



## Appendix A



# FAA Policies, Guidance, and Regulations



# Appendix A

## FAA Policies, Guidance, and Regulations

### » A.1 Federal Laws and Policies and Research Related to Noise

This appendix presents information regarding noise and land use criteria that may be useful in the evaluation of noise impacts. With respect to airports, the Federal Aviation Administration (FAA) has a long history of publishing noise and land use assessment criteria. These laws and regulations provide the basis for local development of airport noise compatibility plans, analyses of airport impacts, and the enactment of noise compatibility policies. Other agencies, including the United States Environmental Protection Agency (USEPA) and the Department of Defense (DOD), have developed noise and land use criteria. A summary of some of the more pertinent regulations and guidelines is presented in the following paragraphs.

#### A.1.1 Noise Control Act

Congress passed the Noise Control Act (42 U.S.C. § 4901 et seq.) in 1972, which established a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. This act set forth the foundation for conducting research and setting guidelines to restrict noise pollution.

#### A.1.2 U.S. Environmental Protection Agency Noise Assessment Guidelines

In response to the Noise Control Act, the USEPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. This document identifies safe levels of environmental noise exposure without consideration for economic cost for achieving these levels. In this document, 55 decibel (dB) day-night average sound level (DNL) is identified as the requisite level with an adequate margin of safety for residential and recreational uses. This document does not constitute USEPA regulations or standards; rather, it is intended to “provide state and local governments as well as the Federal government and the private sector with an informational point of departure for the purpose of decision-making.”

#### A.1.3 Federal Aviation Noise Abatement Policy

On November 18, 1976, the U.S. Department of Transportation and FAA jointly issued the Federal Aviation Noise Abatement Policy. This policy recognized aircraft noise as a major constraint on the further development of commercial aviation and established key responsibilities for addressing aircraft noise. The policy stated that the Federal Government has the authority and responsibility to regulate noise at the source by designing and managing flight procedures to limit the impact of aircraft noise on local communities; and by providing funding to airports for noise abatement planning.

#### A.1.4 Aviation Safety and Noise Abatement Act of 1979

The Aviation Safety and Noise Abatement Act of 1979 (ASNA), which is codified as 49 U.S.C. § 47501-47510, set forth the foundation for the airport noise compatibility planning program outlined in 14 Code of Federal Regulations (CFR) Part 150 (see Section A.1.8). This act established the requirements for conducting noise compatibility planning. In addition, the act provided assistance to airport operators in applying for funding to undertake such planning.



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## A.1.5 Airport Noise and Capacity Act of 1990

The Airport Noise and Capacity Act of 1990 (ANCA) established two broad directives for the FAA: 1) to establish a method by which to review airport noise and access/use restrictions imposed by airport proprietors, and 2) to institute a program to phase-out Stage 2 aircraft over 75,000 lbs. by December 31, 1999, as defined by 14 CFR Part 36 (see Section A.1.6). To implement ANCA, the FAA amended 14 CFR Part 91 (see Section A.1.7) and issued 14 CFR Part 161 (see Section A.1.9).

## A.1.6 14 CFR Part 36

Title 14, Part 36, of the CFR sets forth noise levels that are permitted for aircraft of various weights, engine number, and date of certification. Originally released in 1974 as a result of Congress' modification of the Federal Aviation Act of 1958 through the Noise Control Act of 1972, aircraft were divided into three classes: Stage 1, Stage 2, Stage 3, based on the amount of noise they produced at three specific noise measurement locations during certification testing. In addition, Stage 4 (adopted in 2005) and Stage 5 (adopted in 2017) are also described below.

**Stage 1** – Includes the oldest and loudest aircraft, typically of the first generation of jets, designed before 1974, and having measured noise levels that exceed the standards set for the other classes of aircraft. This group included many of the first generation of jet aircraft used in passenger and cargo service, including the B-707, early B-727 and B-737 aircraft, and early DC-8s. Under 14 CFR Part 91, all such aircraft weighing more than 75,000 pounds were removed from the U.S. operating fleet by 1985, unless modified to meet Stage 2 noise standards.

**Stage 2** – Includes aircraft that were type certified before November 15, 1975 that met noise levels defined by the FAA at takeoff, sideline, and approach measurement locations. The permissible amount of noise increased with the weight of the aircraft above 75,000 pounds and the number of engines. This category included many of the second-generation jet aircraft such as the B-727, B-737-200, and DC-9 that were extensively used in passenger and cargo service. Under 14 CFR Part 91, all such aircraft weighing more than 75,000 pounds were removed from the U.S. operating fleet by 2000, unless modified to meet Stage 3 noise standards. As of December 31, 2015, this requirement was extended to all aircraft with a maximum weight of 75,000 pounds or less operating in the contiguous United States.

**Stage 3** – Includes aircraft that meet more stringent noise level requirements at takeoff, sideline, and approach measurement locations for their weight and engine number. This category includes a large percentage of business jet aircraft and all aircraft in passenger and cargo service that weigh more than 75,000 pounds.

