, by way of education, training, business, experience, vocation, or avocation has acquired and possesses particular knowledge of, and familiarity with, the function, operation, and role of airports, or is an elected official of a local agency which owns or operates an airport.[72]

Florida: State of Florida Statutes, Chapter 333.02, "Airport Zoning." "It is hereby found that an airport hazard endangers the lives and property of users of the airport and of occupants of land in its vicinity and also, if of the obstruction type, in effect reduces the size of the area available for the taking off, maneuvering, or landing of aircraft, thus tending to destroy or impair the utility of the airport and the public investment therein. It is further found that certain activities and uses of land in the immediate vicinity of airports as enumerated in §333.03(2) are not compatible with normal airport operations, and may, if not regulated, also endanger the lives of the participants, adversely affect their health, or otherwise limit the accomplishment of normal activities. Accordingly, it is hereby declared: (a) That the creation or establishment of an airport hazard and the incompatible use of land in airport vicinities are public nuisances and injure the community served by the airport in question; (b) That it is therefore necessary in the interest of the public health, public safety, and general welfare that the creation or establishment of airport hazards and incompatible land uses be prevented; and (c) That this should be accomplished, to the extent legally possible, by the exercise of the police power, without compensation. (2) It is further declared that the limitation of land uses incompatible with normal airport operations, the prevention of the creation or establishment of airport hazards, and the elimination, removal, alteration, mitigation, or marking and lighting of existing airport hazards are public purposes for which political subdivisions may raise and expend public funds and acquire land or property interests therein, or air rights thereover.

Michigan: Statutory language from the Airport Zoning Act, Act 23 of 1950 (Ex. Sess.) follows: An Act to empower and direct the Michigan aeronautics commission to adopt airport approach plans for publicly owned airports within this state; to empower the Michigan aeronautics commission, municipalities, and other political subdivisions to promulgate, adopt, establish, administer, and enforce airport zoning regulations limiting the height of structures and objects of natural growth, and otherwise regulating the use of property in the vicinity of publicly owned

[72] Aeronautics Law, Public Utilities Code, Division 9--Part 1—State Aeronautics Act, Chapter 4—Airports and Air Navigation Facilities Article 3.5 Airport Land Use Commission.

airports, and to acquire, by purchase, grant, condemnation, or otherwise, air rights and other interests in land; to provide for the establishment of zoning commissions, administrative agencies, and boards of appeals to administer the provisions of this act, and to provide for their organization and procedure and appeals therefrom; and to provide penalties and remedies for violations of this act or ordinances or regulations made under the authority herein conferred; to provide for reciprocity with adjoining states maintaining and operating airports; and to repeal any inconsistent act or parts of acts.

Minnesota: (Quote from *Airport Compatibility Handbook*, pg. 3). The State of Minnesota has protective legislation to prevent incompatible development around airports. Since 1943, airports in Minnesota have been required by state statute to enact safety zoning.5 In 1973, zoning was made a condition for receiving federal and state funding. Additionally, the Office of Aeronautics at the Minnesota State Department of Transportation publishes a model zoning ordinance to assist local governments and provides related technical assistance to the 136 publicly owned airports in the state. However, there is growing concern in the aviation industry that the state airport system will be slowly compromised and safety hazards magnified unless action is taken now to prevent additional incompatible development. This manual details the tools and strategies that local governments can use to turn the tide and protect these invaluable community assets (See Minnesota Statutes, Chapter 360).

Minnesota/Department of Transportation/Aeronautics is responsible for conducting and coordinating statewide and regional strategic, system, and master planning for aviation; provide aviation involvement in intermodal planning activities; maintain an aviation data base, and to distribute information to internal and external audiences; assist the owners of publicly-owned airports in developing appropriate airport improvements and ensure Minnesota airport zoning ordinances meet minimum safety standards; develop forecasts of aviation activity and revenue needs; assist and support Minnesota communities with scheduled air service matters; assist airport owners in meeting federal and state environmental requirements, monitor aviation issues and legislation; and to coordinate special programs and policy initiatives.

