2 LAND USE COMPATIBILITY GUIDELINES AND STANDARDS

In a Part 150 study, cumulative noise exposure estimates have two principal uses:

- To provide a quantitative basis for assessing land use compatibility with aircraft noise exposure.
- To provide a means for determining the significance of changes in noise exposure that might result from changes in airport layout, operations, or activity levels.

Both these functions require application of objective criteria. Government agencies dealing with environmental noise have devoted significant attention to this issue, and have developed noise / land use compatibility guidelines to help federal, state, and local officials with this evaluation process.

2.1 Part 150 Land Use Compatibility Guidelines

Part 150 Appendix A sets forth FAA-recommended guidelines for noise land use compatibility based on DNL. Table 2 reproduces these guidelines.

The Part 150 guidelines represent a compilation of the results of scientific research into noise-related activity interference and attitudinal response. The guidelines indicate that all uses normally are compatible with aircraft noise at exposure levels below 65 dB DNL.

As discussed in Section 2.2, California airport "noise standards" require airport proprietors to use the Community Noise Equivalent Level (CNEL) to describe cumulative noise exposure and identify noncompatible land uses. Based on the clearly established state rules and regulations, the FAA considers CNEL to be the functional equivalent of DNL, for Part 150 and other federal environmental studies conducted in California, and permits airports to apply Part 150 land-use compatibility guidelines to CNEL values without adjustment for the normally minor differences between CNEL and DNL. Consistent with that policy, the 2003 Part 150 submission for VNY to the FAA utilized the Part 150 land use compatibility table reproduced in Table 2 of this submission for all compatibility analyses, with the exception that annual noise exposure was presented in terms of CNEL, rather than DNL, for consistency with California protocols.

This submission continues the FAA-accepted approach used in the 2003 VNY NEMs submission and applies the Part 150 DNL-based land use compatibility guidelines to CNEL exposure contours, as presented in Table 2.

Table 2 Part 150 Land Use Compatibility

Source: 14 C.F.R. Part 150, Appendix A, Table 1

Land Use	Yearly Day-Night Average Sound Level, Ldn, [or Community Noise Equivalent Level, CNEL[13]], in Decibels (Key and notes on following page)					
	<65	65–70	70–75	75–80	80–85	>85
Residential Use						
Residential other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home park	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, bldg. mtls., hardware, and farm equip.	Y	Y	Y(2)	Y(3)	Y(4)	N
Retain 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	Y	Y	Y
Golf courses, riding stables, water recreation	Y	Y	25	30	N	N

[13] As discussed in the Section 2.1 introduction preceding this table.

Key Table 2	
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 2

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.

(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 of 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 of 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 noise 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.

2.2 California Airport Noise Standards

The State of California has established airport noise standards and land use planning guidelines that fall under the jurisdiction of the California Department of Transportation ("Caltrans") Division of Aeronautics and the Los Angeles County Airport Land Use Commission, as described in Sections 2.2.1 and 2.2.2, respectively.

2.2.1 Caltrans Division of Aeronautics Noise Standards

For airport noise studies, the Caltrans Division of Aeronautics has adopted noise standards that require airports to describe cumulative exposure in terms of CNEL. Those standards state, in part:[14]

> The following rules and regulations are promulgated in accordance with Article 3, Chapter 4, Part 1, Division 9, Public Utilities Code (Regulation of Airports) to provide noise standards governing the operation of aircraft and aircraft engines for all airports operating under a valid permit issued by the Department of Transportation. These standards are based upon two separate legal grounds: (1) the power of airport proprietors to impose noise ceilings and other limitations on the use of the airport, and (2) the power of the state to act to an extent not prohibited by federal law. The regulations are designed to cause the airport proprietor, aircraft operator, local governments, pilots, and the department to work cooperatively to diminish noise problems. The regulations accomplish these ends by controlling and reducing the noise impact area in communities in the vicinity of airports. [15]
>
> The level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a CNEL value of 65 dB for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep, and community reaction.[16]

The Division of Aeronautics noise standards further define land uses that are incompatible with aircraft noise as follow:[17]

- Residences, including but not limited to, detached single-family dwellings, multi-family dwellings, high-rise apartments, condominiums and mobile homes, unless:
  - An avigation easement for aircraft noise, has been acquired by the airport proprietor;
  - A dwelling unit which was in existence at the same location prior to January 1, 1989, and has adequate acoustic insulation to ensure an interior CNEL of 45 dB or less due to aircraft noise in all habitable rooms;

[14] California Code of Regulations (CCR). 1990. Title 21, Subchapter 6, Noise Standards. Register 90. No. 10, 3/10/90. California Division of Aeronautics, Department of Transportation. Sacramento, CA.