**Stage 4** – In July 2005, the FAA, through notice in the Federal Register, adopted by Final Rule for Stage 4 Aircraft Noise Standards. This includes all jet and transport-category airplanes with a maximum take-off weight of 12,500 pounds or more for which application of a new type design is submitted on or after January 1, 2006. The FAA's final Part 36 Stage 4 noise levels are a cumulative 10 EPNdB (effective perceived noise level in decibels) less than the current Stage 3 limits. These limits are based on the work of the International Civil Aviation Organization (ICAO), in which the FAA and the International Business Aviation Council are active members.

**Stage 5** – In November 2017, the FAA, through a notice in the *Federal Register*, adopted by Final Rule Stage 5 Aircraft Noise Standards which includes all jet and transport-category airplanes with a maximum take-off weight of 121,254 pounds or more for which application of a new type design is submitted on or after December 31, 2017; or with maximum certificated takeoff weight of less than 121,254 pounds on or after December 31, 2020. This change will set a lower noise limit for newly certificated airplanes and match the noise certification standards for aircraft certified under international standards.



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#### A.1.7 14 CFR Part 91

Title 14, Part 91 of the CFR as applied to noise, established schedules for phasing louder equipment out of the operating fleet of aircraft weighing according to Part 36 stage limits. The schedules called for all Stage 1 aircraft over 75,000 pounds to be removed from commercial fleets by 1982, with the exception of two engine aircraft in small city service, which were allowed to continue in service until 1985.

The schedule for the retirement of Stage 2 aircraft required the removal of all such aircraft over 75,000 pounds by the end of 1999, with interim retirement dates of 1994, 1996, and 1998 for the removal of portions of the Stage 2 fleet.

On July 2, 2013, the FAA issued a Final Rule which prohibits the operation in the contiguous United States of jet airplanes weighing 75,000 pounds or less that do not meet Stage 3 noise levels after December 31, 2015.<sup>1</sup>

The ICAO Committee on Aviation Environmental Protection continues to debate the merits of adopting a more stringent standard for new aircraft type designs. No action has been taken as of 2023, to establish a phase-out schedule for Stage 3 aircraft in the United States.

#### A.1.8 14 CFR Part 150

Title 14, Part 150 of the CFR sets forth the standards under which a Part 150 Noise Compatibility Study is conducted. Notably, the preparation of a Noise Compatibility Program (NCP) under 14 CFR Part 150 is a voluntary action by an airport proprietor. The process of preparing the plan is intended to open/enhance lines of communication between the airport, its neighbors, and users. It is the only mechanism to provide for the mitigation of aircraft noise impacts on noise-sensitive surrounding areas that is not directly tied to airfield development or airspace utilization conducted subject to the rules for preparation of an Environmental Impact Statement (EIS) or Environmental Assessment (EA).

The Part 150 Program allows airport operators to voluntarily submit noise exposure maps (NEMs) and NCPs to the FAA for review and approval. An NCP sets forth the measures that an airport operator “has taken” or “has proposed” for the reduction of existing incompatible land uses and the prevention of additional incompatible land uses within the area covered by NEMs.

#### A.1.9 14 CFR Part 161

Title 14, Part 161 of the CFR was published in 1991, subsequent to passage of the ANCA. That act established the requirement and schedule for the phase-out of Stage 2 aircraft over 75,000 pounds. In return for that action, Congress severely restricted the ability of local communities to impose actions that would restrict aircraft access to any airport. Different levels of requirements were established for voluntary restrictions, restrictions on Stage 2 aircraft, and restrictions on Stage 3 aircraft. These requirements are applicable to all aircraft except propeller-driven aircraft weighing less than 12,500 pounds, supersonic aircraft, and Stage 1 aircraft.

##### A.1.9.1 Restrictive Agreements

Subpart B of 14 CFR Part 161 sets forth requirements for the implementation of noise or access restriction on the operation of Stage 3 aircraft under an agreement between airport operators and all affected airport users. Before going into effect, notice of these proposed agreements must be published in local newspapers of area wide circulation, posted prominently at the airport, and sent directly to all regular airport users; the FAA; Federal, state, and local agencies with land use control authority; community groups and business organizations; and any aircraft operators that are known to be interested in providing service to the airport (new entrants). After this notification

<sup>1</sup> Federal Aviation Administration, Final Rule: Adoption of Statutory Prohibition on the Operation of Jets Weighing 75,000 Pounds or Less That Are Not Stage 3 Noise Compliant, Federal Register Volume 78, Number 127 (Tuesday, July 2, 2013).



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period, the agreement can be implemented if all current users and any new entrants proposing to serve the airport within 180 days sign on to the proposed restriction.