Oregon: (Quote from *Airport Land Use Compatibility Guidebook):* The Oregon Department of Aviation (ODA), now a separate entity from the Oregon Department of Transportation, has addressed the need for an updated document. This most recent update follows in the tradition of the previous updates with the same purpose and audience, as well as the underlying need for revision. The 2002 update reflects one of the biggest changes to state regulations related to airports - the development of the Airport Planning Rule (APR), Chapter 660, Division 13 of the

Department of Land Conservation and Development. The APR provides many useful regulations to control development both on and off airport property. In addition, other state and federal regulations are incorporated to illustrate the intergovernmental responsibilities for land use planning. Land use strategies are also outlined to provide a comprehensive document for use in preserving the current capacity of airports, as well as their capability for future growth to serve the growing state population.

Washington: following is a quote from the Washington State Department of Transportation publication entitled *Airports and Compatible Land Use,* page 7 *et seq.:* In addition to these statements contained in the *Washington State Aviation Policy*, the state's interest in various modes of transportation is defined in RCW 47.06. This statute requires the Department of Transportation to develop a balanced and multimodal transportation plan. This plan is to include transportation facilities and services provided directly by the state, including highways, state ferries, and state-owned airports. It also must address state-interest modes of transportation. These state-interest modes are defined to include public transportation, freight rail, intercity passenger rail, marine ports and navigation, non-motorized transportation, and aviation. The plan must define the extent of state interest in these modes, and propose investments and advocacy actions needed to meet this state interest.

Further, RCW 47.68 outlines the authority of the Aviation Division and presents its mandate. In 1947, the state created a new agency, the Aeronautics Commission (now the WSDOT Aviation Division). The agency's task is to perform state functions in air transportation, in cooperation with federal authorities and local governments in the state. The major functions of the agency have been to: advocate for the development of an adequate system of public use airports in Washington State, implemented through local government; promote aviation safety, airmark towns and cities; provide tourist information; activate and manage air search and rescue for civilian aircraft; promote aviation legislation; and promote aviation in general, through close liaison with aviation clubs and associations. The authorizing language in RCW 47.68 drives the Aviation Division's role in aviation advocacy through the Airports Program (Local Airport Aid), State Airports, Aviation Planning, Air Search and Rescue Management, Pilot and Aircraft Registration, Aviation Education, State Aircraft Fleet Management, Aviation Outreach, and Administration.

RCW 36.70A.510 General Aviation Airports — Siting of Incompatible Uses. Through Washington State *Senate Bill 6422*, which amended the Washington State Growth Management Act and associated provisions in the Act, the state recognized the inherent social and economic benefits of aviation. The law requires every city and town, code city, charter city and county having a general aviation airport in its jurisdiction to discourage the siting of land uses that are

incompatible with the airport. The policy to protect airport facilities must be implemented in the comprehensive plan and development regulations as they are amended in the normal course of land use proceedings. Formal consultation with the aviation community is required and all plans must be filed with the Washington State Department of Transportation Aviation Division. Further, the law requires the establishment of an airport land use compatibility technical assistance program, by the Aviation Division, and available to local jurisdictions.

Wisconsin: Trans 55.06 WISCONSIN ADMINISTRATIVE CODE 42–2

(4) ORDINANCES. (a) A public airport owner shall adopt the following ordinances within 6 months after receipt of a sample ordinance from the secretary: 1. A height limitation zoning ordinance adequately restricting the height of objects near the airport in accordance with §114.136, Stats. 2. An ordinance to provide for the control of vehicular and pedestrian traffic on the surface of the airport. (b) A private airport owner shall: 1. Adopt and enforce a rule to provide for the control of vehicular and pedestrian traffic on the surface of the airport. 2. Make application for and pursue the passage and acceptance of a compatible ordinance using §114.136, Stats., as the primary guide.

