

January - December 2023 Noise Contours

Fact Sheet

Melbourne Airport received submissions during Master Plan 2022 and Melbourne Airport's Third Runway Major Development Plan public exhibition asking for noise contours that reflect current operations. We have prepared noise contours reflecting operations at Melbourne Airport for each month in response.

Each report contains a summary of the aircraft movements (including movements by the time of day, aircraft type and runway) and n-above contours for that month. Noise and Flight Path Monitoring System (NFPMS) data was acquired from Airservices and used to prepare each analysis.

Analysis involved aircraft noise modeling utilising the latest Aviation Environmental Design Tool (AEDT). We also calibrated the aircraft noise model as an integral part of best practice modeling that greatly improves the model's ability to accurately represent aircraft noise levels. Calibration was completed using NFPMS data.

Total aircraft
movements



235,603

Movements by time of day

This section indicates the number of movements during different times of the day. We've split this into morning: 6am - 1pm, afternoon: 1pm - 5pm, evening: 5pm - 11pm, and night - 11pm - 6am to show how movements are distributed across time periods when people are working, resting or sleeping.

Yearly average movements are shown, as well as maximum and minimum movements.

January - December 2023 movements
by time of day:

The **AVERAGE** movements
in the evening period was **195**

The **MAXIMUM** movements
in the night period was **94**

The **MINIMUM** movements
in the morning period was **189**

	All Hours	Morning 6am - 1pm	Afternoon 1pm - 5pm	Evening 5pm - 11pm	Night 11pm - 6am
Average daily	645	258	137	195	56
Daily max	763	296	164	239	94
Daily min	493	189	100	107	22

Movements by aircraft group

Different aircraft types operate at Melbourne Airport and service different routes. They have different runway length requirements, have different fuel emissions and ultimately, noise footprints.

Aircraft types are grouped into four categories, based on size and engine type.

Wide-body jets are very large aircraft with two cabin aisles and long-range capability. This group includes Airbus A380 and Boeing 777 that typically operate international routes. Some wide-body jets (such as the Airbus A330) operate on domestic routes to Sydney and Perth.

Narrow-body jets are smaller aircraft with one cabin aisle. This group includes Airbus A320 and Boeing 737, that usually operate domestic routes but can also travel as far as New Zealand and Bali.

Turboprops are turbine engine propeller aircraft such as the Dash-8 and Saab 340. These aircraft normally operate on domestic routes with a shorter range such as Mildura, Mount Gambier, Devonport and Launceston.

Other represents aircraft covering business jets, general aviation, ad hoc services and military operations.

Numbers provided are for the year 2023.

For example, in **2023**:

38,547 of the movements or **16.4%** were **wide-body jets**

178,649 of the movements or **75.8%** were **narrow-body jets**

17,368 of the movements or **7.4%** were **turboprop aircraft**

1,039 of the movements or **0.4%** were **other aircraft**

Wide-body jets

(A380, B747, A350, B777, A330, B787, B767)

Narrow-body jets

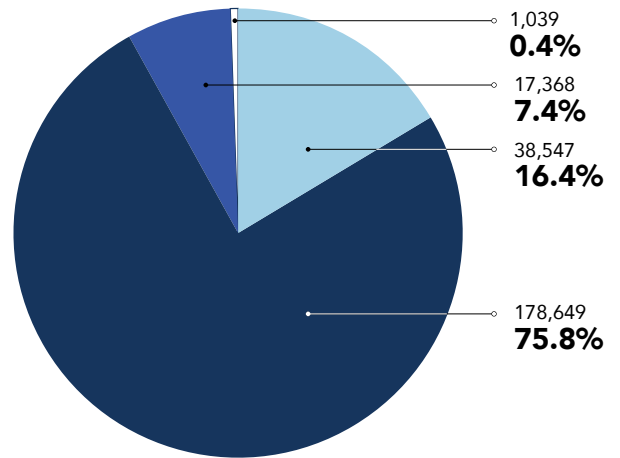
(A321, A320, B737, B712, E190)

Turboprops

(Dash-8 Q400, Saab 340 Metroliner)

Other

(Business jets, general aviation, military)



Movements by runway

Air traffic control consider a range of factors when deciding which runway to use. These include volume and type of aircraft operating at the airport, length of runway(s) available and required, and weather conditions (both present and forecast).

Wherever possible, aircraft should depart and arrive 'into' the wind. Where the wind does not require a nominated runway end, Airservices preferred runway use is as per the Noise Abatement Procedures (NAPS).

