

the jurisdictions is likely to have a different base zoning ordinance with the zoning districts having different applicability for implementing the compatibility plan. In many states, counties do not have zoning authority, hence land use control via zoning in these states stops at the municipal boundary.

Zoning is not permanent. In any jurisdiction, the currently sitting legislative body can change zoning; it is not bound by a prior body's zoning actions. Consequently, zoning for compatibility is subject to continual pressure for change from both urban expansion and development processes. Additionally, a community may from time to time change or update its entire zoning ordinance, requiring a complete review as to its noise compatibility implications. Zoning Board of Adjustment actions in granting variances to the zoning districts or exceptions written into the zoning ordinance can also weaken zoning as a compatibility measure.

Easements

Easements may be used as an effective and permanent form of land use control. In many instances, they may be better for airport noise compatibility purposes than zoning. Easements are permanent, with title held by the purchaser until sold or released, and work equally well inside or outside zoning jurisdictions. They are directly enforceable by the holder through civil courts and may often be acquired for a fraction of the total value of the land. Also of value is that the land is left free for full development with noise compatible uses.

In the context of compatible land use implementation, easements are of two general types: (1) those which acquire the right to make aviation noise over the easement area, and (2) those which acquire from the land owner(s) all rights for development of noise sensitive uses on the covered property. For maximum

effectiveness, easements should restrict the development of land to uses that are compatible with aircraft noise levels (on ground and in the air) and to create noise, but should also include the rights to use of the airspace for flight, and the right to control aircraft hazards of height, emissions, and wildlife attractors. An easement which simply acquires the right to make noise over the property without influencing the development on the land has fewer positive advantages. It does nothing to change the noise sensitive character of the land or to reduce noise for people on the property. However, it does legally protect the airport operator from litigation, as well as warn potential buyers that the property is subject to aviation noise.

Although easements may be purchased out right, or be acquired in exchange for soundproofing of properties, they may often be acquired for free or nearly free when the land is being subdivided or undergoing other development.

Transfer of Development Rights (TDR)

Under this strategy, some of a property's development rights are transferred to another property that is remote from the airport noise where those rights may then be used to intensify the amount of allowable development. Landowners may be compensated for the transferred rights by their sale at the new locations, or the rights may be purchased by the airport. Depending upon the market conditions and/or legal requirements, the airport could either hold or resell the rights. Use of TDR's must be fully coordinated with the community's planning and zoning office. It may be necessary for zoning ordinances to be amended in order to permit TDR's. Also, both ends of a TRD transaction must usually be contained within a single jurisdiction.

Building Codes

Adjustment to minimum standards for structural construction techniques and materials can significantly reduce the transfer of outdoor noise to the interior of buildings. Building codes are essentially a legal means of requiring adequate sound attenuation to be incorporated into new construction – a remedial sound insulation program would be needed to remedy existing buildings.

• Noise Insulation Programs

Structural noise insulation can lower the indoor noise levels for residential uses that cannot reasonably be removed from noise impacted areas. Noise insulation is particularly effective for commercial buildings, including offices and hotels. Sound insulation programs should be preceded by structural and acoustical analyses of all homes and other buildings earmarked for noise insulation—if other improvements are needed in order to comply with local building codes, the costs of such improvements are not allowable under the grant program. The costs of noise insulation can range from an equivalent of \$2,000 to over \$50,000 per dwelling depending upon several variables, such as degree of insulation required (from insulating the attic only to insulating all exterior walls and ceilings, and upgrading windows and doors), size and condition of the building, and the level of the exterior noise.

For sound treatment to be effective, it is necessary to have a closed-window condition. This may be unacceptable to some people, and is certainly undesirable in hot weather conditions unless alternative means of ventilation and/or air conditioning are provided. The major shortcoming of sound insulation is that it does nothing to mitigate outdoor noise on the property and severely limits indoor/outdoor living.

• Land Acquisition and Relocation

This strategy involves the acquisition of homes or other uses through purchase by the airport operator (or planning authority or others) and their relocation. Acquisition and relocation assure the airport of long-term noise compatibility. As a strategy, this can also have the advantage of being within the direct control of the airport or planning authority, and not require additional action by another political entity for implementation. Land so acquired may be cleared, sold with appropriate easements retained, and redeveloped with compatible uses. However, this is a costly and socially disruptive strategy and is not a practical solution to the total noise problem.

• Transaction Assistance

Transaction assistance involves some level of financial assistance and possibly also procedural assistance by an airport operator for a homeowner who is trying to sell a noise-impacted property. It may involve only paying realtor's fees, or at the extreme end, an airport operator may actually become the buyer of last resort when there is no other market for the property. If the property is resold, appropriate sound treatment should be added and a noise easement retained.

• Real Estate Disclosure

Real estate disclosures are common and routine in property sales, but including aviation noise in the disclosure is a relatively new but growing procedure. Several states now require such disclosures, and state real estate boards also require them. The current property owners and realtors often oppose these disclosures since it can make the property more difficult to sell. However, it does not reduce the noise impact on the property. Its primary advantage is that the prospective buyer has now been put on notice as to the noise

(B) 45 db(A) Ldn: The symbol for the required level of noise attenuation in residential structures constructed within the area between airport noise contour 60 and airport noise contour 65, expressing a required yearly interior day-night average sound level of 45 decibels or less.]