

Volume 6

Melbourne Airport
M3R MDP

Chapter C4

MELBOURNE AIRPORT



Chapter C4

Aircraft Noise and Vibration

Summary of key findings:

- Some residents to the north and south of Melbourne Airport's new third runway (M3R) will experience increased noise impacts during the day and evening. These impacts have been reduced as much as possible through the preliminary airspace design's prudent forecasting of airport operations.
- Operational controls have been designed to reduce noise impacts for residents, and other sensitive land uses, as much as possible.
- In 2026, when the new runway system is expected to open, M3R is forecast to significantly decrease the number of dwellings that will be exposed to night-time noise (described by N60 of five or more) - compared to not building M3R - by between approximately 15,550 and 24,795 dwellings (depending upon the airport operating mode in use).
- In 2026, when the new runway system is expected to open, between approximately 5,040 and 8,560 dwellings are predicted to be newly affected by aircraft noise (described by N70 day and evening of five or more).
- The predicted noise impacts are consistent with the noise contours included in the current 2022 Master Plan.
- Meteorological conditions influence which runways are used, operating modes (how departures and arrivals are allocated to runways), and the extent of noise impacts and noise contours. This is examined in this chapter's assessment, and the potential variation is described within typical 'busy day' and seasonal variation noise contours, which capture peak usage of the north-south parallel runways and the existing east-west runway.



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C4.1 INTRODUCTION

This chapter presents and examines the predicted aircraft-noise exposure around Melbourne Airport when Melbourne Airport's Third Runway (M3R) will be operating. The chapter presents the findings of the detailed assessment done for Melbourne Airport by expert consultants SoundIN.

It describes the existing and future predicted noise exposure both with and without M3R (i.e. for the 'Build' and 'No Build' scenarios). The mitigation measures of the proposed airspace design are presented in **Section C4.5**, understanding of these is integral to understanding the predicted noise exposure.

The methodology used to predict aircraft noise, and the rationale for the scenarios considered, is detailed in **Chapter C3: Aircraft Noise Modelling Methodology**. An assessment of community impacts based upon the predicted metrics described in this chapter is given in **Chapter D4: Social Impact**.

C4.2 DESCRIPTION OF NOISE ENVIRONMENT WITHIN THE STUDY AREA

This section provides a broad description of the ambient noise environments in the nominal study area shown in **Figure C4.1** (see also **Chapter C3: Aircraft Noise Modelling Methodology**).

The description of the various receiving environments is useful in considering the emergence (or otherwise) of aircraft noise events above the ambient noise environment.

C4.2.1 Types of ambient noise environment

Ambient noise environments within the study area range from urban environments such as Melbourne's CBD to rural environments that are largely removed from man-made noise.

Table C4.1 presents the average background and ambient noise levels for various environments. This is useful when considering aircraft-noise levels, especially metrics such as N60 and N70 (which describe the number of events above 60 A-weighted decibel thresholds and 70 A-weighted decibel thresholds respectively).

For reference, a general description of noise levels – including typical everyday noise levels that most people have experienced – is included in **Chapter C3: Aircraft Noise Modelling Methodology**.

Table C4.1
Estimated average background and ambient noise levels for various environments¹

Description of area	Description of typical noise sources	Average background A-weighted noise level (dB(A)), $L_{A90,T}$ (indicative ambient L_{Aeq} in brackets)		
		7am to 6pm	6pm to 10pm	10pm to 7am
Areas with negligible transportation or industry ² , likely described as rural.	Natural sound such as wind in trees and wildlife.	40 (45)	35 (40)	30 (35)
Areas with low density transportation and negligible commerce or industry, likely described as rural, perhaps with rural residential areas. May be representative of quiet suburban areas with limited exposure to transportation noise.	Natural sounds, distant or occasional transportation noise.	45 (50)	40 (45)	35 (40)
Areas with medium density transportation or some commerce or industry, representative of many suburban areas.	Nearby and regular transportation noise.	50 (55)	45 (50)	40 (45)
Areas with dense transportation or some commerce or industry, representative of many urban centres.	Nearby and constant transportation noise. Possible mechanical plant noise from urban centres of industry. Generic urban 'hum'.	55 (60)	50 (55)	45 (50)
Areas with very dense transportation or in commercial districts or bordering industrial districts.	Nearby busy transportation infrastructure such as a freeway or urban rail line.	60 (65)	55 (60)	50 (55)
Areas with extremely dense transportation or within predominantly industrial districts.	Noise from adjoining busy transportation infrastructure. Industrial sources.	65 (70)	60 (65)	55 (60)

Source: SoundIN, 2020

¹ Adapted from Appendix A of Australian Standard AS 1055.2-1997 Acoustics – Description and measurement of environmental noise

² Much lower noise levels are possible in rural areas when natural sounds are low, such as periods with little wind and infrequent wildlife noise.

C4.3 EXISTING AIRCRAFT OPERATIONS AND NOISE EMISSIONS

This section presents an overview of existing aircraft operations and noise emissions at Melbourne Airport. It was modelled on data for 2019 as described in Chapter C3: Aircraft Noise Modelling Methodology.

C4.3.1 Runway usage

Figure C4.2 presents a summary of runway usage based on 2019 data for the day and evening period. It shows operations north, south, east and west of the airport. The distribution of arrivals and departures is consistent with existing Noise Abatement Procedures (NAPs) set out in *Aeronautical Information Publication – Departure and Approach Procedures (AIP-DAP)*.

