ENVIRONMENTAL PROTECTION AGENCY
REGION 10 NOISE PROGRAM
NOISE GUIDELINES FOR ENVIRONMENTAL IMPACT STATEMENTS*

The purpose of this text is to identify information which should be included in an EIS to accurately describe the environment and noise impacts attributable to the proposed project. Unless a thorough study is made which addresses all applicable noise problems, there can be no completely valid assessment of the project's effects on the environment.

The following information is recommended in order to evaluate the noise impact of the proposed action and the alternatives:

a. The existing and anticipated land uses near the project site or route that have a sensitivity to noise including the number of persons living near the site or route. (Particularly facilities in which speech or sleep occurs such as residences, motels, hotels, hospitals, schools, as well as recreational areas such as parks, campgrounds, nature preserves). What is the zoning and what does the comprehensive plan anticipate as the land use for undeveloped areas? (This information is needed in order to avoid allowing a noisy activity in an area planned for residential or other noise sensitive use).

b. The existing noise levels adjacent to the project site or route. Sites should be selected both for their proximity to the projected noise source as well as for their noise sensitivity. Levels should be given in dBA units (preferably L_{eq} and L_{dn}) as well as the noise characteristics at the identified test sites. Methodology for determing these levels and qualifications of the investigator should be indicated.

c. The noise levels anticipated in these areas emanating from a completed project. Levels in dBA should be documented for the same test

sites at which existing levels were measured. (Peak noise levels should be determined because of their importance for sleep interference). Methodology (noise prediction model) for determing these levels should be indicated, as well as experimental verification of the accuracy of the noise prediction model.

d. The information used to determine the impact of the predicted noise levels. This includes, but is not limited to, the following criteria:

(1) What increase is considered tolerable?

(2) What levels are considered reasonable for various uses?

(3) Upon what basis is this information established (i.e., the Levels Document, sleep, speech and/or task interference)? The reference for the selected information should be cited.

(4) State and municipal standards or ordinances which apply should be cited.

Tabular summaries which present the numbers of residences and other noise sensitive areas which will realize changes in their present levels should be compiled. These should describe quantitatively how many will be receiving levels in excess of L_{10} 70 dBA, and how many will experience increases over the present ambient of 0-5 dBA (slight impact), 5-10 dBA (significant impact) and over 10 dBA (very serious impact).

e. What noise abatement means will be utilized to reduce noise from the completed project and noise generated during construction. A description of the levels of expected attenuation should be included. Abatement requirements will vary from project to project, but should consider at least the following measures:

(1) acoustic barriers, berms and fences

(2) retention of trees and other flora

(3) application of the newest quieting technology and acoustic design

and during construction:

(1) the use and maintenance of properly operating mufflers and quieting devices

(2) the use of the quietest available machinery and equipment

(3) the use of electric equipment in preference to gas, diesel or pneumatic machinery

(4) locating construction equipment as far from nearby noise sensitive properties as possible

(5) shutting off idling equipment

(6) limitation of construction hours to coincide with the normal workday period, e.g. 8:00am to 6:00pm

(7) scheduling the noisiest operations near the middle of the day, and notifying nearby residents whenever extremely noisy work will be occurring.

(8) the use of permanent or portable acoustic barriers around point noise sources.

The effectiveness of abatement measures should be described and demonstrated by the use of accepted noise prediction techniques. Plans to monitor noise during construction and at the completed project should be described.

f. <u>What facilities will not be protected by the above abatement measures and what impact might this lack of protection have</u>?

(1) Has consideration been given to procuring the

additional land as a buffer zone or compensating for infringment of the use of the property?

(2) A cost benefit study of the trade off between noise reduction and land costs should be made where appropriate.

The EPA Levels Document

In March 1974, EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels Document). Since the levels identified in this document are based soley upon health and welfare considerations, care was taken to use the words "identified levels" and avoid such words as "goals", "standards", or "recommended levels". Nevertheless, they have been frequently misinterpreted by others when referenced by EPA personnel in the conduct of their review of other agency Environmental Impact Statements.

For residences with outside space, an outside environmental noise level of Ldn = 55 was identified in the Levels Document as that level required to protect against both hearing loss and activity interference with an adequate margin of safety. This, despite disclaimers to the contrary, has been erroneously interpreted as an implied standard. $L_{dn} = 55$ is not a recommended standard because EPA has not determined that achievement of that level is appropriate when considering other factors. Such factors as cost, feasibility, characteristics of the source and other agency objectives, some of which may be in conflict with noise reduction efforts, are important elements in both the standards setting process and in judging the acceptability of individual agency actions.