(5) SURVEYS. An airport owner shall cooperate with the secretary in surveys which may be conducted on topics that include the following: (a) Airport rates and charges. (b) Airport operations. (c) Based aircraft.

(6) PUBLIC ACCESS. An airport owner shall provide suitable aircraft parking areas so that aircraft and passengers, scheduled and general aviation, have reasonable access to the airport facilities consistent with security requirements.

(7) LEGAL RELATIONS. An airport owner shall indemnify and hold harmless the state and all its officers, employees, and agents from and against a suit, cause, action, claims costs, and expenses, including legal fees, and the state's attorneys fees, in connection with bodily injury to a person or damage to property caused directly or indirectly by failure, malfunction, lack of maintenance, or construction of the airport and its facilities.

Appendix C Excerpts from California Land-Use Planning Handbook, Chapter 9 (January 2002)

Compared to noise compatibility issues, the need to address the safety aspects of interactions between airports and surrounding land uses is largely a forgotten compatibility planning topic. Perhaps this is because aircraft noise is experienced daily, but off-airport accidents are rare. Except for regulations on airspace obstructions and clearance requirements in the immediate vicinity of runways, there are few formal federal or state standards addressing safety compatibility concerns. This *Handbook* provides the most comprehensive guidance known to be available.

With respect to the land use safety compatibility guidance from the Federal Aviation Administration (FAA) it should be understood that FAA's authority is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace. The lack of FAA land use compatibility criteria for other portions of the airport environment is often cited by land use development proponents as an argument that further controls on land use are unnecessary. What must be remembered, however, is that the FAA criteria apply only to property controlled by the airport proprietor. **The FAA has no authority over off-airport land uses—its role is with regard to the safety of aircraft operations.** The FAA does have some leverage for promoting compatible land use planning through the mechanism of grant assurances which airport proprietors must sign in order to obtain federal funding for airport improvements. State and local agencies are free to set more stringent land use compatibility policies as they see fit. There are provisions for the FAA to fund approach areas as part of an airport construction or upgrade plan.

The emphasis in FAA safety criteria is upon the runway surface and the areas immediately adjoining it. Standards are established which specify ground surface gradients for areas adjacent to runways and the acceptable location and height of aeronautical equipment placed nearby. These areas normally are encompassed within airport boundaries. Runway protection zones (RPZs) are trapezoidal-shaped areas located at ground level beyond each end of a runway. The dimensions of RPZs vary depending upon: the type of landing approach available at the airport (visual, non precision, or precision); and characteristics of the critical aircraft operating at the airport (weight and approach speed). Ideally, each runway protection zone should be entirely clear of all objects.

The FAA's *Airport Design* advisory circular strongly recommends that airports own this property outright or, when this is impractical, to obtain easements sufficient to control the land use. Acquisition of this property is eligible for FAA grants (except at some small airports which are not part of the national airport system). Even on portions of the RPZs not under airport control, the FAA recommends that churches, schools, hospitals, office buildings,

shopping centers, and other places of public assembly, as well as fuel storage facilities, be prohibited. Automobile parking is considered acceptable only on the outer edges of RPZs (outside the extended object free area).

Beyond the runway protection zones, the FAA has no specific safety-related land use guidance other than airspace protection. However, additional property can also potentially be acquired with federal grants if necessary to restrict the use of the land to activities and purposes compatible with normal airport operations. In general, this property must be situated in the approach zones within a distance of 5,000 feet from the runway primary surface. **Exposure to high levels of noise can also be the basis for FAA funding of property acquisition.**

Part 77 of the Federal Aviation Regulations (FAR), *Objects Affecting Navigable Airspace*, establishes standards for determining obstructions to navigable airspace and the effects of such obstructions on the safe and efficient use of that airspace. The regulations require that the FAA be notified of proposed construction or alteration of objects—whether permanent, temporary, or of natural growth—if those objects would be of a height which exceeds the FAR Part 77 criteria. The height limits are defined in terms of imaginary surfaces in the airspace extending about two to three miles around airport runways and approximately 9.5 miles from the ends of runways having a precision instrument approach.