C4.3.2 Flight-track density charts

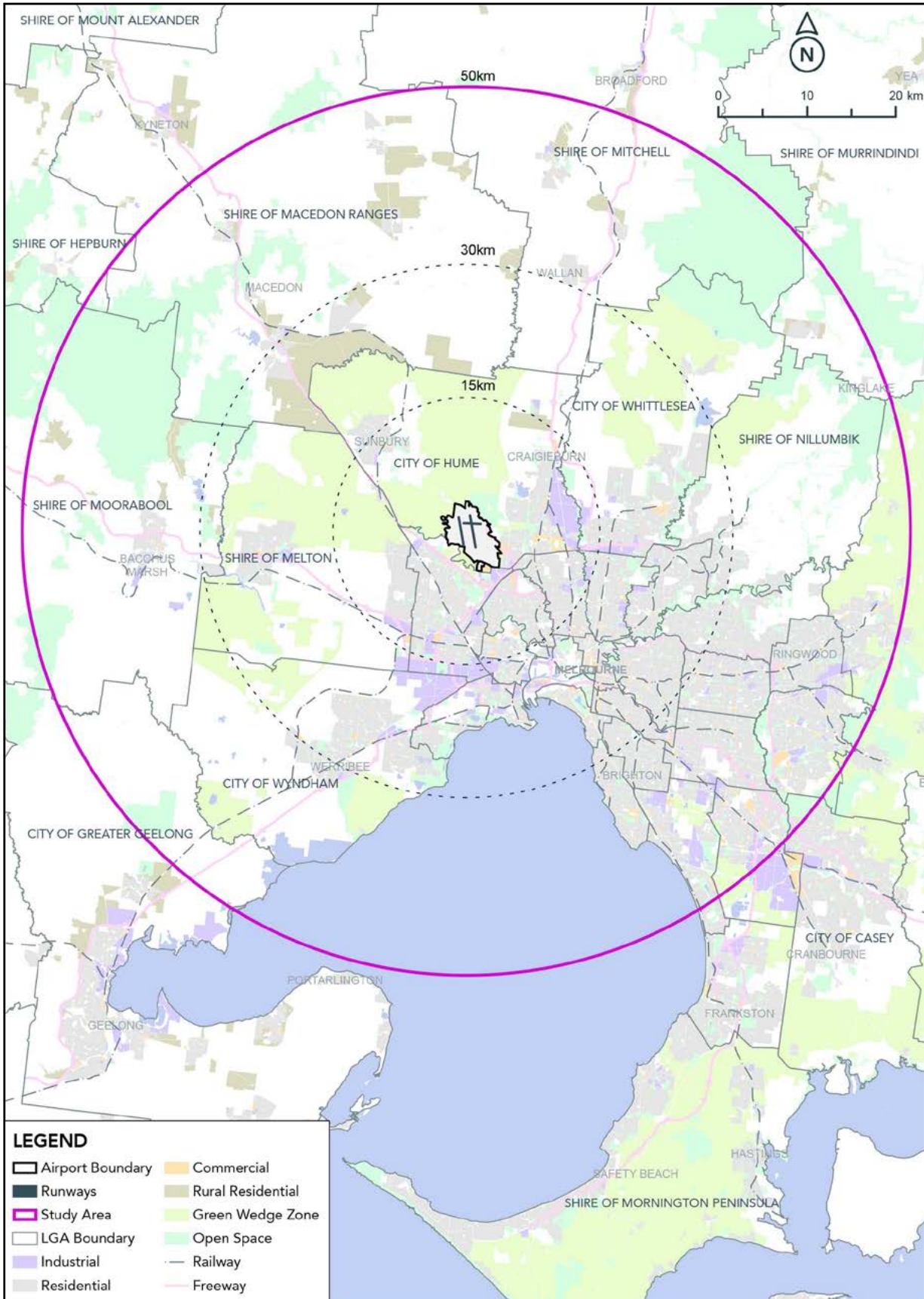
Chapter C2: Airspace Architecture and Capacity presents the flight radar data for Melbourne Airport in 2019. This shows how existing aircraft operations occur over the majority of the greater Melbourne basin.

These overflights vary in operation type, altitude, noise level and frequency. However, the data demonstrate that aircraft noise is currently experienced over much of the study area.

The flight-track density plots giving insight into those areas currently frequented by aircraft operations are from Chapter C3: Aircraft Noise Modelling Methodology as Figure C4.3 and Figure C4.4.