#### A.1.9.2 Stage 3 Restrictions

Subpart D of 14 CFR Part 161 establishes the requirements that an airport operator must follow in order to implement a noise or access restriction on Stage 3 aircraft, including a study and formal application package. The required Part 161 study must demonstrate “by substantial evidence that the statutory conditions are met.” These six conditions, specified in ANCA and codified in 14 CFR Part 161 are:

- Condition 1: The restriction is reasonable, non-arbitrary, and non-discriminatory.
- Condition 2: The restriction does not create an undue burden on interstate or foreign commerce.
- Condition 3: The proposed restriction maintains safe and efficient use of the navigable airspace.
- Condition 4: The proposed restriction does not conflict with any existing Federal statute or regulation.
- Condition 5: The applicant has provided adequate opportunity for public comment on the proposed restriction.
- Condition 6: The proposed restriction does not create an undue burden on the national aviation system.<sup>2</sup>

The applicant must also prepare an EA or documentation supporting a categorical exclusion.<sup>3</sup>

After submission by an airport operator of a complete Part 161 application package, the FAA has 30 days to review it for completeness. Notice of the proposed restriction must be published by the FAA in the *Federal Register*. After reviewing the application and public comments, the FAA must issue a decision approving or disapproving the proposed restriction within 180 days after receipt of a complete application. This decision is a final decision of the FAA Administrator for purposes of judicial review.<sup>4</sup>

#### A.1.9.3 Consequences of Failing to Comply with Part 161

Subpart F of 14 CFR Part 161 describes the consequences of an airport operator’s failure to comply with Part 161. The sanction provided for in Subpart F is the termination of the airport’s eligibility to receive airport grant funds and to collect Passenger Facility Charges (PFCs).<sup>5</sup> Most of Subpart F describes the process for notifying airport operators of apparent violations, dispute resolution, and implementation of the required sanctions.

### A.1.10 Federal Interagency Committee on Noise

Federal Interagency Committee on Noise (FICON) was formed in 1990 to review specific elements of the assessment of airport noise impacts and to make recommendations regarding potential improvements. The FICON review focused primarily on the manner in which noise impacts are determined, including:

- Whether aircraft noise impacts are fundamentally different from other transportation noise impacts;
- The manner in which noise impacts are described;
- The extent of impacts outside of DNL 65 dB that should be reviewed in a National Environmental Policy Act (NEPA) document;
- The range of FAA-controlled mitigation options (noise abatement and flight track procedures) analyzed; and
- The relationship of the 14 CFR Part 150 process to the NEPA process; including ramifications to the NEPA process if they are separate, and exploration of the means by which the two processes can be handled to maximize benefits.

<sup>2</sup> 14 CFR Part 161, Sec. 161.305(e).

<sup>3</sup> 14 CFR Part 161, Sec. 161.305(c).

<sup>4</sup> 14 CFR Part 161, Sec. 161.313(b)(2).

<sup>5</sup> 14 CFR Part 161, Sec. 161.501-505.



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FICON determined that there are no new descriptors or metrics of sufficient scientific standing to substitute for the present DNL cumulative noise exposure metric. The methodology employing DNL as the noise exposure metric and appropriate dose-response relationships to determine noise impact is considered the proper one for civil and military aviation scenarios in the general vicinity of airports.

In 1992 FICON recommended continued use of DNL as the principle means of assessing noise impacts and encouraged agency discretion in the use of supplemental noise analysis. The Committee also recommended continued research on the impact of aircraft noise, and recommended that “a standing federal interagency committee should be established to assist agencies in providing adequate forums for discussion of public and private sector proposals, identifying needed research, and in encouraging the conduct of research and development in these areas.”

### Federal Interagency Committee on Aviation Noise (FICAN)

The FICAN was formed in 1993 to fulfill the FICON recommendation. The following Federal agencies concerned with aviation noise, including those with policy roles, are represented on the Committee:

- Department of Defense
  - U.S. Air Force
  - U.S. Army
  - U.S. Navy
- Department of Interior
  - National Park Service
- Department of Transportation
  - Federal Aviation Administration
- Environmental Protection Agency
- National Aeronautics and Space Administration (NASA)
- Department of Housing and Urban Development

### A.1.11 Federal Requirements to use DNL in Environmental Noise Studies

DNL is the standard metric used for environmental noise analysis in the United States. This practice originated with the USEPA’s effort to comply with the Noise Control Act of 1972. The USEPA designated a task group to “consider the characterization of the impact of airport community noise and develop a community noise exposure measure.”<sup>6</sup> The task group recommended using the DNL metric. The USEPA accepted the recommendation in 1974, based on the following considerations:

1. The measure is applicable to the evaluation of pervasive, long-term noise in various defined areas and under various conditions over long periods of time.
2. The measure correlates well with known effects of the noise environment on individuals and the public.
3. The measure is simple, practical, and accurate.
4. Measurement equipment is commercially available.
5. The metric at a given location is predictable, within an acceptable tolerance, from knowledge of the physical events producing the noise.<sup>7</sup>

<sup>6</sup> Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety. U.S. Environmental Protection Agency, Office of Noise Abatement and Control. 1974, P. A-10.

