

## Chapter 2

### Background on the Environmental Criteria and Standards in 24 CFR Part 51

Part 51 contains one subpart (Subpart A) that establishes some general definitions of responsibility and three subparts (B-D) that establish specific environmental standards. Because Subpart A is a purely administrative section, of interest primarily to HUD staff, it is not discussed in this Chapter. It is, however, included in both Chapters 3 and 4.

#### NOISE ABATEMENT AND CONTROL

##### SUBPART B

###### Summary

The purpose of the noise regulation is to encourage land use patterns for housing and other noise sensitive urban needs that will provide a suitable separation between them and major noise sources. It provides minimum national standards applicable to HUD programs to protect citizens against excessive noise in their communities and places of residence. It also provides policy on the use of structural and other noise attenuation measures.

###### Historical Background

The Department of Housing and Urban Development's concern with the problem of noise is a longstanding one. As early as 1961 The Federal Housing Administration's appraisal guidance identified noise as an issue to be considered in property appraisals as part of our efforts to meet the requirements of the Housing Act of 1949 which set forth the national goal of "a decent home and a suitable living environment for every American Family."

In the mid 1960's, attention was focused on aircraft noise with the issuance of a report by the Executive Office of the President on Alleviation of Jet Aircraft Noise Near Airports. The report was prepared by a jet Aircraft Noise Panel composed of Federal, State and local officials and representatives of the airport operators, airlines, and aircraft manufacturing industry. Subsequently, a Federal Interagency Aircraft Noise Abatement Program (IANAP) was established and emphasis was placed on the three major aspects of the problem: the noise source (the aircraft), the noise path (how aircraft are flown), and the receiver (those living around airports). HUD was charged with chairing two interagency panels on the receiver portion of the problem, namely compatible land use planning and development around airports and methods of providing attenuation features in residential structures. Several studies were undertaken in support of the IANAP effort. About the same time, the Housing and Urban Development Act of 1965 was enacted. Under this Act, the Secretary was tasked to "determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the

airports in the vicinity of their homes, including a study of feasible methods of insulating such homes from the noise of aircraft."

The Department's first comprehensive noise standards were issued in 1971 in HUD Circular 1390.2: Noise Abatement and Control. This Circular contained standards for exterior noise levels along with policies for approving HUD supported or assisted housing projects in high noise areas. In general, the Circular established three zones: an acceptable zone where all projects could be approved, a normally unacceptable zone where mitigation measures would be required and where each project would have to be individually evaluated for approval or denial, and an unacceptable zone in which projects would not, as a rule, be approved.

During the 1970's significant improvements were made in the technology of noise measurement and description. In 1979, HUD issued the current noise regulation which reflects these changes and replaces the old Circular 1390.2. The Department kept the same basic standards but adopted new descriptor systems which were considerably advanced over those in use before.

While there continue to be improvements in noise measurement systems and computer noise modeling techniques, these are primarily refinements to the existing systems and techniques rather than major changes. Therefore the Department does not expect to make any significant revisions to its noise regulation anytime in the near future.

HUD's concern and involvement with the noise issue has been part of a larger Federal involvement with the noise problem. For example, the Department of Defense has had an aggressive program to promote compatible development around its installations since the early 1970's. (The Air Installation Compatible Use Zone program, as it is called, is a major source of noise data for HUD.) The Federal Aviation Administration has been working towards a quieter aviation environment for years as well. The focus of much of their earlier efforts was source reduction through their Federal Aviation Regulation 36 standards for engine noise. More recently the FAA has been looking at land use planning as another approach to reducing conflicts between aircraft noise and development through 46 CFR Part 150 on airport noise compatibility planning. The Federal Highway Administration has been working towards reducing highway noise conflicts through standards for new highway construction and guidance to States and localities. And finally, the Environmental Protection Agency had been a major force in source reduction and standards setting, particularly during the time Part 51B was under development.

#### Background on the Standards

Noise has two different types of effects on people: the direct physical effects such as hearing loss and the less direct effects of interference with activities such as sleep and conversation. The standards contained in the noise regulation are based on levels which cause interference effects, not the levels which can cause hearing loss.

welfare with an adequate margin of safety but without regard to cost or feasibility. To develop these criteria, the EPA drew upon a large body of survey data describing the degree of activity interference and resulting annoyance for a variety of noise levels. These surveys are summarized in the 1974 EPA report Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With An Adequate Margin of Safety.

Most of the surveys indicated that there were two breakpoints in reported interference and annoyance. Below 55 Ldn there was very little interference (for example, speech intelligibility was over 99%) and very little resulting annoyance. (Ldn stands for the Day-Night Average Sound Level and is the noise description system currently in use. It represents the average of all sound levels that occur during a 24 hour period, with a significant penalty added to sound levels between 10 pm and 7 am. See Figure 1 for an example of aircraft noise contours developed using the Ldn system.) Over 65 Ldn, interference and annoyance both increase rapidly. The EPA set 55 Ldn as the basic goal. But other Federal agencies, in consideration of their own program requirements and goals as well as the difficulty of actually achieving a goal of 55 Ldn, have settled on the 65 Ldn level as their standard. At 65 Ldn activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that we can realistically expect to achieve. Following the Federal lead, most local jurisdictions that have adopted noise standards have adopted 65 Ldn as the breakpoint for acceptability.

The common thinking of the various Federal agencies involved in the noise problem is reflected in a publication issued by the Federal Interagency Committee on Urban Noise: Guidelines for Considering Noise in Land Use Planning and Control. This booklet contains fairly specific land use recommendations and advice on various techniques that might be used to foster more compatible development. The booklet was the joint effort of the Environmental Protection Agency, the Department of Transportation, The Department of Defense, The Veterans Administration, and the Department of Housing and Urban Development.

#### Implementing Materials

The basic document needed to implement the noise regulation is the Noise Assessment Guidelines. These Guidelines contain desk top methods for calculating noise levels from aircraft, highways and railroads. The Guidelines also contain procedures for estimating the noise reduction from barriers and berms. The Guidelines are available from the Department of Housing and Urban Development. Contact the regional HUD office.

Also available is the Noise Guidebook. The Noise Guidebook is more of a background report that contains information on the basics of noise, noise legislation, noise attenuation and noise measurements. It also contains a series of tests so it can be used as a self-teaching device. It is available from the HUD User service. The address for the HUD User is: HUD User; P.O. Box 280; Germantown, MD 20874.

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