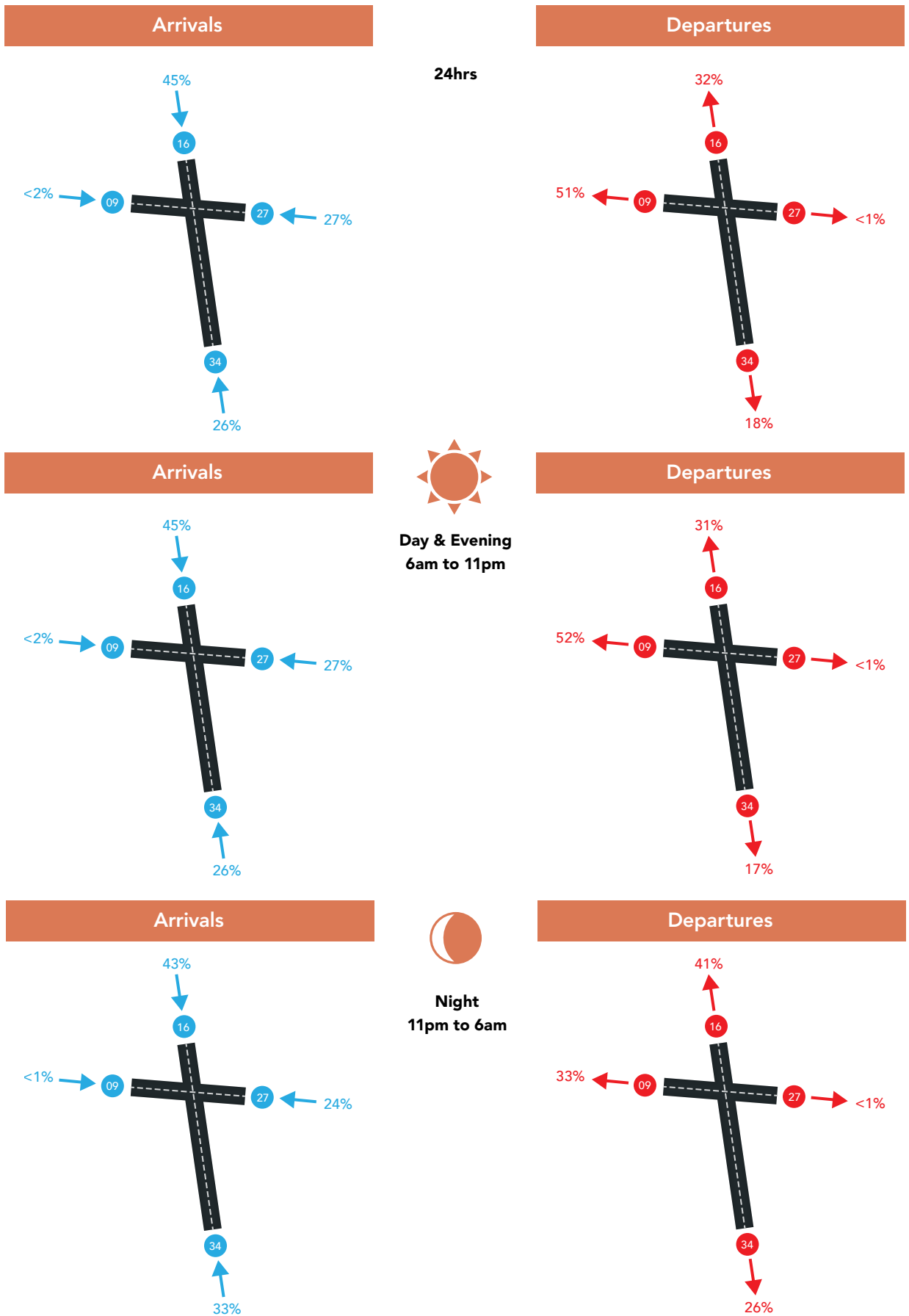
Figure C4.3 and Figure C4.4 show that – although most areas of the greater Melbourne basin are overflown at some stage as per Chapter C2: Airspace Architecture and Capacity – the majority of flights are advantageously concentrated about the published procedures (Standard Instrument Departures and Standard Instrument Arrivals, SIDs and STARs, respectively). This is typical of a busy and complex airspace such as Melbourne's.

Figure C4.1
Noise assessment study area



Source: SoundIN, 2021

Figure C4.2
Runway usage (by operation) for 2019



Source: APAM & SoundIN, 2021
Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

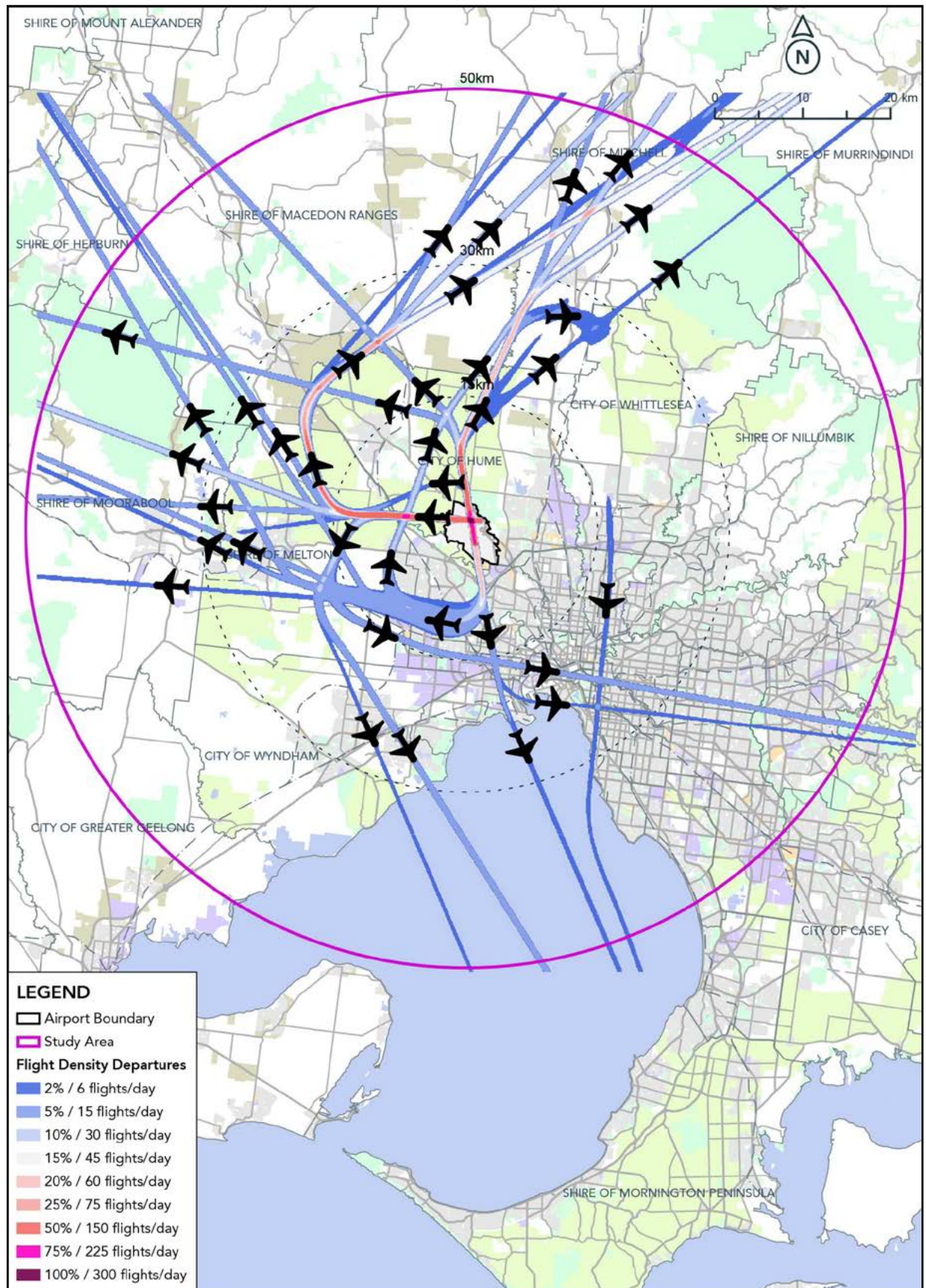
Figure C4.3
Analysis of flight density for all jet arrivals for 2019*



Source: SoundIN, 2021 (info from Airservices)

*The 2019 dataset analysed 242,462 operations. The total number of operations involving jet aircraft was 220,974. On average, 303 jet departures and 303 jet arrivals per day were included in the density analysis.

