San Antonio International Airport

Title 14 Code of Federal Regulations (CFR) Part 150

Noise Exposure Map Update

Frequently Asked Questions

What is a 14 CFR Part 150 Noise Study?

Title 14 Code of Federal Regulations (CFR) Part 150, *Airport Noise Compatibility Planning*, was issued by the Federal Aviation Administration (FAA) as a final rule in January 1985. 14 CFR Part 150 provides a mechanism for airport operators to undertake studies of aircraft noise that provide the public with information about existing and future noncompatible land uses around airports. A noncompatible land use is a land use exposed to aircraft noise in excess of the thresholds established in 14 CFR Part 150 (see Section A150.101 in Appendix A to 14 CFR Part 150). Airports that choose to conduct a Part 150 Noise Study do so voluntarily with the goal of improving compatibility between the airport and the surrounding communities.

Part 150 studies typically consist of two primary components: (1) the Noise Exposure Map (NEM) Report, which contains detailed information regarding existing and 5-year future airport/aircraft noise exposure patterns, and (2) the Noise Compatibility Program (NCP), which includes descriptions and an evaluation of noise abatement and noise mitigation options/programs applicable to an airport. However, the San Antonio Airport System is not performing a NCP analysis at this time.

As the owner and operator of the San Antonio International Airport (SAT or the Airport), the City of San Antonio (the City) is currently conducting a Part 150 NEM Update Study, which kicked-off in January 2020 and is expected to be completed by August 2021.

How can I get involved?

14 CFR Part 150 encourages the participation of a variety of interested parties, including the FAA, land use agencies, and members of the local community. All members of the public are encouraged to participate by attending public workshops and providing written comments. The Project Website will be updated with information on the Part 150 Study when it becomes available and periodic newsletters will be posted summarizing project progress.

Why aren't these public workshops being conducted in-person?

Per 14 CFR Part 150 regulations, public workshops are to be conducted in an in-person fashion. Unfortunately, the COVID-19 pandemic has drastically changed how we all live and work, and airport projects haven't been spared from this, either. As such, the City elected to conduct these workshops in a virtual environment, where residents will be safe and still have the opportunity to ask questions and voice their concerns. The virtual meeting approach has been approved by the FAA and has recently and successfully been used for a variety of public engagement events related to airport environmental projects across the nation.

How can I provide input?

Comments regarding the Part 150 NEM Update can be submitted online or by e-mail using the follow address: AirportNoiseHotline@sanantonio.gov. The comments should focus on the Part 150 NEM Update process, community concerns, and potential recommendations. Noise complaints should be submitted directly to the airport at (210) 361-9632 or comments can be submitted online at https://flysanantonio.com/business/sat-assistance/feedback-inquiries/#noise_inq.

Why is the City undertaking a Part 150 NEM Update?

The City is conducting this Part 150 NEM Update Study to assess noise exposure in communities surrounding the Airport. The last NEM Update was complete in 2015. Since then, the operational environment has changed, which identifies the need for an NEM Update.

Has a Part 150 Study been prepared for SAT in the past?

Yes, the City has prepared a number of NEM and NCP updates in the past. The first Part 150 Study was completed in 1990 and the most recent Study was completed in 2015. Generally, NEMs are updated every five to ten years or when changes in operational conditions warrant.

What will be produced during the Part 150 NEM Update?

The Part 150 NEM Update must be prepared in accordance with guidance provided in the 14 CFR Part 150 regulations. The NEM Update Report will include two Noise Exposure Maps for years 2021 and 2026 and will be submitted to the FAA in 2021 for review and acceptance.

Does the Part 150 NEM Update relate to the SAT Master Plan?

The Part 150 NEM Update Study is being conducted alongside the City's Strategic Development Plan (SDP) for the Airport; however, they are separate and independent efforts. The Part 150 NEM Update will be used to identify potential noncompatible land uses over a 5-year planning horizon, whereas the SDP will chart a longer-term and comprehensive path for Airport development over the course of 20 or more years.

What is DNL?

DNL, or day-night average sound level, is a function of equivalent sound level, or Leq, which is the logarithmic average of all the individual sound events occurring over a specified unit of time, expressed in A-weighted decibels. DNL is Leq measured over a 24-hour period with a 10 dB penalty applied to nighttime sound levels to account for the greater annoyance that nighttime noise (between 10 p.m. and 7 a.m.) is presumed to cause for most people. This extra weight treats one nighttime noise event as equivalent to 10 daytime events of the same magnitude.

The average annual day is used for the quantification and evaluation of airport noise and is determined by averaging operations over a 24-hour period for 365 days. DNL applied on the basis of an average annual day is the required metric specified in 14 CFR Part 150 to be used for noise compatibility planning and provides the basis for land use compatibility guidelines.