This means that if wind conditions, operational requirements, workload and traffic conditions allow, a particular runway will be used to move traffic as efficiently as possible while reducing the noise impact over residential areas.

Further information can be found on Airservices' website: www.airservicesaustralia.com/about-us/about-our-operations/runway-selection

The use of each runway for arrivals and departures is shown for the year 2023.

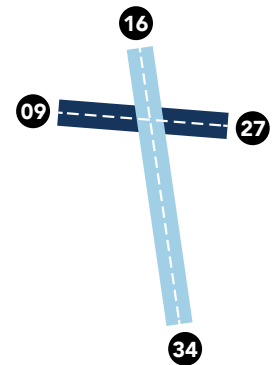
For example, in **2023**:

25.1% of all arrivals landed on **Runway 27 (from the east)**

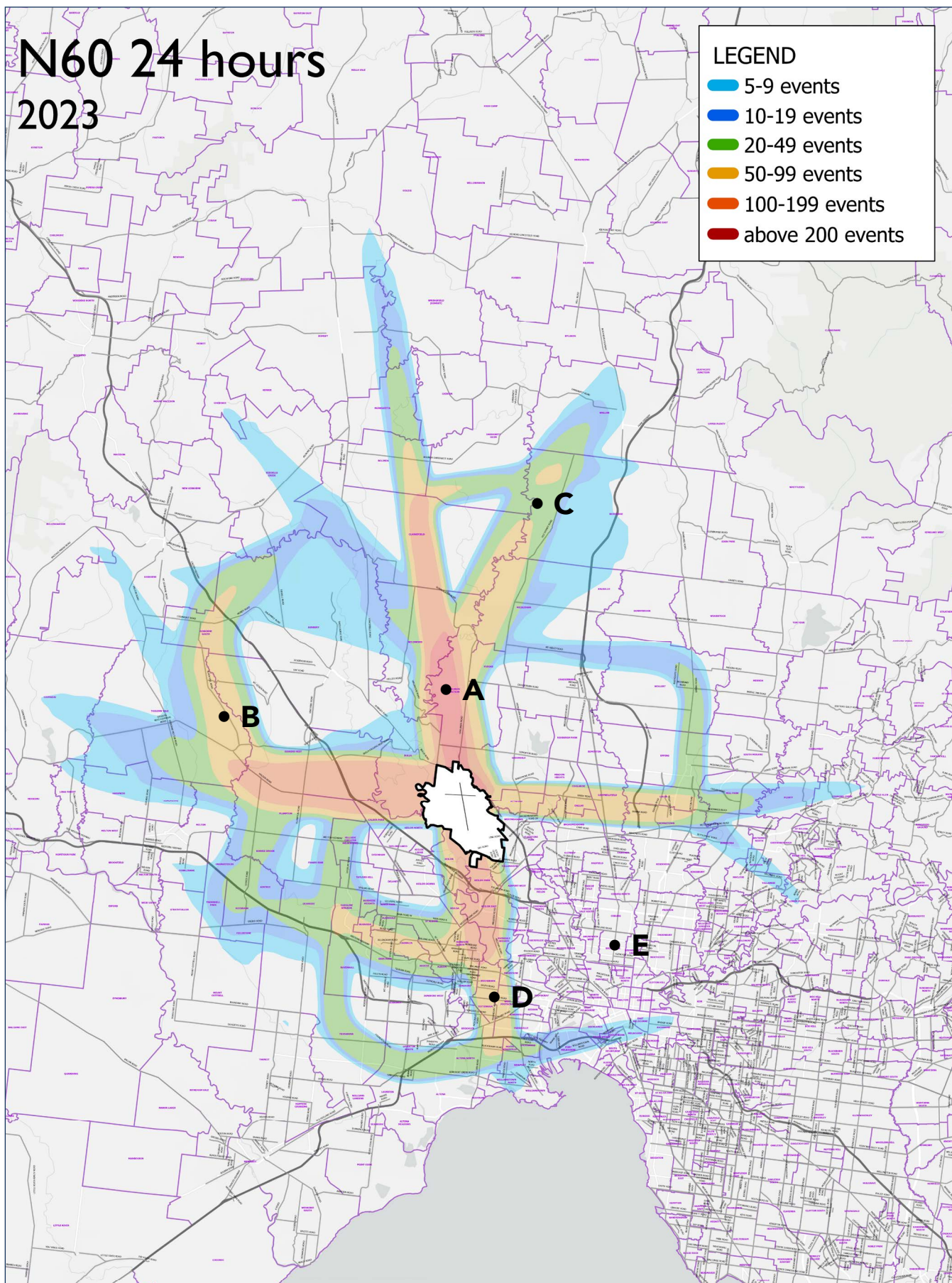
72.6% of all arrivals landed on **Runway 16/34**

23.1% of all departures took-off **Runway 16 (to the south)**

44.0% of all departures took-off **Runway 09/27**



Arrivals		Departures	
Runway 16	46.7%	Runway 16	23.1%
Runway 34	25.9%	Runway 34	32.9%
Runway 09	2.3%	Runway 09	0.7%
Runway 27	25.1%	Runway 27	43.3%
Runway 16/34	72.6%	Runway 16/34	56.0%
Runway 09/27	27.4%	Runway 09/27	44.0%



What is an N-above contour?