Figure C4.4
Analysis of flight density for all jet departures for 2019*



Source: SoundIN, 2021 (info from Airservices)

*The 2019 dataset analysed 242,462 operations. The total number of operations involving jet aircraft was 220,974. On average, 303 jet departures and 303 jet arrivals per day were included in the density analysis.

C4.3.3

N-above noise contours

The impact of aircraft noise can be described by the frequency within a time period that a certain noise level is exceeded. This metric is referred to as 'N-above' (short for 'number above').

N70=X refers to the number of events ('X') over a defined time period in which the 70 A-weighted decibel level is exceeded. For example, N70=5 would indicate that the 70 A-weighted decibel level was exceeded five times. When plotted on a map, the area indicating where the N-above metric was measured is known as a 'contour'. A more comprehensive explanation of this and other aircraft noise metrics is included in **Chapter C3: Aircraft Noise Modelling Methodology**.

For this assessment, N60 and N70 noise contours have been produced using 2019 data. These noise contours are the most useful in describing the aircraft noise currently attributable to Melbourne Airport. They represent the predicted annual average number of movements per day with LA_{max} noise levels exceeding the threshold (i.e. 60 or 70 A-weighted decibels).

Although N-above charts typically show an average number of events as low as 10 events a day, this report shows N-above contours for an even lower five events a day. This allows a more detailed understanding of noise impacts and is consistent with previous similar assessments in Australia. It is also more conservative than some other guidelines for communicating aircraft noise (e.g. NASF Guideline A).

N70 day and evening

Figure C4.5 presents the 2019 average day and evening N70 – 'day and evening' is the period from 6am to 11pm (see **Chapter C3: Aircraft Noise Modelling Methodology**).

The contours extend north, south, east and west of the existing runways. The prevalence of arrivals onto the north-south runway (particularly from the north to runway 16) is evident. This is due to runway length, wind patterns, the current published NAP, and the availability of the Instrument Landing System (ILS) for poor weather operations.

To the north, the N70=5 contour extends approximately 15 kilometres from the runway. This corresponds with arrivals approaching the runway on a steady, shallow glide slope (relative to most departure climb rates).

In the east-west direction, the bias toward runway 27 (i.e. departures to the west and arrivals from the east) is evident. The N70=5 contour extends approximately 15 kilometres from the runway, with N70 contours as high as 100 noise events extending 11 kilometres to the west. The N70=5 extends east to a similar extent, however, the contours are narrower, consistent with arrivals. It is noteworthy that the N70=100 contour does not extend significantly east of the airport; this indicates fewer 70 A-weighted decibels events to the east compared to other directions.

N70 24 hours

Figure C4.6 presents the historic (for 2019) average 24hr N70.

The 24hr N70 contours are very similar to the N70 day and evening contours in **Figure C4.5**. This is due to the number of operations (i.e. arrivals and departures) in the day and evening periods compared to night-time.

However these slightly larger extents are to be expected for 24hr N70, given the inclusion of night-time operations. This is most evident in the contours for runway 16/34 to the north-west, south and south-west of the airport.

N60 night

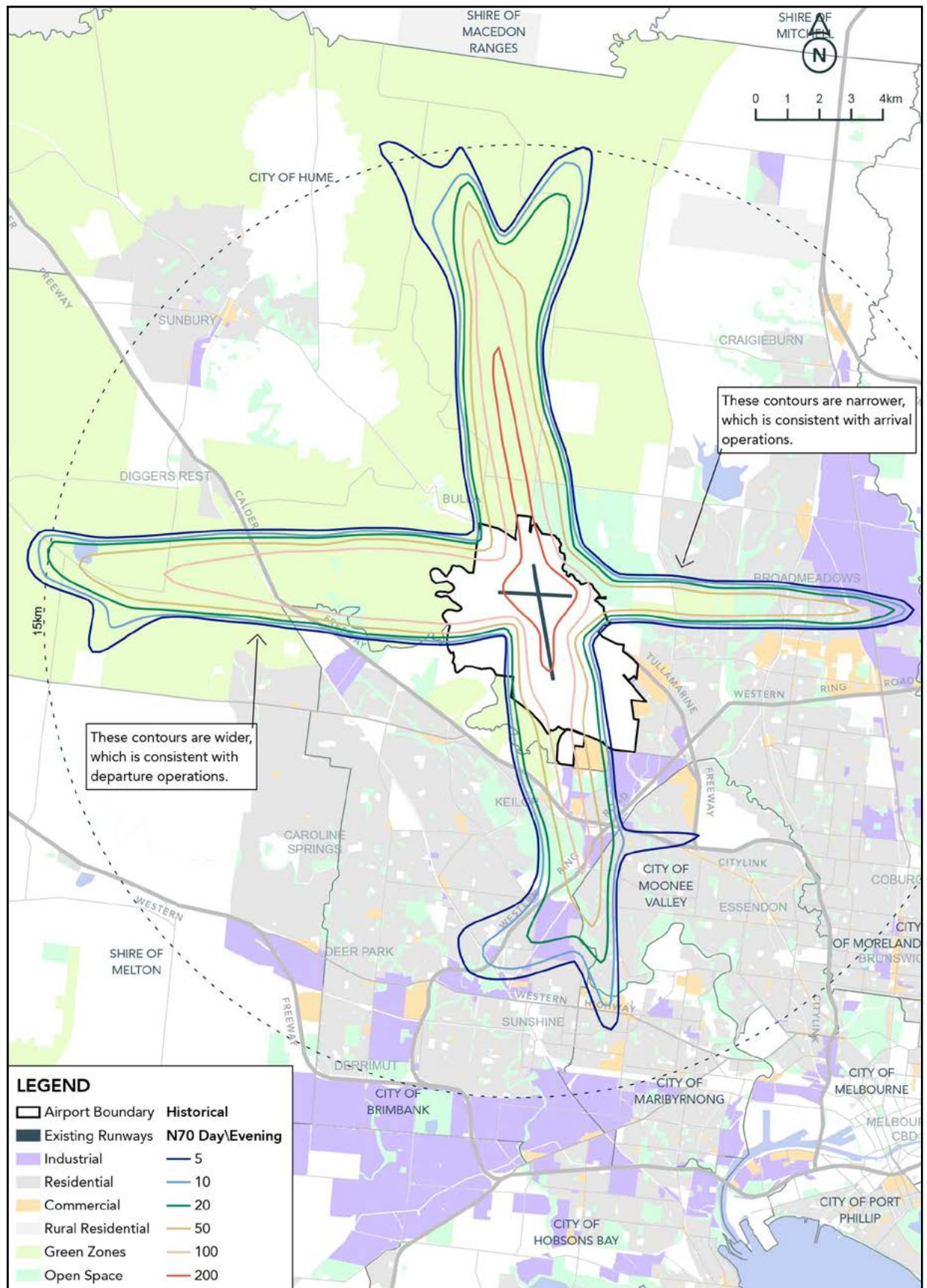
Figure C4.7 presents the 2019 average annual night N60 – 'night' being from 11pm to 6am (see **Chapter C3: Aircraft Noise Modelling Methodology**).