<sup>7</sup> Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety. U.S. Environmental Protection Agency, Office of Noise Abatement and Control. 1974, Pp. A-1–A-23.



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The Schultz Curve, which is depicted in **Exhibit A-1, *Schultz Curve***, was first published by T.J. Schultz in *Synthesis of Social Surveys on Noise Annoyance* in 1978. The curve relates specific DNL levels to the percent of people in a community whom those noise levels highly annoy. The Curve provided a widely-accepted dose-response relationship between cumulative environmental noise and annoyance. Like other federal agencies that have established federal land use guidelines for noise, FAA used the Schultz Curve, when it designated the DNL 65 dB contour as the cumulative noise exposure level above which residential land uses are not compatible without mitigation. At DNL 65 dB, the Schultz Curve predicts that approximately 12.5 percent of the population will be highly annoyed.

Soon thereafter, the Department of Housing and Urban Development (HUD), DOD, and the Veterans Administration adopted the use of the DNL.

At about the same time, the Acoustical Society of America developed a standard (ANSI S3.23-1980) which established DNL as the preferred metric for outdoor environments. This standard was reevaluated in 1990 and they reached the same conclusions regarding the use of DNL (ANSI S12.40-1990).

In 1980, the Federal Interagency Committee on Urban Noise (FICUN) met to consolidate Federal guidance on incorporating noise considerations in local land use planning. The committee selected DNL as the best noise metric for the purpose, thus endorsing the USEPA's earlier work and making it applicable to all Federal agencies.<sup>8</sup>

In response to the requirements of the ASNA Act of 1979 and the recommendations of FICUN and USEPA, the FAA established DNL in 1981 as the single metric for use in airport noise and land use compatibility planning. This decision was incorporated into the final rule implementing ASNA, 14 CFR Part 150, in 1985. Part 150 established the DNL as the noise metric for determining the exposure of individuals to aircraft noise and identified residential land uses as being normally compatible with noise levels below DNL 65 dB.

In the early 1990s, Congress authorized the creation of a new interagency committee to study airport noise issues. The FICON was formed with membership from the USEPA, the FAA, the U.S. Air Force, the U.S. Navy, HUD, the Department of Veterans Affairs, and others. FICON concluded in its 1992 report that Federal agencies should "continue the use of the DNL metric as the principal means for describing long term noise exposure of civil and military aircraft operations."<sup>9</sup> FICON further concluded that there were no new sound descriptors of sufficient scientific standing to substitute for the DNL cumulative noise exposure metric."<sup>10</sup>

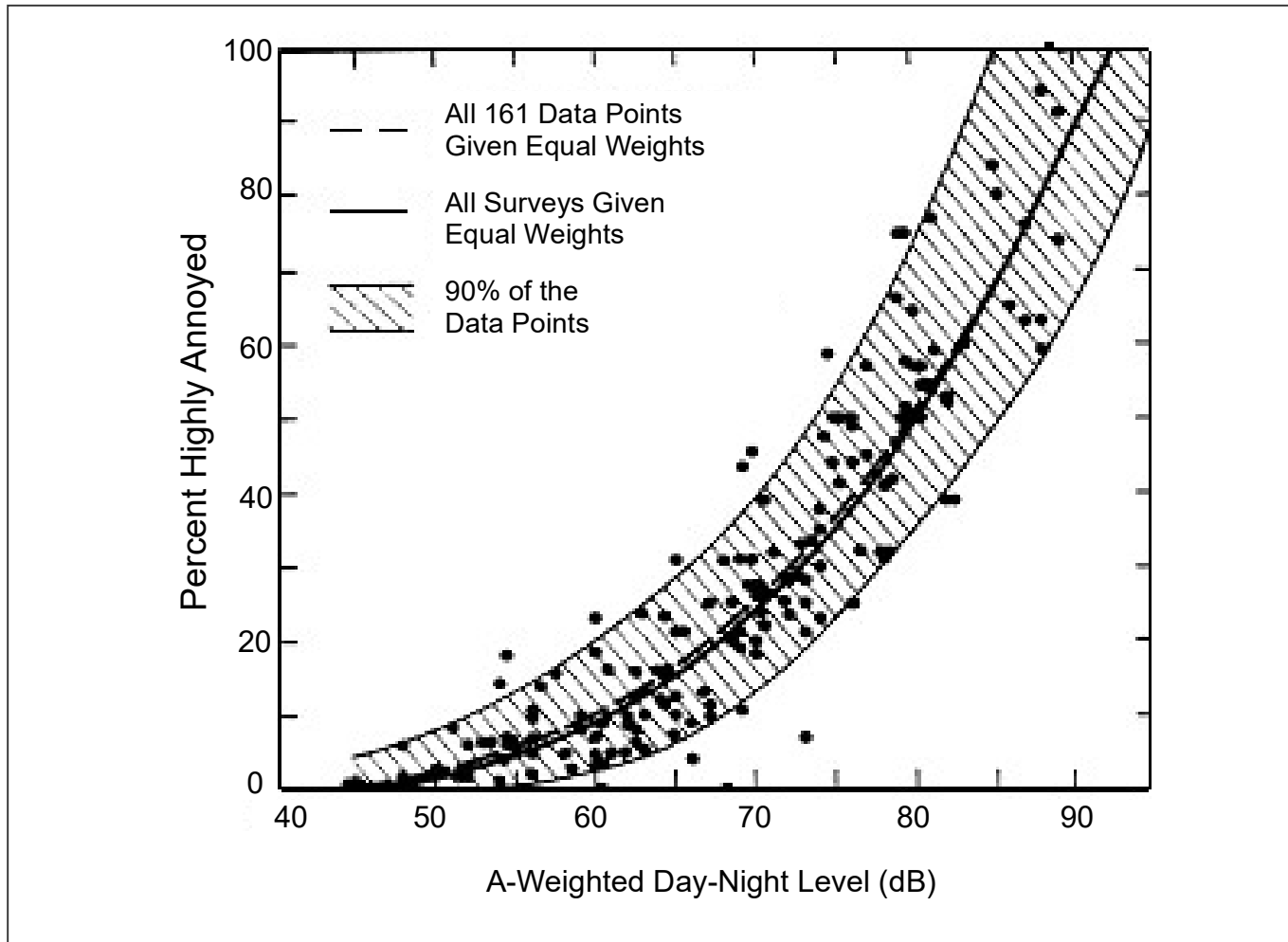
<sup>8</sup> *Guidelines for Considering Noise in Land Use Planning and Control*. Federal Interagency Committee on Urban Noise (FICUN). 1980.