When notified of a proposed construction, the FAA conducts an aeronautical study to determine whether the object would constitute an airspace hazard. Simply because an object would exceed an airport's airspace surfaces established in accordance with FAR Part 77 criteria does not mean that the object would be considered a hazard. Various factors, including the extent to which an object is shielded by nearby taller objects, are taken into account. The FAA may recommend marking and lighting of obstructions. The FAA has no authority to remove or to prevent construction or growth of objects deemed to be obstructions. Local governments having jurisdiction over land use are typically responsible for establishing height limitation ordinances which prevent new, and enable removal of existing, obstructions to the FAR Part 77 surfaces. Federal action in response to new airspace obstructions is primarily limited to three possibilities: For airports with instrument approaches, an obstruction could necessitate modification to one or more of the approach procedures (particularly greater visibility and/or cloud ceiling minimums) or even require elimination of an approach procedure. n Airfield changes such as displacement of a landing threshold could be required (especially at airports certificated for commercial air carrier service).

The owner of an airport could be found in noncompliance with the conditions agreed to upon receipt of airport development or property acquisition grant funds and could become

ineligible for future grants (or, in extreme cases, be required to repay part of a previous grant). Additional guidelines regarding protection of airport airspace are set forth in other FAA documents. In general, these criteria specify that no use of land or water anywhere within the boundaries encompassed by FAR Part 77 should be allowed if it could endanger or interfere with the landing, take off, or maneuvering of an aircraft at an airport (FAA–1987). Specific characteristics to be avoided include: n Creation of electrical interference with navigational signals or radio communication between the airport and aircraft; n Lighting which is difficult to distinguish from airport lighting; n Glare in the eyes of pilots using the airport;

Smoke or other impairments to visibility in the airport vicinity; and n Uses which attract birds and create bird strike hazards. Bird strike and other forms of wildlife hazard have become a major concern internationally. In the United States and Canada, reduction and management of wildlife hazards are of particular concern. With regard to bird strike hazards, the FAA specifically considers waste disposal sites (sanitary landfills) to be incompatible land uses if located within 10,000 feet of a runway used by turbine-powered aircraft or 5,000 feet of other runways. Any waste disposal site located within five statute miles of an airport is also deemed incompatible if it results in a hazardous movement of birds across a runway or aircraft approach and departure paths. Caution should be exercised with regard to certain other land uses—including golf courses and some agricultural

Federal statutes (49 U.S.C. §44718(d)) now prohibit new "municipal solid waste landfills" within six miles of airports that (1) receive FAA grants and (2) primarily serve general aviation aircraft and scheduled air carrier operations using aircraft with less than 60 passenger seats. A landfill can only be built within six miles of this class of airports if the FAA concludes that it would have no adverse effect on aviation safety (FAA–2000b).

Most of the discussion in this chapter deals with the development of safety compatibility zones and associated criteria aimed at limiting the consequences which aircraft accidents can have upon people and property near airports. The need for establishment of safety compatibility zones does not imply that airports are unsafe. Neither does it suggest that existing land uses near airports are necessarily unsafe. Indeed, aircraft accidents in the vicinity of airports are very infrequent occurrences and, historically, very few people on the ground have been seriously or fatally injured as a result of such accidents. Safety, though, is a relative concept. More can almost always

be done to enhance safety. The important questions to be answered are: what is an acceptable level of safety; and what is the cost of attaining that level? Central to the assessment of these issues is the concept of risk. This topic is explored in a major section of this chapter. Beyond the

fundamental concept of risk, the specific issue addressed in this chapter is what restrictions should be placed on development of land uses near airports in response to the potential occurrence of aircraft accidents. It is not sufficient to rely solely upon Federal Aviation Administration guidance for this purpose. The focus of FAA standards is on the safe operation of aircraft, not on land use planning (the federal government has no direct authority over local land uses in any case). Also, it is misguided to argue that restrictions beyond those defined by the FAA are unnecessary given the possible consequences to people on the ground. To a significant extent, the good record with regard to harm that has come to people and property near airports can be attributed to the existence of compatible land uses near airports. As airport environs become more intensively urbanized, the likelihood of more severe accident consequences can only increase. Thus, if the utility of airports and the safety of the general public are both to be protected, decision makers will need to be more aware of and more responsive to safety-related compatibility concerns.

