

## **Aircraft Noise & Noise Monitoring**

### **1. Q: If I live north or south of the new runway, why am I hearing aircraft noise?**

**FAA Response:** There are many variables that would increase the noise levels around your home, depending on the aircraft fleet mix, your home's proximity to the new runway's flight path, weather, altitude, and other factors. A typical noise "footprint" for any individual aircraft utilizing O'Hare airfield covers an area on the ground between 5 and 45 square miles, depending on the specific aircraft.

### **2. Q: What is a noise contour?**

**FAA Response:** Noise contours depict levels of aircraft noise surrounding an airport. The FAA analyzed noise impacts for the OMP in the EIS using established aviation industry methods. The noise contour developed for the OMP for build-out conditions is called the Build-Out Noise Contour. The noise contour is used for land use compatibility and noise exposure and mitigation purposes. The Build-Out Noise Contour was approved on September 30, 2005, as part of the Record of Decision.

### **3. Q: What is the 65 DNL?**

**FAA Response:** As FAA's primary metric for aviation noise analysis, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of the day-night average sound level (DNL) in decibels (dB). The 65 DNL is the Federal significance threshold for aircraft noise exposure.

### **4. Q: Who decided that 65 db was the right threshold?**

**FAA Response:** Day-Night Average Sound Level (DNL) is a 24-hour equivalent sound level. DNL is expressed as an average noise level on the basis of annual aircraft operations for a calendar year. To calculate the DNL at a specific location, Sound Exposure Levels (SELs) (the total sound energy of a single sound event) for that particular location are determined for each aircraft operation (landing or takeoff). The SEL for each operation is then adjusted to reflect the duration of the operation and arrive at a "partial" DNL for the operation. The partial DNLs are then added logarithmically— with the appropriate penalty for those operations occurring during the nighttime hours— to determine total noise exposure levels for the average day of the year.

DNL has been widely accepted as the best available method to describe aircraft noise exposure and is the noise descriptor required by the FAA for use in aircraft noise exposure analyses and noise compatibility planning. The DNL has also been identified by the U.S. Environmental Protection Agency (USEPA) as the principal metric for airport noise analysis.

As directed by the U.S. Congress in the Aviation Safety and Noise Abatement Act (ASNA) of 1979, the FAA and other branches of the federal government have established guidelines for noise compatibility based on annoyance. FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, Appendix A, paragraph 14.3, page A-61 ([http://www.faa.gov/documentLibrary/media/order/energy\\_orders/1050-1E.pdf](http://www.faa.gov/documentLibrary/media/order/energy_orders/1050-1E.pdf)), defines the threshold of significance for noise impacts as follows. "A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe."

**5. Q: Is there a permanent noise monitor located around O'Hare to capture noise events?**

**FAA Response:** Since 1996 the City has utilized the Airport Noise Management System (ANMS) to monitor the amount of noise being generated over the communities surrounding O'Hare by the aircraft operating at the airport. The ANMS collects, analyzes, and processes data from a number of sources of information including a network of 30 noise monitors near O'Hare, FAA radar data, weather data, and telephone calls to the City's noise hotline. On average, over 120,000 flights and 400,000 noise events are recorded by the ANMS each month for the Chicago Airport System.

**6. Q: Who said the FAA model was correct? What modeling technology was used?**

**FAA Response:** The FAA's Integrated Noise Model (INM) produces DNL noise contours. INM is a computer model used to develop aircraft noise exposure maps. INM is the industry standard for calculating the level of aircraft noise at and around airports. INM uses a database of aircraft noise characteristics to predict DNL based on user input on the types and number of aircraft operations, annual average airport operating conditions, average aircraft performance, and aircraft flight patterns.

**7. Q: What happens when a call is made to the O'Hare Noise hotline?**

**FAA Response:** The City of Chicago advised the FAA that the caller is transferred to the City's 311 operator service. The City can provide more information on this process.

**8. Q: What types of corrections were made to reduce the noise from runway 22R on the north side of Park Ridge?**

**FAA Response:** In reference to the "noise from runway 22R," Runway 4L/22R has continued to be used since the new runway opened and will continue to be used. With the existing airport layout, it is planned to be used as an arrival runway (Runway 22R) as part of a configuration that is anticipated to be used approximately 10% of the year. It is also planned to be used as a departure runway (Runway 4L) as part of a configuration that is anticipated to be used

approximately 23% of the year. The effect of the change in use of Runway 22R can be seen in the change in shape of the noise contours over time presented on pages 5.1-8, 5.1-16, 5.1-25, 5.1-38, and 5.1-55 (<ftp://public-ftp.aql.faa.gov/ORD%20FEIS/Section%205.1.pdf>).

**9. Q: How do I get a noise monitor placed at my house?**

**FAA Response:** Contact the City of Chicago at (773) 686-3563.

**10. Q: I took readings in my back yard with a decibel meter that registered levels in the 70s, 80s, and 90s. How can the 65 DNL contour be correct when my house is located outside of it and I am getting such high readings?**

**FAA Response:** Your readings of 70+ decibels are not the same as the DNL.

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**11. Q: How many homes/people would be affected with or without the O’Hare Modernization?**

**FAA Response:** See pages 5.2-13 and 5.2-16 of Section 5.2 (<ftp://public-ftp.aql.faa.gov/ORD%20FEIS/Section%205.2.pdf> ). At the time of Build Out (the city currently estimates Build Out to be in 2014) with the O’Hare Modernization there is estimated to be a total of 6,754 total housing units and 19,577 people within the 65 DNL noise contour. Without the O’Hare Modernization it is estimated that there would be 5,199 total housing units and 14,512 people within the No Action 65 DNL noise contour at the time of Build Out.

**12. Q: Where can I find the projected contour map for Build Out?**

**FAA Response:** Page 5.1-38 of Section 5.1 (<ftp://public-ftp.aql.faa.gov/ORD%20FEIS/Section%205.1.pdf>) depicts the Build Out noise contour evaluated in the EIS.