<sup>9</sup> *Federal Agency Review of Selected Airport Noise Analysis Issues*. Federal Interagency Committee on Noise (FICON). August 1992, Pp. 3-1.

<sup>10</sup> *Federal Agency Review of Selected Airport Noise Analysis Issues, Technical Report, Volume 2*. Federal Interagency Committee on Noise (Technical). August 1992, Pp. 2-3.



## EXHIBIT A-1 | SCHULTZ CURVE



In 1993, the FAA issued its *Report to Congress on Effects of Airport Noise*. Regarding DNL, the FAA stated, “Overall, the best measure of the social, economic, and health effects of airport noise on communities is the DNL.”<sup>11</sup> According to this report, DNL 65 dB “...as a criterion of significance, and of the land use compatibility guidelines in Part 150 is reasonable.”<sup>12</sup> In April 2020, the FAA issued a report to Congress in accordance with section 188 in the 2018 FAA Reauthorization Act which stated that the DNL metric is the metric to be used for FAA decision-making.<sup>13</sup> The report further noted that other supplemental metrics could be used for informational purposes. Information regarding supplemental metrics can be found in **Appendix C, Noise Modeling Methodology**.

<sup>11</sup> *Report to Congress on Effects of Airport Noise*. Federal Aviation Administration. 1993, P. 1.

<sup>12</sup> *Report to Congress on Effects of Airport Noise*. Federal Aviation Administration. 1993, P. 13.

<sup>13</sup> *Report to Congress, FAA Reauthorization Act of 2018 (Pub. L. 115-254), Section 188 and Sec 173*. Federal Aviation Administration, 2020.





## » A.2 Federal Laws and Policies Related to Noise/Land Use Compatibility

The FAA adopted land use compatibility guidelines relating types of land use to airport sound levels in 1985. These guidelines were promulgated in 14 CFR Part 150. These guidelines, reproduced here as **Table A-1, Land Use Compatibility Guidelines – 14 CFR Part 150**, show the compatibility parameters for residential, public (schools, churches, nursing homes, hospitals, libraries), commercial, manufacturing and production, and recreational land uses.

The Part 150 guidelines are the basis for defining areas potentially eligible for Federal funding through the Airport Improvement Program (AIP). The *Airport Improvement Handbook* states, “Noise compatibility projects usually must be located in areas where noise measured in DNL is 65 dB or greater.”<sup>14</sup> Federal funding is available at noise levels below 65 DNL if the airport operator (Sponsor) determines that incompatible land uses exist below 65 DNL and the FAA concurs with the Sponsor’s determination.

As shown in **Table A-1**, all land uses within areas below 65 DNL are considered to be compatible with airport operations. Residential land uses are generally incompatible with noise levels above 65 DNL. In some areas, residential land use may be permitted in the 65 to 70 DNL with appropriate sound insulation measures implemented. This is done at the discretion of local communities. Schools and other public use facilities located between 65 and 75 DNL are generally incompatible without sound insulation. Above 75 DNL, schools, hospitals, nursing homes, and churches are considered incompatible land uses. The information presented in Table 4-1 is meant to act as a guideline. According to 14 CFR Part 150, “Adjustments or modifications of the descriptions of the land-use categories may be desirable after consideration of specific local conditions.”<sup>15</sup>

<sup>14</sup> FAA Order 5300.38C, Chapter 7, paragraph 706.

