



# WESTERN SYDNEY Fact Sheet



## Measuring aircraft noise at Western Sydney International Airport

In Australia, exposure to aircraft noise at major airports is measured using a number of tools that include the Australian Noise Exposure Concept (ANEC), Australian Noise Exposure Forecast (ANEF), the Number Above 'N' measure and the maximum noise level (LAmax) single event noise measure.

These tools are used to inform land-use planning around an airport site and assessing the effects of aircraft noise.

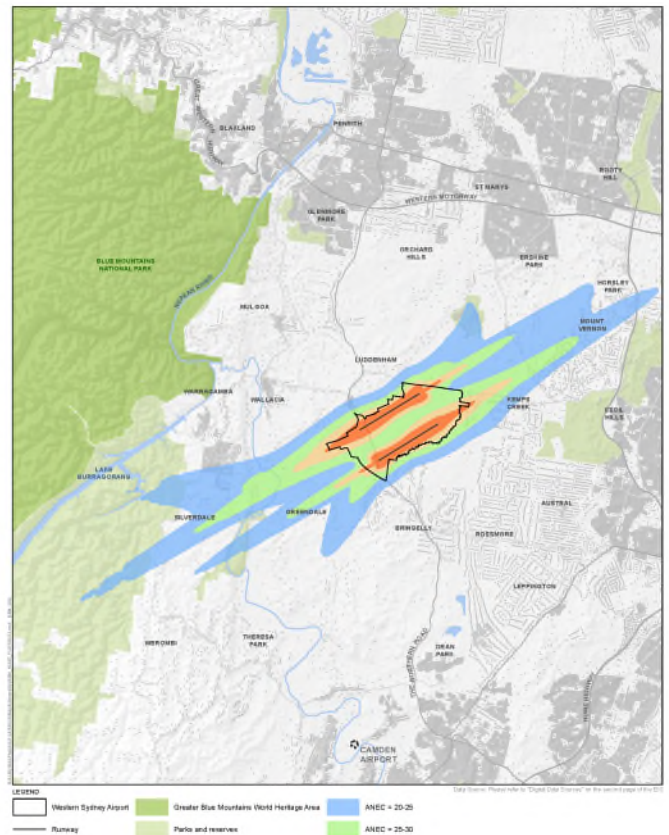
### Australian Noise Exposure Concept

The most effective way of protecting communities from aircraft noise is appropriate land-use planning to prevent new residential development in areas where aircraft noise will be highest. Planning controls that limit the amount of noise-sensitive development in the areas closest to the new Western Sydney airport have been in place for nearly three decades.

An ANEC for the airport was generated based on the runway direction and indicative flight paths for take-offs and landings. An ANEC is a cumulative noise measure which illustrates aircraft noise exposure based on various operational scenarios.

Charts or maps are produced showing expected noise exposure levels from an average day's anticipated aircraft movements, calculated over a twelve-month period.

The coloured areas shown on the map are noise exposure contours, displayed in representative units of 20, 25, 30 and 35+. The higher the contour numbers, the higher the levels of noise exposure. These units are not decibel measurements, they are representative units generated from a noise model which builds in aircraft types and performance, points of origin and destination, noise level and pitch, and the number and time of movements.



Combined ANEC for the 05 and 23 operating modes for long-term airport operations

## Australian Noise Exposure Forecast

An ANEF chart is a more refined ANEC, generated based on the final approved flight path design. ANEF noise contours are formally endorsed for technical accuracy and practical operational application by Airservices Australia (the government air navigation services provider). ANEFs are published for all federally leased airports.

An ANEF chart shows a forecast of aircraft noise levels based on approved flight paths. Homeowners with properties outside of the ANEF zones may still experience aircraft noise. Other noise exposure measures, such as those outlined below, have been developed so residents can better understand forecast noise levels.

## Number above ('N') and Single event or Maximum noise level (LAmax)

In order to assist in understanding the effects of aircraft noise, additional measures are generated to illustrate aircraft noise exposure at certain locations.

The 'Number Above measure' is based on the intensity and frequency of individual aircraft noise events experienced on an average day, and is intended to convey information in a way that communities may understand better than ANEF charts. This measure is presented in decibels and indicates how many aircraft noise events are predicted to exceed a particular decibel level each day. For example, the N60 or N70 measures show the number of aircraft noise events above 60 or 70 decibels that would be experienced on an average day.

In addition the LAmax measure shows the average (mean) of the maximum noise levels predicted at a location, during a series of flyovers by specific aircraft.

## Flight path design and further noise assessment for the airport

The *Environmental Impact Statement 2016* (EIS) for Western Sydney International (Nancy-Bird Walton) Airport used a combination of the ANEC, Number Above and LAmax measures to describe the level of noise exposure predicted for indicative flight paths for the airport.

Final flight paths will be subject to further environmental assessment and community consultation. The process to finalise the flight paths will seek to further reduce aircraft overflights of residential areas and minimise noise impacts on communities and noise-sensitive areas.

An ANEF for Western Sydney International will be available once the flight paths have been finalised and the environmental assessment has been approved.

### Noise modelling tool

A noise modelling tool is available at [www.westernsydneyairport.gov.au](http://www.westernsydneyairport.gov.au). This tool presents the findings of the noise assessment on a map for the 2016 EIS, showing predicted noise levels at particular locations in Western Sydney. This tool will be updated to reflect the proposed final flight paths.