One way to describe aircraft-noise impacts is by the number of noise events that exceed a certain level. These metrics are referred to as 'N-above' (as in number above) contour levels.

The N-above system of describing aircraft noise was developed through industry and community consultation by what was then called the Department of Infrastructure, Regional Development and Cities (Commonwealth).

It aims to provide information in a form that is better understood by the public. It does this by providing a description of aircraft noise exposure at a given location and time period.

The National Airports Safeguarding Framework (NASF) Guideline A: Measure for Managing Impacts of Aircraft Noise, recommends the use of N-contours for strategic planning purposes.

What is N60 24 hours?

The **N60** contour level shows the number of events at or above 60dB(A).

N60 24 hours provides the number of events at or above 60dB(A) over a 24-hour period.

N60 24hr contours are recommended within the NASF Guideline A. The Guideline includes reference to the greater than or equal to 100 events for the N60 24 hours contour for strategic planning purposes. The contours presented in this booklet include contours down to 5 events.

The contours shown on the previous page highlight the extent of the operations at Melbourne Airport during **January - December 2023** with respect to the N60 24 hour contours.

For example, on average in January - December 2023:

- **Over 200 daily events at or above 60 dB(A)** would have been experienced at **Location A**
 - **50 to 99 daily events at or above 60 dB(A)** would have been experienced at **Location B**
 - **20 to 49 daily events at or above 60 dB(A)** would have been experienced at **Location C**
 - **100 - 199 daily events at or above 60 dB(A)** would have been experienced at **Location D**
 - **Less than 5 daily events at or above 60 dB(A)** would have been experienced at **Location E**
-

What is N60 Night?

N60 Night provides the number of events at or above 60dB(A) over the night period (11pm to 6am).

It is appropriate to consider lower noise levels at night. N60 values are most often used and typically indicate indoor noise level of 50dB(A) with windows open and 40dB(A) with windows closed. The 50dB(A) noise level is considered close to the point at which someone sleeping may be disturbed.

N60 Night contours are recommended within NASF Guideline A. The Guideline includes reference to the greater than or equal to 6 events for the N60 Night contour for strategic planning purposes. The contours presented in this booklet include contours down to 5 events.

The contours shown highlight the extent of the operations at Melbourne Airport during January - December 2023 with respect to the N60 Night contours.