<sup>15</sup> 14 CFR Part 150, Part B Noise Exposure Map Development, Section A150.101 Noise contours and land usages, paragraph (c).



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**TABLE A-1 | LAND USE COMPATIBILITY GUIDELINES – 14 CFR PART 150**

Yearly Day-Night Average Sound Level (DNL) in Decibels						
Land Use	Below 65	65-70	70-75	75-80	80-85	Over 85
<b>RESIDENTIAL</b>						
Residential, other than mobile homes and transient lodgings	Y	N <sup>1</sup>	N <sup>1</sup>	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N
<b>PUBLIC USE</b>						
Schools, hospitals, 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 <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N <sup>4</sup>
Parking	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
<b>COMMERCIAL USE</b>						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale & retail - building materials, hardware, & farm equipment	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Retail trade, general	Y	Y	25	30	N	N
Utilities	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Communication	Y	Y	25	30	N	N
<b>MANUFACTURING AND PRODUCTION</b>						
Manufacturing, general	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y <sup>6</sup>	Y <sup>7</sup>	Y <sup>8</sup>	Y <sup>8</sup>	Y <sup>8</sup>
Livestock farming and breeding	Y	Y <sup>6</sup>	Y <sup>7</sup>	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
<b>RECREATIONAL</b>						
Outdoor sports arenas and spectator sports	Y	Y	Y <sup>5</sup>	N <sup>5</sup>	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

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable 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 A-1

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



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#### Notes for Table A-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 five, 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 a NLR of 25 dB.
7. Residential buildings require a NLR of 30 dB.
8. Residential buildings not permitted.

Source: 14 CFR Part 150 Airport Noise Compatibility Planning, Appendix A, Table 1.

### A.2.1 FAA Final Policy on Part 150 Noise Mitigation Measures

The FAA issued a final policy to establish a distinction between remedial and preventive noise mitigation measures proposed by airport operators and submitted for approval by the FAA under noise compatibility planning regulations. In the notice of final policy<sup>16</sup> effective October 1, 1998, the FAA stated the following:

- As of October 1, 1998, the FAA will approve under 14 CFR Part 150 only remedial noise mitigation measures for existing incompatible development and only preventative noise mitigation measures in areas of potential new incompatible development.
- The FAA will not approve remedial noise mitigation measures for new incompatible development that occurs in the vicinity of airports.
- The use of AIP funds will be affected to the extent that such used depends on approval under Part 150.

The Airport Noise Compatibility Planning Program (14 CFR Part 150) was established under the ASNA. The Part 150 program allows airport operators to submit Noise Exposure Maps (NEMs) and Noise Compatibility Programs (NCPs) to the FAA voluntarily. According to the ASNA, an NCP sets forth the measures that an airport operator has taken or has proposed for the reduction of existing incompatible land uses and the prevention of additional incompatible land uses within the area covered by NEMs.

The ASNA embodies strong concepts of local initiative and flexibility. The submission of NEMs and NCPs is left to the discretion of local airport operators. Airport operators also may choose to submit NEMs without preparing and submitting an NCP. The types of measures that airport operators may include in an NCP are not limited by the ASNA, allowing airport operators substantial latitude to submit a broad array of measures—including innovative measures—that respond to local needs and circumstances.

The criteria for approval or disapproval of measures submitted in a Part 150 program are set forth in the ASNA. The ASNA directs the Federal approval of an NCP, except for measures relating to flight procedures: (1) if the program measures do not create an undue burden on interstate or foreign commerce; (2) if the program measures are reasonably consistent with the goal of reducing existing incompatible land uses and preventing the introduction of additional incompatible land uses; and (3) if the program provides for its revision if necessitated by the submission of a revised NEM. Failure to approve or disapprove an NCP within 180 days, except for measures relating to flight procedures, is deemed to be an approval under the ASNA.

<sup>16</sup> FAA Notice of Final Policy, October 1, 1998.



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Finally, the ASNA sets forth criteria under which grants may be made to carry out noise compatibility projects, consistent with ASNA's overall deference to local initiative and flexibility.

The FAA is authorized, but not obligated, to fund projects via the AIP to carry out measures in an NCP that are not disapproved by the FAA. Such projects also may be funded with local PFCs revenue upon the FAA's approval of an application filed by a public agency that owns or operates a commercial service airport, although the use of PFC revenue for such projects does not require an approved NCP under Part 150.