Safety is a factor in the interaction between airports and nearby land uses in three distinct ways: 1) Protecting people and property on the ground; 2) Minimizing injury to aircraft occupants; and. 3) n Preventing creation of hazards to flight. Each of these concerns needs to be addressed in airport land use compatibility plans.

Protecting people and property on the ground from the potential consequences of near-airport aircraft accidents is a fundamental land use compatibility planning objective. To accomplish this, some form of restrictions on land use are essential. Land use characteristics are the most important. The discussion and guidance presented in this chapter is concerned with aircraft accidents, not deliberate acts. The potential severity of an off-airport aircraft accident is highly dependent upon the nature of the land use at the accident site. For the purposes of evaluating the relative risks presented by different land uses, three characteristics are most important: Even when safety compatibility criteria are formatted in terms of a detailed list of land uses, usage intensity is generally the basic factor upon which the acceptability or unacceptability of each use is judged.

The most direct means of limiting the potential consequences of an off-airport accident is to limit the intensity of use. Intensity of use is measured in terms of the number of people which the development can attract per acre. This metric serves as a common denominator among various types of nonresidential uses. Except for certain especially risk-sensitive uses, as noted below, the degree of safety compatibility is usually considered the same for any two land uses having similar usage intensities.

Residential land uses are typically measured in dwelling units per acre rather than people per acre. This is principally a practical measure to simplify implementation. However, residential uses are also normally afforded a comparatively higher degree of protection than

nonresidential ones. That is, for a given location, higher occupancy levels are permitted for nonresidential uses than for residential uses. Sensitive Uses—Certain other types of land uses are also commonly regarded as requiring special protection from hazards such as potential aircraft accidents. These uses fall into two categories:

1) Low Effective Mobility Occupancies: Society normally seeks a high degree of protection for certain groups of people, especially children and the infirm. A common element among these groups is inability—either because of inexperience or physical limitations—to move out of harm's way. Among the types of land uses which are regarded as particularly risk sensitive are elementary and secondary schools, day care centers, hospitals, and nursing homes. 2) Hazardous Materials: Functions, such as aboveground storage of large quantities of flammable materials or other hazardous substances which could substantially contribute to the severity of an aircraft accident if they were to be involved in one. In accidents involving an aircraft that is out of control as it descends, the character of the land uses below are not likely to have a significant effect on the survivability of the crash. However...some aircraft mishaps involve situations in which the aircraft is descending, often without power, but otherwise under control...Even when safety compatibility criteria are formatted in terms of a detailed list of land uses, usage intensity is generally the basic factor upon which the acceptability or unacceptability of each use is judged.

The pilot of a disabled aircraft will, if possible, direct the aircraft toward some form of open land when an off-airport emergency landing is inevitable. This propensity forms the premise behind the primary form of land use control intended to minimize the severity of injury to aircraft occupants in the event of an off-airport emergency landing. Specifically, some amount of useful open land should be preserved in the vicinity of airports. This concept is largely limited to airports that serve small aircraft.

Unlike the preceding land use characteristics which can only affect the consequences of an aircraft accident (for better or worse), hazards to flight can be the cause of an accident. Hazards to flight fall into three basic categories: n Obstructions to the airspace required for flight to, from, and around an airport; Wildlife hazards; and other forms of interference with safe flight, navigation, or communication.