[15] Ibid., § 5000, "Preamble," p. 219.

[16] Ibid., § 5006, "Findings," p. 224.

[17] Ibid., § 5014, "Incompatible Land Uses within the Noise Impact Boundary."

  - A residence is a high rise apartment or condominium having an interior CNEL of 45 dB or less in all habitable rooms due to aircraft noise, and an air circulation or air conditioning system, as appropriate;
  - A residence exposed to an exterior CNEL less than 80 dB (75 dB if the residence has an exterior normally occupiable private habitable area) where the airport proprietor has made a genuine effort to acoustically treat the residence or acquire avigation easements for the residence involved, or both, but the property owner has refused to take part in the program; or
  - A residence which is owned by the airport proprietor;
- Public and private schools of standard construction for which an avigation easement for noise has not been acquired by the airport proprietor, or that do not have adequate acoustic performance to ensure an interior CNEL of 45 dB or less in all classrooms due to aircraft noise;
- Hospitals and convalescent homes for which an avigation easement for noise has not been acquired by the airport proprietor, or that do not have adequate acoustic performance to provide an interior CNEL of 45 dB or less due to aircraft noise in all rooms used for patient care; and
- Churches and other places of worship for which an avigation easement for noise has not been acquired by the airport proprietor or that do not have adequate acoustic performance to ensure an interior CNEL of 45 dB or less due to aircraft noise.

2.2.2 California Airport Land Use Commission Regulations

With limited exceptions, California state statutes require each county in the state to establish an Airport Land Use Commission (ALUC).[18] The law defines the purpose of the ALUC as:

> "...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."[19]

The statutes specify that the Regional Planning Commission will fill the ALUC role in Los Angeles County.[20] In practice, the commission refers to itself as the ALUC when addressing airport land use compatibility matters. The commission has published a document that defines review procedures and other implementation policies.[21] That document states that:

> [T]he fundamental purpose of ALUCs to promote land use compatibility around airports has remained unchanged. As expressed in the present statutes, this purpose is:
>
> > "...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

[18] California Public Utilities Code, Division 9, "Aviation," Part 1, "State Aeronautics Act," Chapter 4, "Airports and Air Navigation Facilities," Article 3.5, "Airport Land Use Commission," § 21670-21679.5.

[19] Ibid., § 21670(a)(2).

[20] Ibid., § 21670.2.

[21] "Los Angeles County Airport Land Use Commission Review Procedures," prepared by the Los Angeles County Department of Regional Planning, December 2004, available on line at http://planning.lacounty.gov/assets/upl/project/aluc_review-procedures.pdf

> excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."
>
> The statutes give ALUCs two principal powers by which to accomplish this objective. First, ALUCs must prepare and adopt an Airport Land Use Compatibility Plan [ALUCP]. Secondly, they must review the plans, regulations, and other actions of local agencies and airport operators for consistency with that plan.[22]

The procedures document calls out two limitations on ALUCs' powers: "Specifically, ALUCs have no authority over existing land uses (Section 21674(a)) or over the operation of airports (Section 21674(e))."[23]

The commission last revised the Los Angeles County airport land use compatibility plan (the "ALUCP") on December 1, 2004.[24] The ALUCP includes the following "policies related to noise:"

N-1 Use the Community Noise Equivalent Level (CNEL) method for measuring noise impacts near airports in determining suitability for various types of land uses.

N-2 Require sound insulation to insure a maximum interior 45 db [sic] CNEL in new residential, educational, and health-related uses in areas subject to exterior noise levels of 65 CNEL or greater.

N-3 Utilize the Table Listing Land Use Compatibility for Airport Noise Environments in evaluating projects within the planning boundaries.