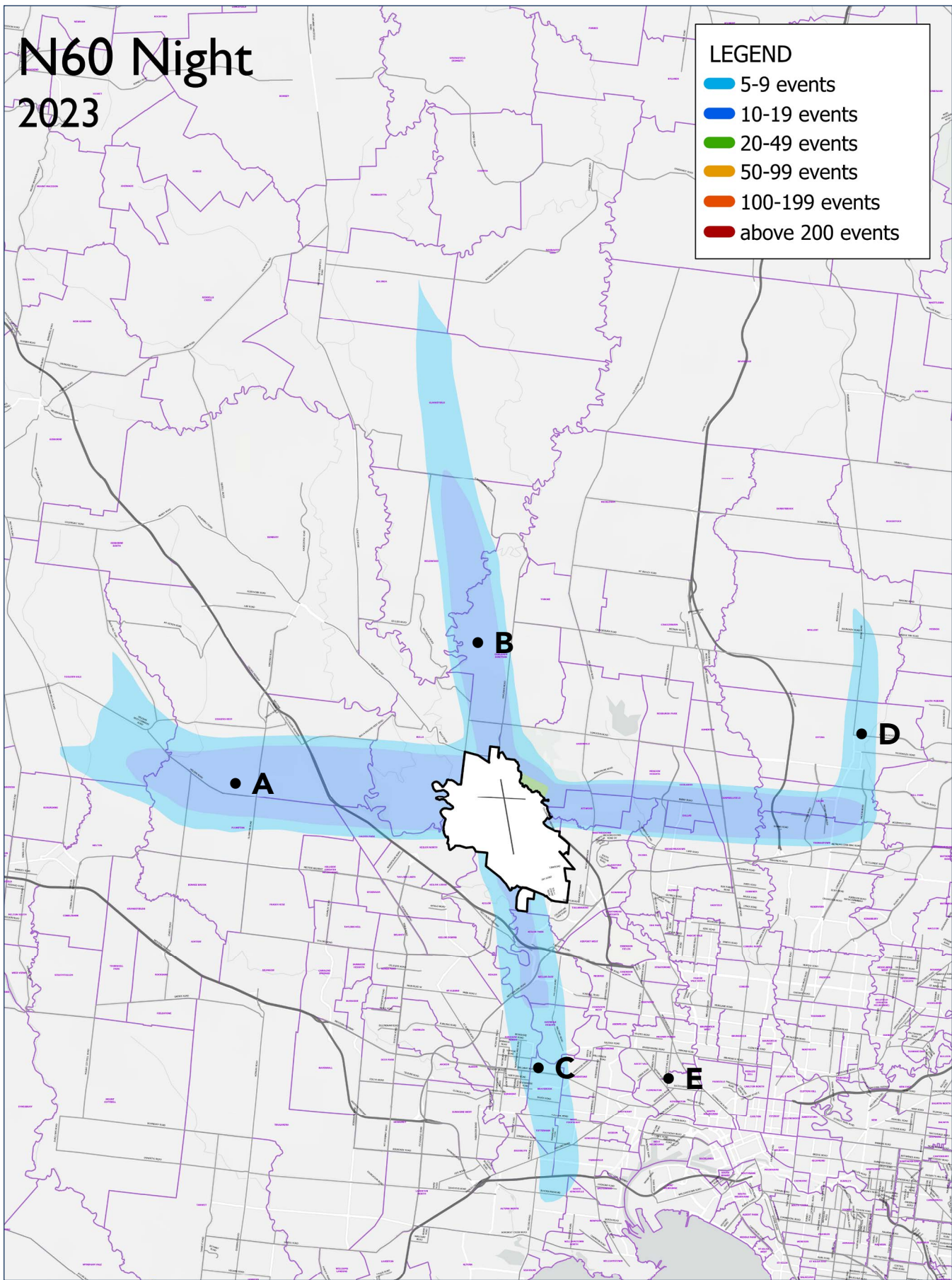
For example, on average in January - December 2023:

- **10-19 events at or above 60dB(A) during the night period (11pm - 6am)** would have been experienced at **Location A**
 - **10-19 events at or above 60dB(A) during the night period (11pm - 6am)** would have been experienced at **Location B**
 - **5-9 events at or above 60dB(A) during the night period (11pm - 6am)** would have been experienced at **Location C**
 - **5-9 events at or above 60dB(A) during the night period (11pm - 6am)** would have been experienced at **Location D**
 - **Less than 5 events at or above 60dB(A) during the night period (11pm - 6am)** would have been experienced at **Location E**
-