The night-time N-above contours generally extend along the extended runway centrelines in each direction. The most significant noise emissions are north and south of the airport, with reduced emission levels to the east and west.

N60 24 hours

Figure C4.8 presents the historic (2019) average 24hr N60.

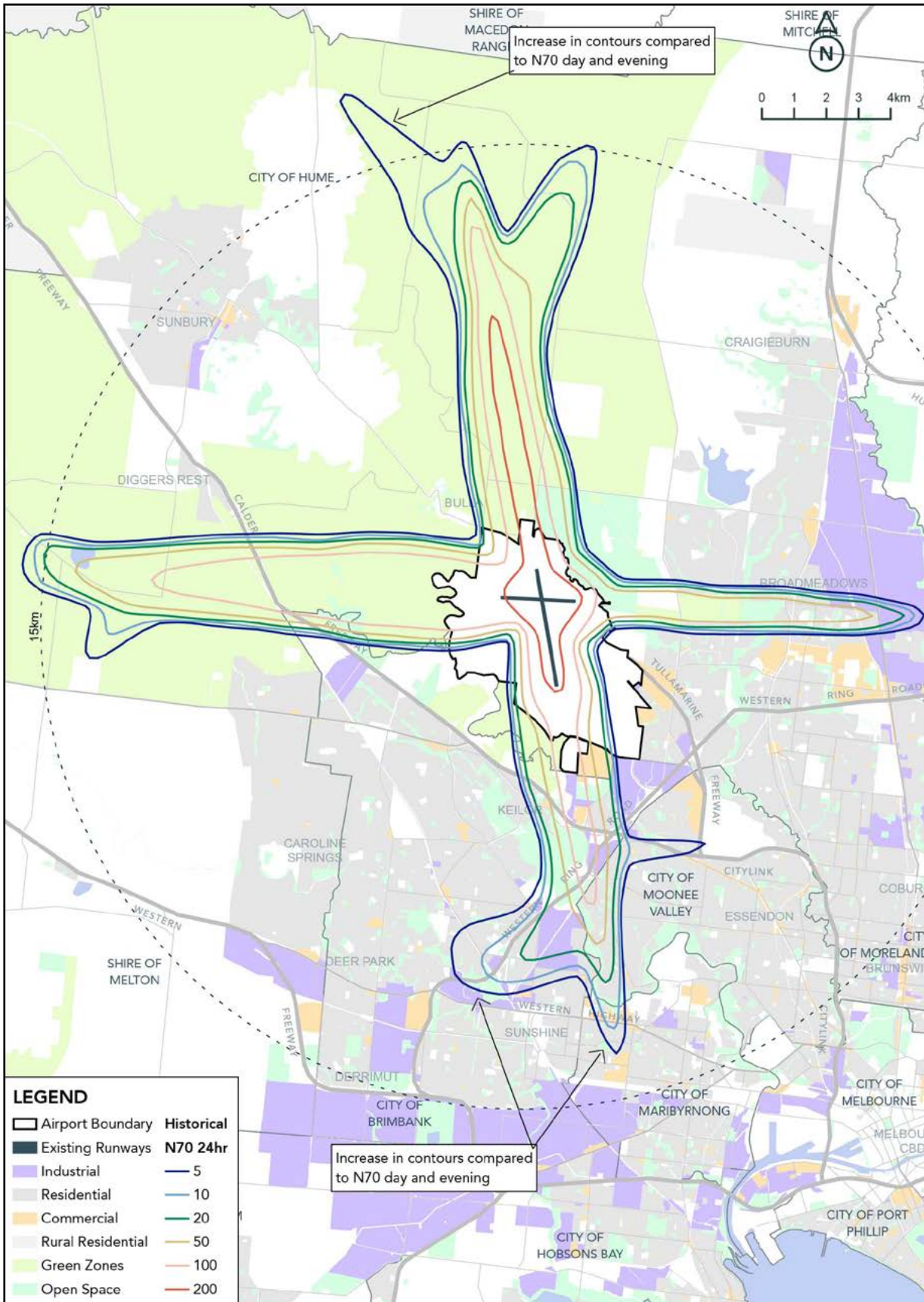
Figure C4.5
Historic 2019 - N70 average annual day and evening (6am to 11pm)