In establishing the airport noise compatibility planning program, which became embodied in 14 CFR Part 150, the ASNA did not change the legal authority of state and local governments to control the uses of land within their jurisdictions. Public controls on the use of land are commonly exercised by zoning. Zoning is a power reserved to the states under the U.S. Constitution. It is an exercise of the police powers of the states that designates the uses permitted on each parcel of land. This power is usually delegated in states enabling legislation to local levels of government.

Many local land use control authorities (cities, counties, etc.) have not adopted zoning ordinances or other controls to prevent incompatible development (primarily residential) within the noise impact areas of airports. An airport noise impact area, identified within noise contours on an NEM, may extend over a number of different local jurisdictions that individually control land uses.

While airport operators have included measures in NCPs submitted under Part 150 to prevent the development of new incompatible land uses through zoning and other controls under the authorities of appropriate local jurisdictions, success in implementing these measures has been mixed.

One or more of the factors hindering effective land use controls may be of sufficient importance to preclude some jurisdictions from following through on the land use recommendations of an airport's Part 150 NCP. When either an airport sponsor's or a non-airport sponsor's jurisdiction allows additional incompatible development within the airport noise impact area. This can, in turn, result in noise problems for the airport operator in the form of inverse condemnation or noise nuisance lawsuits, public opposition to proposals by the airport operator to expand the airport's capacity, and local political pressure for airport operational and capacity limitations to reduce noise. Some airport operators have taken the position that they will not provide any financial assistance to mitigate aviation noise for new incompatible development. Other airport operators have determined that it is a practical necessity for them to include at least some new residential areas within their noise assistance programs to mitigate noise impacts that they were unable to prevent in the first place. Over a relatively short period of time, the distinctions blur between what is "new" and what is "existing" residential development with respect to airport noise issues.

Airport operators currently may include new incompatible land uses, as well as existing incompatible land uses, within their Part 150 NCPs and recommend that remedial noise mitigation measures--usually either property acquisition or noise insulation--be applied to both situations. These measures have been considered to qualify for approval by the FAA under 49 U.S.C. § 47504 and 14 CFR Part 150. The Part 150 approval enables noise mitigation measures to be considered for Federal funding under the AIP, although it does not guarantee that Federal funds will be provided.

### Final Policy

Therefore, as of October 1, 1998, the FAA will approve remedial noise mitigation measures under Part 150 only for incompatible development which exists as of that date. Incompatible development that potentially may occur on or after October 1, 1998, may only be addressed in Part 150 programs with preventative noise mitigation measures. This policy will affect the use of AIP funds to the extent that such funding is dependent on approval under 14 CFR Part 150.

Approval of remedial noise mitigation measures for bypassed lots or additions to existing structures within noise impacted neighborhoods, additions to existing noise impacted schools or other community facilities required by



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demographic changes within their service areas, and formerly noise compatible uses that have been rendered incompatible as a result of airport expansion or changes in airport operations, and other reasonable exceptions to this policy on similar grounds must be justified by airport operators in submittals to the FAA and will be considered by the FAA on a case-by-case basis. This policy does not affect AIP funding for noise mitigation projects that do not require Part 150 approval, that can be funded with PFC revenue, or that are included in FAA-approved environmental documents for airport development.

### A.2.2 FAA Airport Improvement Program Handbook

Airport Improvement Program (AIP) Handbook<sup>17</sup> provides guidance and sets forth policy and procedures used in the administration of the AIP. Appendix R, *Noise Compatibility Planning/Projects*, provides guidance and eligibility requirements for airport noise mitigation programs. The following sections provide the general steps for determining eligibility for mitigation under AIP guidelines.

#### A.2.2.1 General Eligibility Requirements

**Table A-1, Land Use Compatibility Guidelines – 14 CFR Part 150**, defines the requirements for determining when various land uses are noncompatible with aircraft noise, and therefore potentially eligible for AIP funding. The DNL 65 dB noise contour is the noise level at or above which certain land uses are not considered to be compatible (49 U.S.C. § 47502, as defined in Table A-1). The converse is also true – because DNL 65 dB is the Federal threshold for considering certain land uses as compatible, noise-sensitive land uses located outside of the DNL 65 dB noise contour are not considered to be impacted by airport related noise. They are not eligible for mitigation funding unless a lower local standard is formally adopted.

#### A.2.2.2 Interior Noise Level Requirements

The 45 dB standard has been adopted by the FAA for interior noise. This is based on 46 Federal Register 8316 (January 26, 1981), which established the interim rule for 14 CFR part 150 and included specific requirements regarding interior noise level. This was further clarified in 1992 by the FICON findings of 45 dB to be the interior noise level that will accommodate indoor conversations or sleep. A noise-impacted noncompatible structure must be experiencing existing interior noise levels that are 45 dB or greater with the windows closed to be considered eligible. For residences, the calculation of interior noise level must be based on the average noise level of only the habitable rooms (e.g. living, sleeping, and kitchen areas). For schools, the interior noise level during school hours should be calculated for determination of eligibility. Eligibility for noise insulation is limited to classrooms, libraries, fixed seat auditoriums, and educators' offices.