N-4 Encourage local agencies to adopt procedures to ensure that prospective property owners in aircraft noise exposure areas above a current or anticipated 60 db [sic] CNEL are informed of those noise levels and of any land use restrictions associated with high noise exposure.

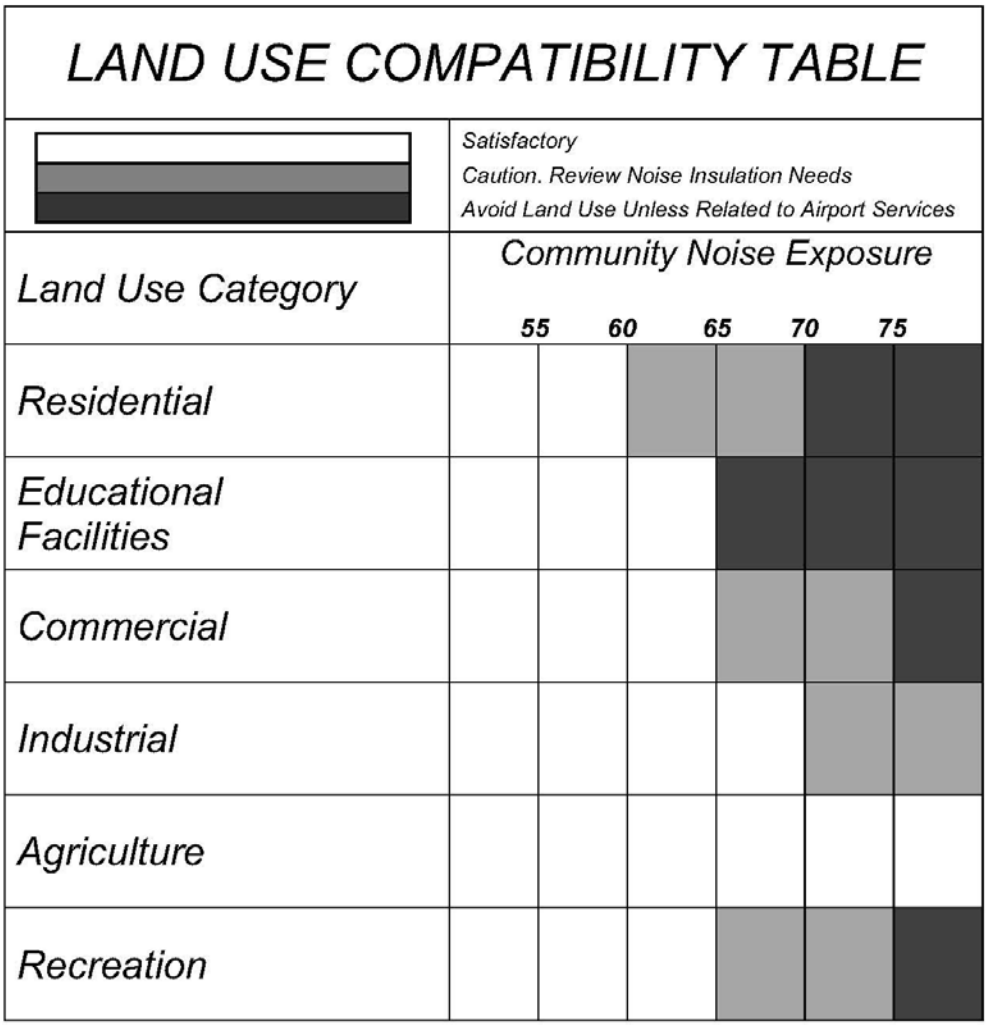
Figure 3 reproduces the land use compatibility table to which policy N-3 refers.

[22] Ibid., p. 1-2.

[23] Ibid.

[24] "Los Angeles County Airport Land Use Commission Comprehensive Land Use Plan," prepared by the Department of Regional Planning, adopted December 19, 1991, revised December 1, 2004, available on line at http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf

Figure 3 Los Angeles County Land Use Compatibility for Airport Noise Environments
Source: Los Angeles County Airport Land Use Compatibility Plan, prepared by the Los Angeles County Department of Regional Planning, Revised December 1, 2004



Note: Consider FAR Part 150 for commercial and recreational uses above the 75 CNEL

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