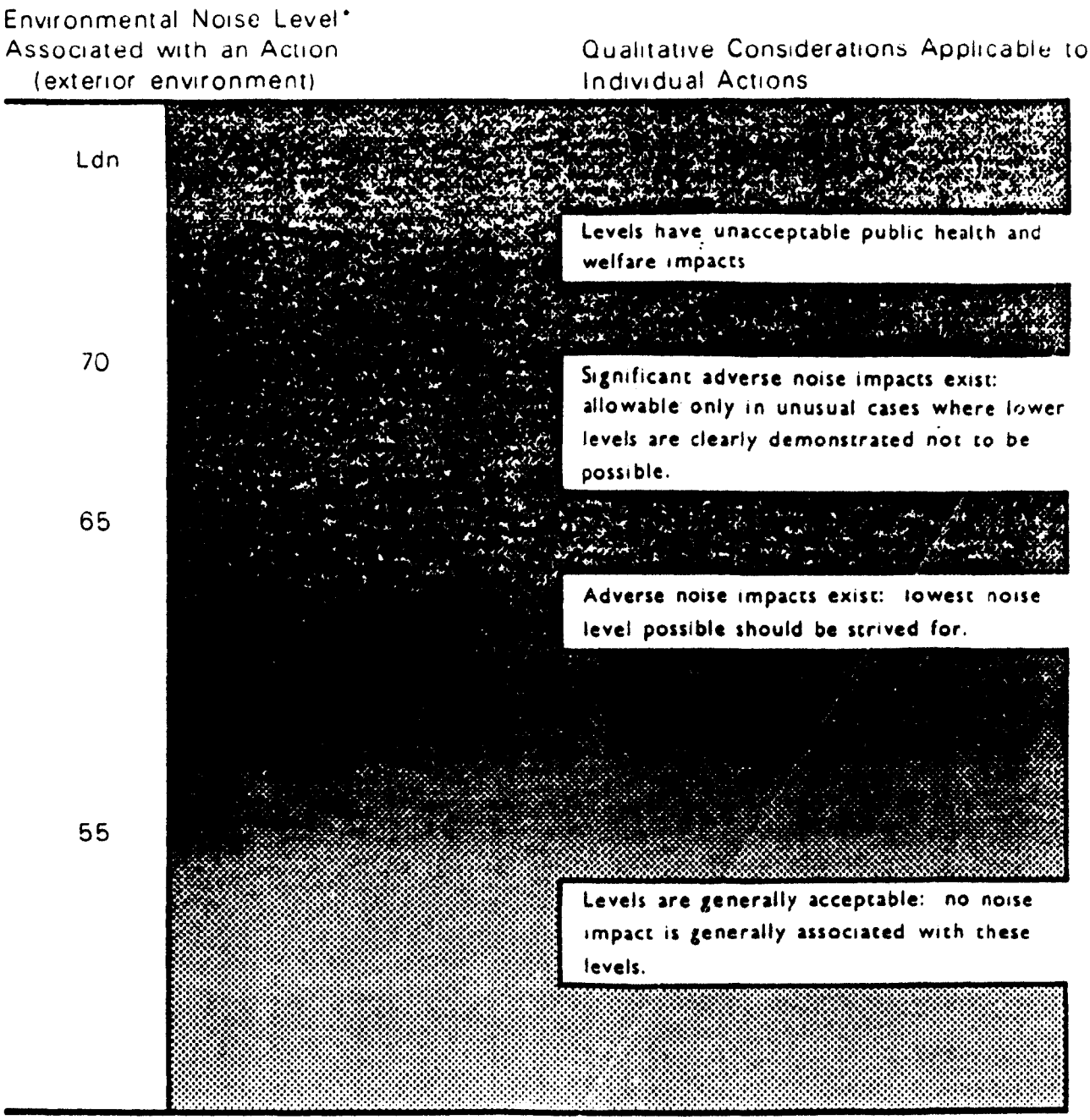
Accordingly, $L_{dn} = 55$ will be interpreted as the level to be strived

for with the recognition that the time horizon for actual achievement in individual cases will depend on a variety of other considerations. Until more definitive guidelines are established for various types of projects, EPA personnel will be guided by the general considerations in the attached chart.

In the Levels Document, EPA also established the L_{eq}/L_{dn} methodology as the uniform environmental noise descriptor recognizing that other descriptors may be appropriate for source emission controls of individual products or for other purposes. EPA recommends that the environmental noise impact analysis for this action employ the L_{eq}/L_{dn} noise descriptor methodology as the uniform environmental noise descriptor for Federal agency action.

*January 1975, revised November 24, 1980

FOR RESIDENTIAL, HOSPITAL AND EDUCATIONAL ACTIVITY



*Some structures do not contain relevant exterior activity space and therefore, in these cases, special determination of the acceptability of the interior environment should be made.