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

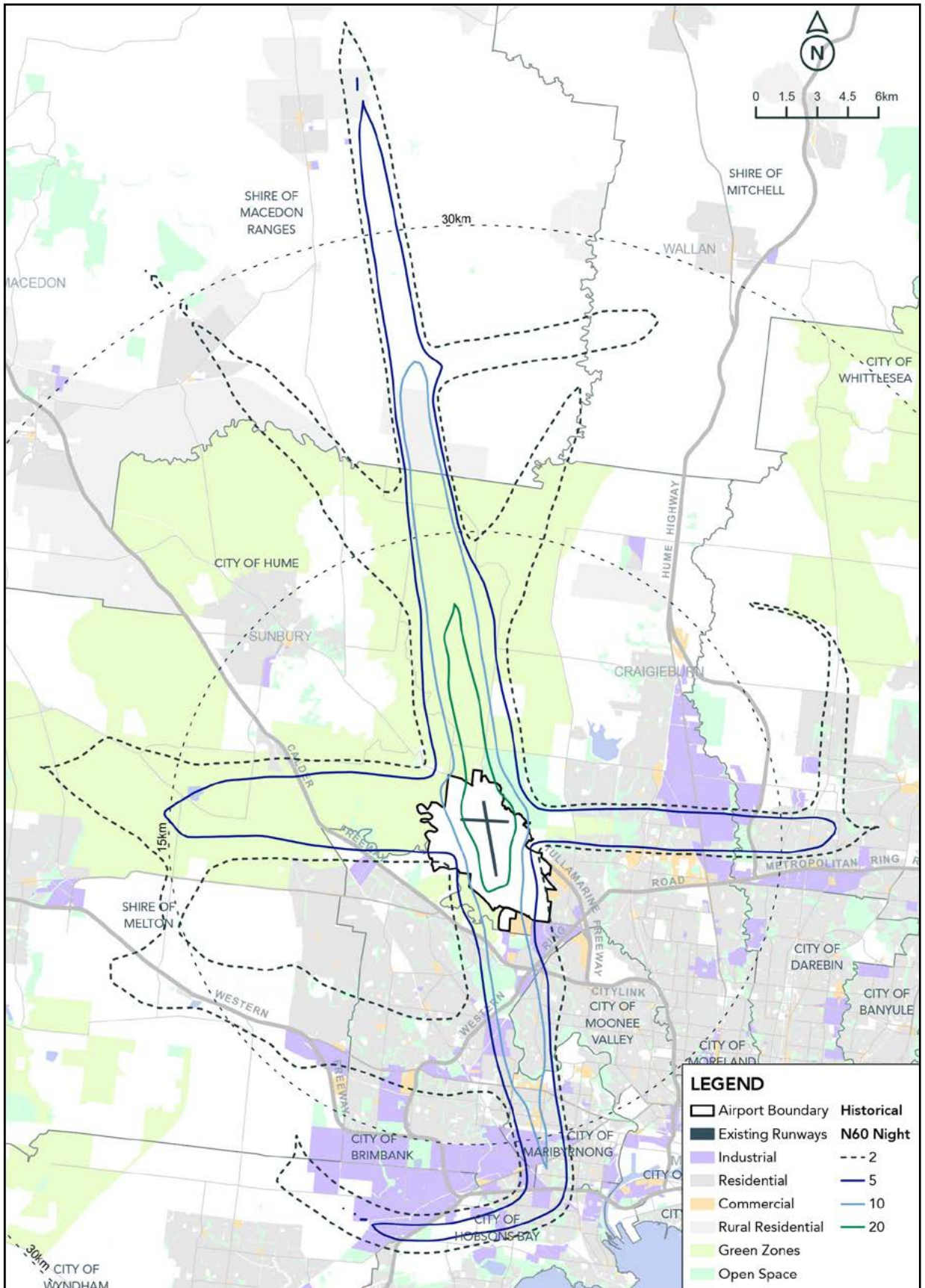
Figure C4.6
Historical (2019) N70 average annual 24hrs