Appendix D

AVIGATION EASEMENT (10/9/06)

(For Properties Inside and Outside the Runway Protection Zone)

THIS INDENTURE is made this _____ day of _____, 20 _____ between _____whose address is ____, _____, Michigan ("GRANTOR"), and _____,

whose address is _____, _____, Michigan ("GRANTEE").

WHEREAS, the GRANTEE is the owner and operator of the _____ Airport ("AIRPORT"), situated in _____ County, Michigan, and in close proximity to the GRANTOR's property, as described below, and the GRANTEE desires to obtain and preserve for the use and benefit of the public a right of free and unobstructed flight for aircraft landing upon, taking off from, or maneuvering about the AIRPORT.

NOW THEREFORE, for and in consideration of the sum of $_____ dollars ($_____) and other good and valuable consideration, the receipt and sufficiency of which is acknowledged, the GRANTOR grants, bargains, sells and conveys to the GRANTEE, its successors and assigns, for the benefit of the general public at large, an easement and right-of-way for the free, unobstructed passage of aircraft, by whomsoever owned or operated, in and through the air space over and across those parts of the GRANTOR's land containing _____ acres of land within the boundary described as follows:

(See Attached Property Descriptions – separate inside RPZ and outside RPZ descriptions)

provided, however, that the air space in which that easement and right-of-way is granted shall be that which lies above the heights described and depicted on the attached **Exhibit X-1 (in RPZ) and X-2 (out RPZ)**, which is incorporated by reference.

The GRANTEE and its successors and assigns are to have and to hold that easement and all rights appertaining to it until the AIRPORT is abandoned and no longer used for airport purposes.

In furtherance of this easement and right-of-way, the GRANTOR, for the consideration recited above, grants and conveys to the GRANTEE, its successors and assigns, **for all properties inside and outside of any Runway Protection Zones**:

(a) a continuing right to keep the air space above the heights described and depicted on Exhibit X clear and free from any and all fences, crops, trees, poles, buildings and other obstructions of any kind or nature which now extend, or which may at any time in the future extend, above those heights;

(b) a continuing right, at the GRANTEE's option, to remove to ground level any or all natural growths which extend on the above property above the heights described and depicted on the attached Exhibit X to extent such action is needed. The GRANTEE may determine such action is needed because the GRANTEE in the GRANTEE'S sole discretion finds (i) trimming is unsafe or not reasonably possible, (ii) the species of the tree or other natural growth is too fast growing, or (iii) trimming would have a reasonable probability of killing the tree or other natural growth or causing it to be too susceptible to disease;

(c) The GRANTEE shall have the right of ingress to, egress from, and passage over the GRANTOR's land described above for the purpose of removing obstructions. Except in cases of imminent danger to health, safety or welfare, the GRANTEE shall provide the property owner at least 20 days advance written notice of its use this right.

In addition, for the consideration recited above, the GRANTOR covenants, both on the GRANTOR's own behalf and on behalf of the GRANTOR's heirs, executors, administrators and assigns, for and during the life of this easement, as follows:

(1) The GRANTOR shall not construct nor permit nor suffer to remain upon the GRANTOR's land any present or future obstruction that extends above the heights described and depicted on the attached Exhibit X drawings. Provided, however, that any

removal or trimming of trees or other natural growth on the GRANTOR's land as described above which extends above the heights set forth in the Exhibit X drawings shall be conducted by the GRANTEE or the GRANTEE's agents and at no cost to the GRANTOR. This easement prohibits any ground structures, natural growth, storage of equipment, vehicles or aircraft, flammable material storage facilities, or activities which encourage the congregation of people or create an incompatible use in any Runway Protection Zones as referenced in paragraph (5) of this easement.

(2) The GRANTOR shall not use nor permit nor suffer use of the GRANTOR's land described above in such a manner as to create electrical interference with radio communication between the installation upon the AIRPORT and aircraft or as to make it difficult for fliers to distinguish between airport lights and others, or as to result in glare in the eyes of fliers using the AIRPORT, or as to impair visibility in the vicinity of the AIRPORT, or as otherwise to endanger the landing, taking-off or maneuvering of aircraft.