It is important to note that DNL is a measurement of cumulative noise (over the course of a year); therefore, DNL values are not equivalent to noise measurements made for a single aircraft overflight event.

How is noise exposure determined?

The FAA has developed the Aviation Environmental Design Tool (AEDT) for evaluating aircraft noise exposure in the vicinity of airports. The most recent version of AEDT was released by FAA in 2020 (version 3c). The AEDT uses a database of aircraft noise characteristics to predict DNL based on user input on the types and number of aircraft operations, operating conditions, stage length (i.e., distance flown), aircraft performance, and aircraft flight patterns, while also considering local terrain.

What is the difference between modeled versus measured noise?

Modeled aircraft noise is the result of a computerized process that uses a federally-prescribed software program to calculate noise exposure from multiple aircraft over a wide, geographic area. Modeling also allows for determining future noise exposure conditions based on changes in aircraft fleet, activity levels or runway use. Measured noise includes individual aircraft noise events measured at a single point in time using noise monitoring equipment placed at specific locations.

It is important to note that Part 150 regulations require the use of the FAA-approved noise model (AEDT) to generate the noise contours used to develop the 2021 and 2026 Noise Exposure Maps.

What forecast data is being used?

This Part 150 Study requires the use of 2021 forecasted numbers to use in the AEDT to determine the 2021 Existing Conditions Noise Exposure Map. However, because the COVID-19 pandemic has seriously disrupted global aviation, there is tremendous uncertainty over current and future aircraft operations at SAT and across the U.S. In consultation with the FAA, the City is using the last reliable and full years' worth of operating data, which is calendar year 2019. The 2026 activity levels are based on the approved SDP forecast for 2024, reflecting the near-term anticipated effects of COVID-19 on activity levels at the Airport.

What affects noise exposure?

Engine noise and airframe noise are specific sources of noise at an airport. Noise exposure takes into consideration the diverse range of noise levels that depend on the type of engine used by aircraft, the size of aircraft, and whether an aircraft is taxiing on the airfield, landing or taking off. Furthermore, aircraft noise exposure is determined by the number of aircraft operations, airport operating conditions, aircraft performance, and flight patterns, while also considering local terrain.

What is a noncompatible land use?

A noncompatible land use means that the sound exposure that a given use receives is normally not compatible because the DNL is above the annoyance thresholds, as defined by the FAA in

Part 150, Appendix A, Table 1. All land uses are deemed by the FAA to be compatible with aircraft noise if they are outside the DNL 65 contour.

What are the stakeholders' roles and responsibilities?

Federal Aviation Administration

The FAA has the primary role to ensure safe and efficient use of the National Airspace System by directing aircraft while in flight. It also approves flight procedures and certifies aircraft pilots and engines—both of which impact noise in your area.

Local Governments

The local governments have the responsibility to provide for land use planning, zoning, and housing regulations that limit land use near airports to those compatible with airport operations.

Aviation Department

The City of San Antonio, as the owner/operator of the Airport, has very limited authority in adopting noise restrictions. The City is primarily responsible for the development and maintenance of infrastructure to support safe and efficient airport operations.

What are some of the noise model inputs being used for this study?

There are a number of inputs being used to develop the noise contours for this Part 150 Study, including the number of aircraft operations, the flight paths of arriving and departing aircraft, runway usage, and environmental conditions, such as temperature and barometric pressure. All noise model inputs are documented in detail in the Draft NEM Update Report, which is currently available for download at the Airport's Noise Office website. These inputs come from a variety of sources, including historical operational data, air traffic control records, and default values provided by the noise model itself. All model inputs have been carefully reviewed for reasonableness and accuracy. For example, the noise model assumes a barometric pressure value of 29.15 inches of Hg at the Airport. This number is in very close alignment with other sources of historical weather data. The website www.wunderground.com, which provides historical weather records for thousands of locations across the country, shows that San Antonio's 10-year average barometric pressure is 29.102 inches of Hg, which is within 99.8% of the default noise model value.

How can I tell if my house will be eligible for acoustical treatment?

Based on the findings presented in Chapter 5 of the Draft NEM Update Report, it does not appear that any new properties will be eligible for acoustical treatment. According to Table 5-4, 968 homes were identified as being located within the 2026 Future Conditions DNL 65 contour. However, 701 of these homes were previously treated through the Airport's Residential Acoustical Treatment Program, which was successfully completed in 2020, and the remaining 267 homes were previously deemed ineligible to receive acoustical treatment, primarily because of either the date of home construction or the owner declined to participate. No additional (new) homes have been identified to be located inside the DNL 65 contour.