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

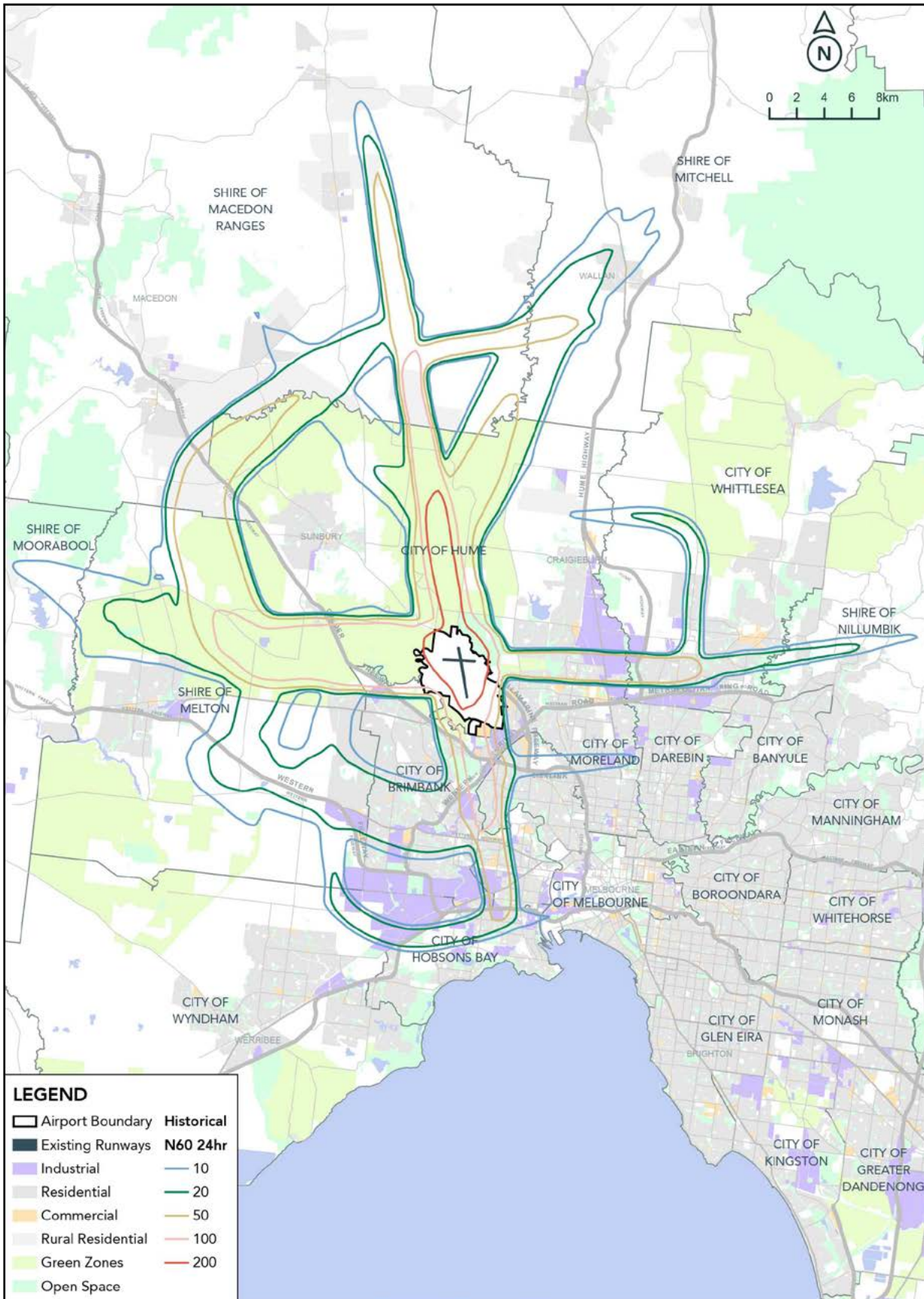
Figure C4.7
Historic (2019) N60 average annual night (11pm to 6am)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

Figure C4.8
Historical (2019) N60 average annual 24hrs



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

C4.3.4

ANEF and ANEI

The Melbourne Airport Master Plan 2022 Aircraft Noise Exposure Forecast (ANEF) chart for the airport is presented in **Figure C4.9**.

The ANEF chart features a composite of the Australian Noise Exposure Concept (ANEC) contours for the existing and proposed runways. The 'ANEF' was produced for the long-range 2052 aircraft movements with scenarios including two, three and four runways.

The Melbourne Airport Master Plan 2018 ANEF chart for the airport is presented in **Figure C4.10**. It has been superseded by the 2022 Master Plan ANEF. The 2018 Master Plan ANEF is included in this assessment for historic context regarding communication of the proposed construction of a 'hashtag' runway system.

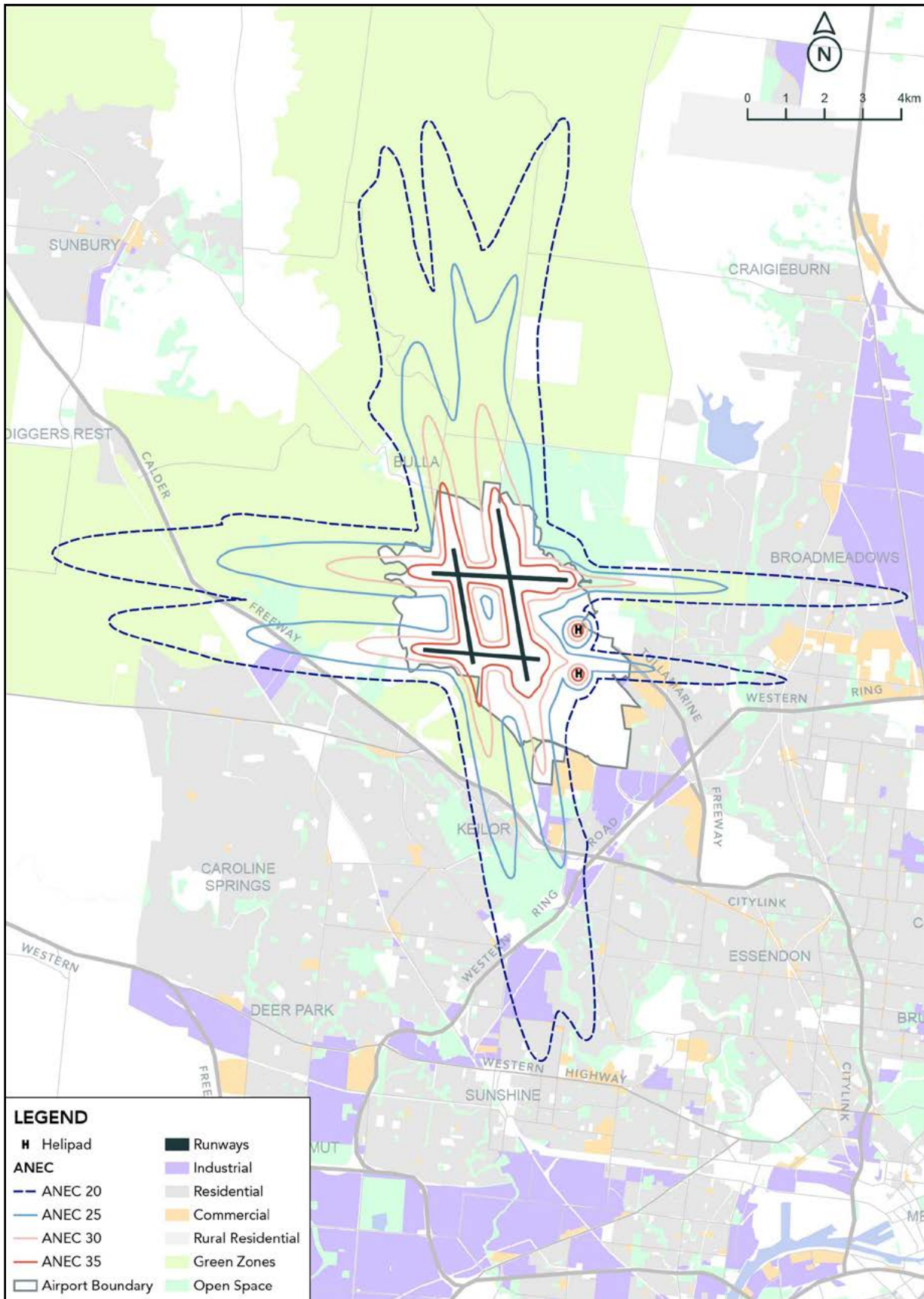
The 2019 Australian Noise Exposure Index (ANEI) produced from actual radar data for approximately 242,500 flights in 2019 is presented in **Figure C4.11**. The ANEI is calculated using the same noise metric and time weighting as an ANEF but for a previous year based on historic usage data.