#### A.2.2.3 Block Rounding

Block rounding refers to expanding the noise mitigation program area beyond the limits of the 65 DNL noise contour to a logical breakpoint (such as a neighborhood boundary, significant arterial surface street, highway, river, other physical or natural barrier or feature). The FAA will review a request for block rounding under a noise mitigation program (or environmental study). If approved under block rounding, the property must meet the interior noise level requirements described in **Section A.2.2.2**.

<sup>17</sup> U.S. Department of Transportation, Federal Aviation Administration, Order 5100.38D, Change 1, February 26, 2019.



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#### *A.2.2.4 Neighborhood Equity*

A sponsor may consider the use of neighborhood equity when residences in the eligible noise contour threshold that do not meet the interior noise level requirements are scattered among residences that do meet the interior noise level criteria. If the sponsor proposes to use neighborhood equity provisions, the FAA has the option to approve this request under the following circumstances.

- The residence must be in the eligible noise contour threshold.
- The sponsor must develop a separate neighborhood equity package limited to improvements such as caulking, weather stripping, installation of storm doors or ventilation packages. The FAA must not approve the use of the standard noise insulation package for neighborhood equity residences.
- Per FAA policy, approval should not exceed more than 10% of the residences in the neighborhood, or 20 residences in a phase of the noise insulation program, whichever is less.
- In extremely rare cases, the FAA may determine that the program will benefit by providing noise equity packages to more than the 10% or 20 residence limit.
- The sponsor must provide the FAA, Airports District Office (ADO) with a complete list of the specific residences (by address) that are proposed for neighborhood equity.
- The sponsor must provide the ADO with detailed information comparing the cost of the proposed neighborhood equity package with the cost of a standard noise insulation package.
- The ADO must review and approve or disapprove the sponsor's proposed neighborhood equity package. In their determination, the ADO must ensure that the use of the minimal neighborhood equity packages on non-eligible residences is required to allow successful completion of the overall noise insulation program in the neighborhood, thus allowing these residences to be noise insulated within the guidelines of AIP eligibility. The ADO must document the determination and place a copy of the determination in the grant file.

#### *A.2.2.5 Pre- and Post-Testing Criteria for Noise Insulation Projects*

The AIP Handbook sets forth requirements for testing potentially eligible structures to determine if the interior noise level requirements are met. This guidance includes requirements for testing methodology, equipment, and the determination of an adequate sample size, which could impact program startup and implementation costs and funding reimbursement.



#### *A.2.2.6 Disposal of Excess/Unneeded AIP Funded Land*

Section 5-68 of the AIP Handbook sets forth requirements for disposal of land acquired under an airport NCP, commonly referred to as “noise land.” 49 U.S.C. § 47107(c)(2) requires a sponsor to promptly dispose of AIP funded land when the land is no longer needed for airport purposes. In this specific case, airport purpose includes land needed for an existing or future aeronautical purpose (including runway protection zone) or land that serves as a noise buffer. If it is determined that the land is no longer needed for these purposes, the airport sponsor has the choice of either selling or keeping the land for non-airport purposes. In either case, the airport sponsor must use the Federal share of the fair market value on projects in the following order of precedence:

1. Reinvestment in an approved noise compatibility project.
2. Reinvestment in an approved project that is eligible for funding under 49 U.S.C. § 47117(e).
3. Reinvestment in all other approved airport development projects at the airport.
4. Transfer to a sponsor of another public airport for a noise compatibility project at the other airport.
5. Repay the proceeds as directed by the FAA Office of Finance and Management.

### **A.2.3 Program Guidance Letters**

Program Guidance Letters are issued to update or clarify elements of the AIP Handbook. One current Program Guidance Letter (PGL), related to changes outlined in the FAA Reauthorization Act of 2018 dealing with noise and environmental issues is R-PGL 19-06.

#### *A.2.3.1 Reauthorization Program Guidance Letter (R-PGL) 19-06*

This Reauthorization Program Guidance Letter (R-PGL) 19-06 explains and implements provisions in the FAA Reauthorization Act of 2018 (the 2018 Act) (P.L.115-254) that impact environmental and noise programs.

Section 49 U.S.C. § 47503(b) requires airport operators with noise exposure maps to submit a revised map if a change, which is not reflected in either the existing conditions map or forecast map currently on file with the FAA, in the operation of the airport:

1. Establishes a substantial new noncompatible use; or
2. Would significantly reduce noise over existing noncompatible uses.

Section 174 amends 49 U.S.C. § 47503(b) by requiring submission of an updated noise exposure map only if the relevant change occurs during:

1. The forecast period of the applicable noise exposure map; or
2. The implementation period of the airport operator’s noise compatibility program.

This provision applies only to airport sponsors that have a noise exposure map on file with the FAA.