N60 Night 2023

LEGEND

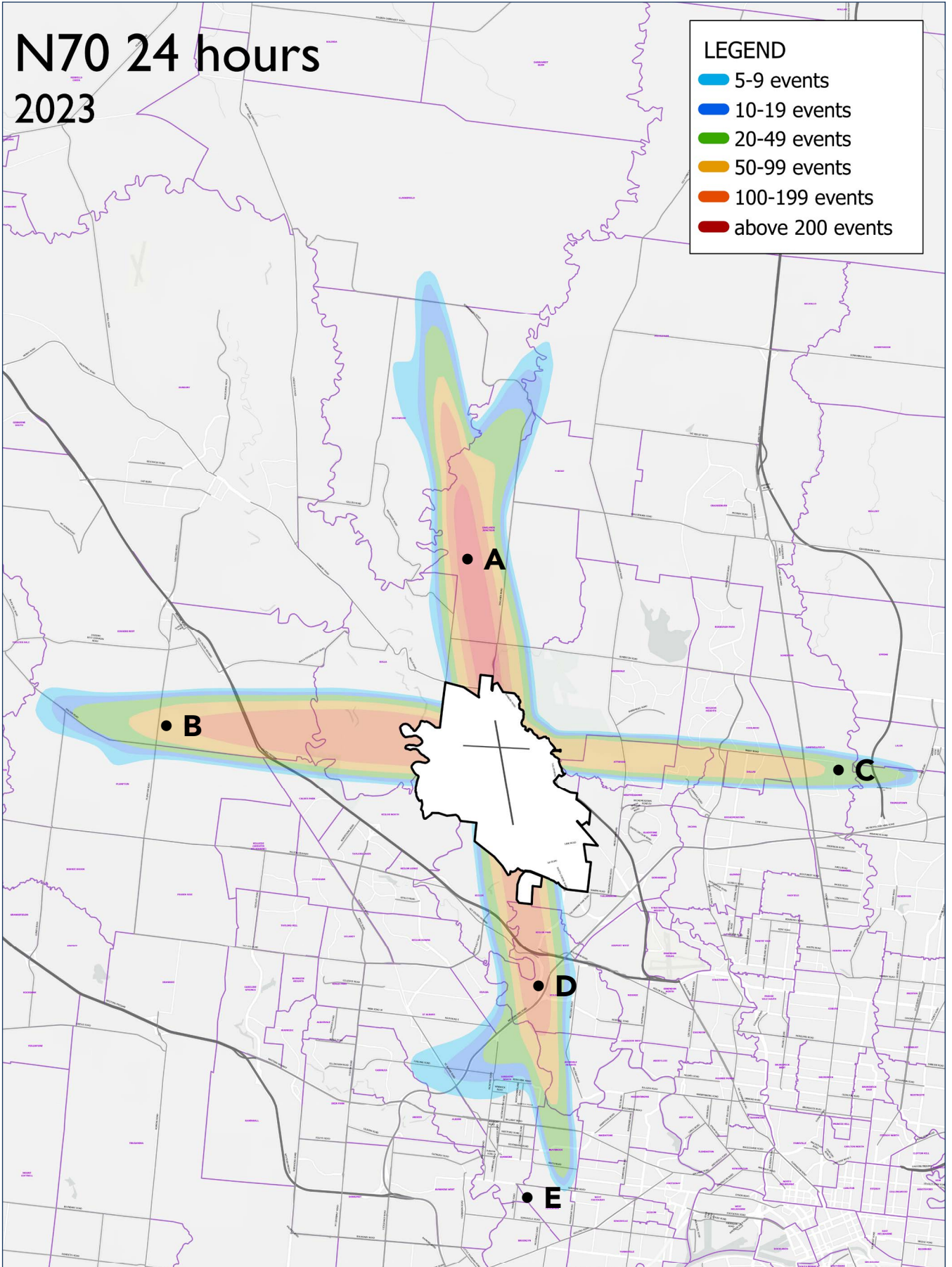
- 5-9 events
- 10-19 events
- 20-49 events
- 50-99 events
- 100-199 events
- above 200 events



N70 24 hours 2023

LEGEND

- 5-9 events
- 10-19 events
- 20-49 events
- 50-99 events
- 100-199 events
- above 200 events



What is N70 24 hours?

The **N70** contour level shows the number of events at or above 70dB(A).

N70 24 hours provides the number of events at or above 70dB(A) over a 24-hour period.

With a noise level of 70dB(A) outside a building, the noise inside will be approximately 60dB(A) with the windows open. This is enough to disturb conversation because someone speaking would generally have to raise their voice to be heard.

N70 24 hours contours are recommended within NASF Guideline A. The Guideline includes references to the greater than or equal to 20 daily events for the N70 contour for strategic planning purposes. The contours presented in this booklet include contours down to 5 events.

The contours shown highlight the extent of the operations at Melbourne Airport during January - December 2023 with respect to the N70 24 hours contours.

For example, on average in January - December 2023:

- **Over 200 daily events at or above 70dB(A)** would have been experienced at **Location A**
- **50 to 99 daily events at or above 70dB(A)** would have been experienced at **Location B**
- **20 to 49 daily events at or above 70dB(A)** would have been experienced at **Location C**
- **100 - 199 daily events at or above 70dB(A)** would have been experienced at **Location D**
- **Less than 5 daily events at or above 70dB(A)** would have been experienced at **Location E**

NOTE

- The N-above contours presented do not represent all flight paths at Melbourne Airport. Generally, published flight paths are used by aircraft flying according to Instrument Flight Rules (IFR), which is where the pilot uses instruments to fly. Helicopters and light aircraft often fly Visual Flight Rules (VFR) where the pilot uses visual references to the ground or water and does not fly on a set flight path. For further information regarding existing flight paths over your area refer to Airservices 'Aircraft In Your Neighbourhood' website.
- The information within this booklet reflects aircraft to and from Melbourne Airport only and does not include aircraft from other Victorian airports such as Essendon Fields Airport and Moorabbin Airport.
- Aircraft will still be seen and heard outside of the N-above contours. These contours should not be interpreted as representing all locations that are subject to aircraft noise.

