Land Use Controls and Noise Mitigation

- **Comprehensive Planning**

Comprehensive planning takes into account existing development and coordinates future development to be compatible with various community goals. Land use planning and control authority rest primarily with local governmental bodies, which may be obligated or advised to take into account aviation noise.

A well-prepared comprehensive plan which is effectively used to guide local land use decisions and developmental controls (e.g., zoning, capital improvements, subdivision regulations, and environmental review) is among the most powerful and affordable of all compatibility strategies. This is particularly true in areas that are still developing, but it can also be highly effective to guide urban renewal or redevelopment. Its success depends upon its appropriate implementation through various developmental decisions and controls.

Comprehensive planning is applied in the numerous countries around the world in addition to the United States.

- **Zoning**

The most common and useful land use control is zoning. Zoning is an exercise of the police powers of state and local government, which designates the uses permitted on each parcel of land. It normally consists of a zoning ordinance which delineates the various use districts and includes a zoning map based upon the community's comprehensive plan (the airport land use compatibility is an integral part of that comprehensive plan). The primary advantage of zoning is that it can promote compatibility while leaving the land in private ownership, on the tax rolls, and economically productive. At the same time, zoning is subject to change and must be continually monitored if it is to remain a viable compatibility tool.

Zoning must be applied fairly and be based upon a comprehensive plan. This plan must consider the total needs of the community along with the specific needs of the airport. To zone a parcel of land for industrial or warehouse usage, for example, is not sufficient. Such an action could be considered "arbitrary, capricious, or unreasonable" and thus vulnerable in the event of judicial review. The plan must clearly demonstrate that there is a reasonable present or future need for such usage. Zoning can and should be used constructively to increase the value and productivity of lands within the noise impact area.

Zoning has a number of limitations, which must be considered when using it as a compatibility tool. Zoning is usually not retroactive. Changing zoning primarily for the purpose of prohibiting a use which is already in place is normally not possible. However, if such zoning is enacted, the use must be allowed to remain as a "nonconforming" use until such time as the use changes voluntarily to a conforming use or until the owner has had ample opportunity to recover his investment. Additionally, zoning is jurisdiction limited. Airport noise impacts quite often span more than one zoning jurisdiction. This requires coordination of the zoning in each jurisdiction. Zoning which implements a compatibility plan will often be a composition of existing and new zoning districts within each of the zoning jurisdictions covered by the plan. Each of

TABLE 1—LAND USE COMPATIBILITY* WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS

Land use	Yearly day-night average sound level (L_{dn}) in decibels					
	Below 65	65–70	70–75	75–80	80–85	Over 85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings.	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
PUBLIC USE						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware and farm equipment.	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction.	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation.	Y	Y	25	30	N	N

Numbers in parentheses refer to notes.

*The designations contained in this table do not constitute a Federal determination that any use of land covered by the 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.

KEY TO TABLE 1

SLUCM=Standard Land Use Coding Manual.

Y (Yes)=Land Use and related structures compatible without restrictions.

N (No)=Land Use and related structures are not compatible and should be prohibited.

NLR=Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35=Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

NOTES FOR TABLE 1

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal level is low.

(5) Land use compatible provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.