NEW YORK CITY NOISE CRITERIA
A HISTORICAL PERSPECTIVE

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Abstract
Noise guidelines in the City Environmental Quality Review (CEQR) Technical Manual employed in the review of Environmental Impact Statements (EIS) and Environmental Assessment Statements (EAS) will be discussed. Criteria on whether a project merits a Noise Analysis and the determination of Impact Significance will be presented. Finally, the Noise Exposure Guidelines for Use in City Environmental Impact Review will be described. The required attenuation values to achieve Acceptable Interior Noise Levels within the Marginally Acceptable, Marginally Unacceptable, and Clearly Unacceptable categories will be presented.

INTRODUCTION

New York City's early development in noise control during the five years, 1969-1974, was presented by Robert S. Bennin at the 1974 Inter-Noise Conference in Washington, D.C., September 30 – October 2, 1994 and can be found on pages 41-46 of the proceedings.

Since that time the City codified an extensive noise code which is now enforced by the Division of Environmental Compliance. The noise guidelines used in CEQR are binding but are not enforced; these guidelines stem from thousands of field measurements taken over a period of about two decades. We will discuss certain noise aspects that are addressed in the CEQR Technical Manual which is totally separate from the New York City Noise Code.

INTERIM CEPO EXTERNAL EXPOSURE STANDARDS

In 1973 when the City Environmental Protection Order (CEPO) was issued, the Division of Noise Abatement (DNA) prepared criteria for noise exposure levels from the vast

amount of literature on highway traffic noise that was available, with modification for city traffic, four categories were established: (1) Acceptable, (2) Marginally Acceptable, (3) Marginally Unacceptable, and (4) Clearly Unacceptable. The descriptors chosen were the statistical noise levels L10 and L5 which were then also employed in the many published highway traffic noise studies. These were introduced and discussed in an internal DNA report dated January 25, 1974 and authored by Sheldon I. Wilpon and Tom O'Hara. Following New York City's Executive Order 91 of 1977 establishing the City Environmental Quality Review (CEQR) process, the Division of Noise Abatement (DNA) under the initiative of Robert S. Bennin, promulgated these noise exposure criteria as the CEPO-CEQR Noise Exposure Standards in CEQR actions; at about that time it was decided that the statistical noise descriptor L5 was not necessary and was dropped.

Later in 1985, DNA was split into two parts, one came under the supervision of the Division of Environmental Compliance and its responsibility was enforcement of the New York City Noise Code, and the other part of DNA became part of what is now the Bureau of Environmental Planning and Assessment which is responsible for CEQR actions. Since a violation of the noise code is not an environmental impact but is the responsibility of Enforcement, CEQR is traditionally a totally separate action.

CEQR NOISE EXPOSURE GUIDELINES

In 1983 the final version of the CEPO-CEQR Noise Exposure Standards was adopted as the Noise Exposure Guidelines for CEQR and is given in Tables 3R-3 and 3R-4 that are found on pages 3R-19 and 3R-21 in the CEQR Technical Manual (City of New York, Mayor Rudolph W. Giuliani, October 2001).

Table 3R-3
Noise Exposure Guidelines
For Use in City Environmental Impact Review[1]

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Exposure	Marginally Acceptable General External Exposure	Airport Exposure	Marginally Unacceptable General External Exposure	Airport[3] Exposure	Clearly Unacceptable General External Exposure	Airport[3] Exposure
1. Outdoor area requiring serenity and quiet[2]		$L_{10} \leq 55$ dBA	---- $L_{dn} \leq 60$ dBA ----		---- $60 < L_{dn} \leq 65$ dBA ----		(I) $65 < L_{dn} \leq 70$ dBA; (II) $70 \leq L_{dn}$		---- $L_{dn} \leq 75$ dBA ----
2. Hospital, Nursing Home		$L_{10} \leq 55$ dBA		55 < L_{10} 65 dBA		65 < $L_{10} \leq 80$ dBA		L_{10} > 80 dBA	
3. Residence, residential hotel or motel	(7 AM-10 PM)	$L_{10} \leq 65$ dBA		65 < L_{10} 70 dBA		70 < $L_{10} \leq 80$ dBA		L_{10} > 80 dBA	
	10 PM to 7 AM	$L_{10} \leq 55$ dBA		55 < L_{10} 70 dBA		70 < $L_{10} \leq 80$ dBA		L_{10} > 80 dBA	
4. School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
5. Commercial or office		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
6. Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Notes:

(i) In addition, any new activity shall not increase the ambient noise level by 3 dB(A) or more;

[1] Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

[2] Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and old-age homes.

[3] One may use the FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

[4] External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

Source: New York City Department of Environmental Protection (adopted policy 1983).

Table 3R-4
Required Attenuation Values To Achieve Acceptable Interior Noise Levels

	Marginally Acceptable	Marginally Unacceptable		Clearly Unacceptable		
Noise level with proposed action	65<L10<70	70<L10<75	75<L10<80	80<L10<85	85<L10<90	90<L10<95
Attenuation	25 dB(A)	(I) 30 dB(A)	(II) 35 dB(A)	(I) 40 dB(A)	(II) 45 dB(A)	(III) 50 dB(A)

Source: New York City Department of Environmental Protection

SUMMARY AND CONCLUSIONS

Over a period of close to two decades and noise measurements for thousands of projects in the 5 boroughs of New York City (viz, Brooklyn, Bronx, Manhattan, Queens, and Staten Island), the rules listed in Tables 3R-3 and 3R-4 were found to be workable for both the clients and the City.

In areas near airports, the FAA, Ldn contours were used in situations where the aircraft noise is clearly the dominant source of annoyance. Aircraft noise rules are also listed in Table 3R-3.

For stationary noise sources the one-hour, A-weighted equivalent noise level, Leq(1), is employed in CEQR reviews. The 3 decibel criterion defining a noise impact still holds; however, if the ambient Leq(1) noise level is below 65 dBA during daytime hours, values between 3 to 5 decibels may be permitted depending on the situation. In any case, a 3 or more decibel increase in the ambient Leq(1) usually triggers further noise analysis and consideration of mitigation measures.