____ Initial

(3) There is reserved to the GRANTEE, its successors and assigns for the use and the right to cause in said air space such noise, vibration, fumes, dust and fuel particulates, as may be inherent in the operation of aircraft, now known or hereafter used for navigation of or flight in air, using said air space for landing at, taking off from, or operating on the AIRPORT;

(4) The GRANTOR shall not use nor permit, nor suffer use of the GRANTOR's land described above for land fills, open dumps, waste disposal sites, etc., storm water retention ponds, creation of new wetlands, crops that would attract or sustain hazard bird movements, or any use that would be incompatible with the maintenance and operation of the AIRPORT.

(5) **FOR PROPERTIES THAT LIE INSIDE THE RUNWAY PROTECTION ZONE ONLY AS DESCRIBED AND IDENTIFIED ON THE ATTACHED EXHIBIT X-1**: The GRANTOR shall not use nor permit construction on the GRANTOR's land described above, any structure that is a hazard to the general public or air navigation including the construction of new residences, fuel handling and storage facilities, smoke-generating activities, or places of public assembly, such as churches, schools, office buildings, shopping centers, and stadiums.

These covenants shall run with the GRANTOR's land described above, for the benefit of the GRANTEE and its successors and assigns in the ownership and operation of the AIRPORT.

SIGNED THIS _____ DAY OF _____, 2006:

PRINTED NAME **SIGNATURE**

_____ _____ (L.S.)

STATE OF MICHIGAN }

COUNTY OF _____ **} ss.**

Appendix E
Excerpt from the Minnesota Department of Transportation Airport Compatibility Manual

Patzau v. New Jersey Dep't of Transp., 271 N.J. Super. 294 (App. Div. 1994), which addressed the constitutionality of an air safety and zoning act that, among other things, required the adoption of building height restrictions within airport safety zones. The court found that "the state may impose very substantial zoning and other restrictions on the use of property in order to advance legitimate public interests without being obligated to provide compensation."

Aeronautics Comm'n v. State ex. rel. Emmis Broad. Corp., 440 N.E.2d 700, (Ind. App. 1982), the court found that a state "high structures act," which regulates structural height near airports for the purpose of protect[ing] the safety and welfare of persons and property in the air and on the ground by ensuring the navigable airspace overlying the state is maintained in an unobstructed condition," is valid "because Congress has evidenced a purpose to leave legal enforcement of regulations pertaining to high structures and air safety to state and local governments."

La Salle Nat'l Bank v. County of Cook, 34 III. App. 3d 264 (1975), in which the court determined that the enactment of an airport zoning ordinance that imposed height restrictions on buildings near certain airports, including a naval air station, for the purpose of preventing aviation hazards did not unconstitutionally deprive a landowner of its property without just compensation.

Cheyenne Airport Board v. Rogers, 707 P.2d 717 (Wy. 1985), appeal dismissed, 476 U.S. 1110, (1986), where the Wyoming Supreme Court applied federal and state law definitions of airspace property right to reject a takings claim.

Kimberlin v. City of Topeka, 710 P.2d 682 (1985), the court held that a zoning ordinance that establishes height and use restrictions to promote airport safety is a proper exercise of police power and does not result in an unconstitutional taking without just compensation.

Fitzgerald v. City of Iowa City, 492 N.W.2d 659 (Iowa 1992), where the court found no compensable physical invasion was present where the evidence presented by plaintiffs was devoid of any evidence showing either the frequency or approximate altitudes of planes flying over the plaintiffs' lands.

Vacation Village, Inc. v. Clark County, Nevada, Adversary No. 98-2313-RCJ (December 30, 2004), where no takings was present as to 1.25 acres of plaintiff's land where the "parcel as a whole" was not diminished in value, but where other property affected by overflights was deemed a taking and substantial compensation was ordered. [See other discussion about this case in this Report].

Schmidt v. City of Kenosha, 214 Wis. 2d 527 (Wis. App. 1997), the court concluded that an airport zoning ordinance that prohibits construction along aerial approaches to an airport "is not arbitrary capricious, but is reasonably related to a legitimate public purpose."

Northwest Props. v. Outagamie County, 223 Wis. 2d 483 (Wis. App. 1998), the court determined that a municipality had authority to enact a zoning ordinance that protects the aerial approaches to an airport by regulating, restricting and determining the use, location, height, number of stories and size of buildings and structures and objects of natural growth in the [airport's] vicinity.

Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470 (1987), where the United States Supreme Court rejected the notion that a public nuisance must be an inherently noxious or unreasonable land use and found that what would otherwise have been a lawful coal mine posed a threat to the common welfare akin to a public nuisance because of the subsidence risks it created.

Welch v. Swasey, 214 U.S. 91 (1909), where the court has long recognized that police power enactments limiting vertical, lateral, and subjacent property development do not effect compensable takings.

Penn Central Trans. Co. v. City of New York, 438 U.S. 104 (1978), where the situation in which a landowner is restrained in his or her use of one spatial area of the property—his airspace, side yards, or subsoil—as merely one species of regulation and no actual property in these cases have been appropriated by the government. [See other discussion about this case in this Report].

Richmond, Fredericksburg & Potomac R.R. Co. v. Metropolitan Washington Airports Auth., 251 Va. 201 (1996), where 23,000 annual overflights were insufficient to establish a taking because there was no evidence of the types of airplanes using the runway, the height at which they passed over the property, or the frequency of landings.

Ackerman v. Port of Seattle, 55 Wash. 2d 400 (1960), finding a taking based on continuing and frequent low overflights.

Village of Willoughby Hills v. Corrigan, 278 N.E.2d 658 (Ohio 1972), where the court found that unlike a surface invasion of land, an invasion of airspace above the land does not constitute a per se taking.

Harrell's Candy Kitchen v. Sarasota-Manatee Air. A., 111 So. 2d 439 (Fla. 1959), where the court upheld the validity of airport height restrictions without payment of just compensation. The court determined that the police power authority was necessary where the restrictions promoted the welfare of the state.

Austin v. Travis County Landfill Co., 73 S.W.3d 234 (Tex. 2002), the Texas Supreme Court found evidence insufficient to support a compensable taking where flights over landfill did not reduce market value where the Texas Supreme Court found that plaintiff failed to establish a claim of compensable taking by aircraft. The plaintiff did not provide evidence sufficient to support the claim that flight from the city airport over the landfill directly impacted the property's surface and caused the value to decline. Even though the landfill owner was exposed to an influx of risks and costs, the evidence was not sufficient to show that civilian overflight effects caused or contributed to the land's decline in market value.

ACKNOWLEDGMENTS

This study was performed under the overall guidance of the ACRP Project Committee 11-01. The Committee was chaired by BARRY MOLAR, Unison Consulting, Inc., Wheaton, Maryland. Members are PATRICIA A. HAHN, Patricia A. Hahn Consulting, Washington, DC; TIMOTHY KARASKIEWICZ, General Mitchell International Airport, Milwaukee, Wisconsin; ROBERT S. MAERZ, San Francisco International Airport, San Francisco, California; CARLENE MCINTYRE, Port Authority of New York & New Jersey, New York, New York; DONALD MUETING, Minnesota DOT, St. Paul, Minnesota; E. LEE THOMSON, Clark County, Las Vegas, Nevada; and KATHLEEN YODICE, Yodice Associates, Aircraft Owners and Pilots Association, Washington, DC.

DAPHNE A. FULLER provides liaison with the Federal Aviation Administration, FRANK SANMARTIN provides liaison with the Federal Aviation Administration, MONICA HARGROVE KEMP provides liaison with the Airports Council International-North America, and GWEN CHISHOLM SMITH represents the ACRP staff.

Transportation Research Board
500 Fifth Street, NW
Washington, DC 20001