Since the 2018 Master Plan, forecasts of future operations and capacity at Melbourne Airport have been updated for the 2022 Master Plan, which this M3R assessment is consistent with.

In addition to the above, several parts of the current assessment differ from the noise predictions used in developing the 2018 Master Plan, specifically:

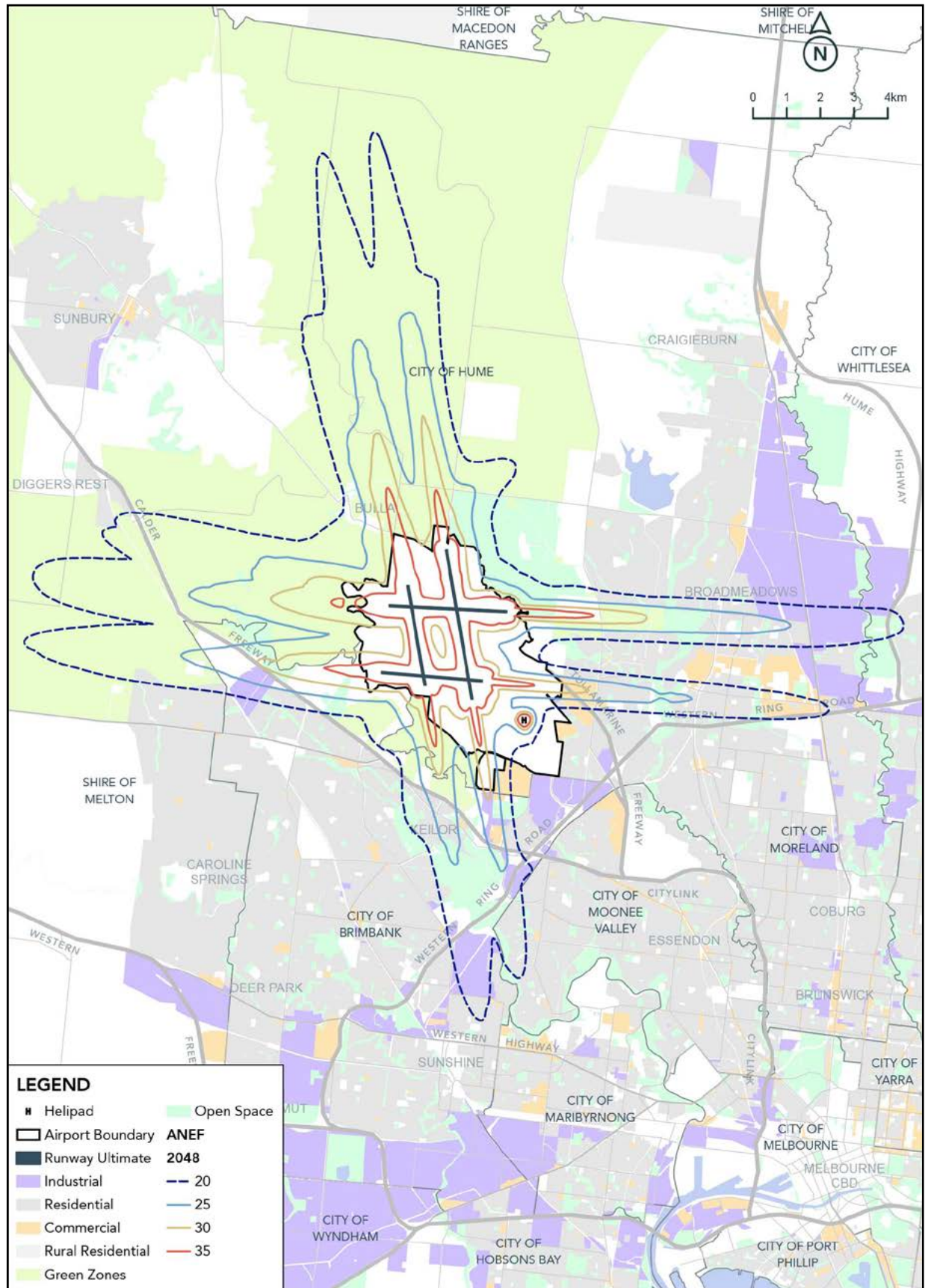
- Design development for the proposed three-runway infrastructure has been undertaken in consultation with airline customers, Airservices Australia and the Civil Aviation Safety Authority (CASA)
- Noise-modelling methodology takes advantage of new functionality in the Aviation Environment Design Tool (AEDT) compared to the previous Integrated Noise Model (INM).

Figure C4.9
2022 Master Plan ANEF – long range 2052 with four runways



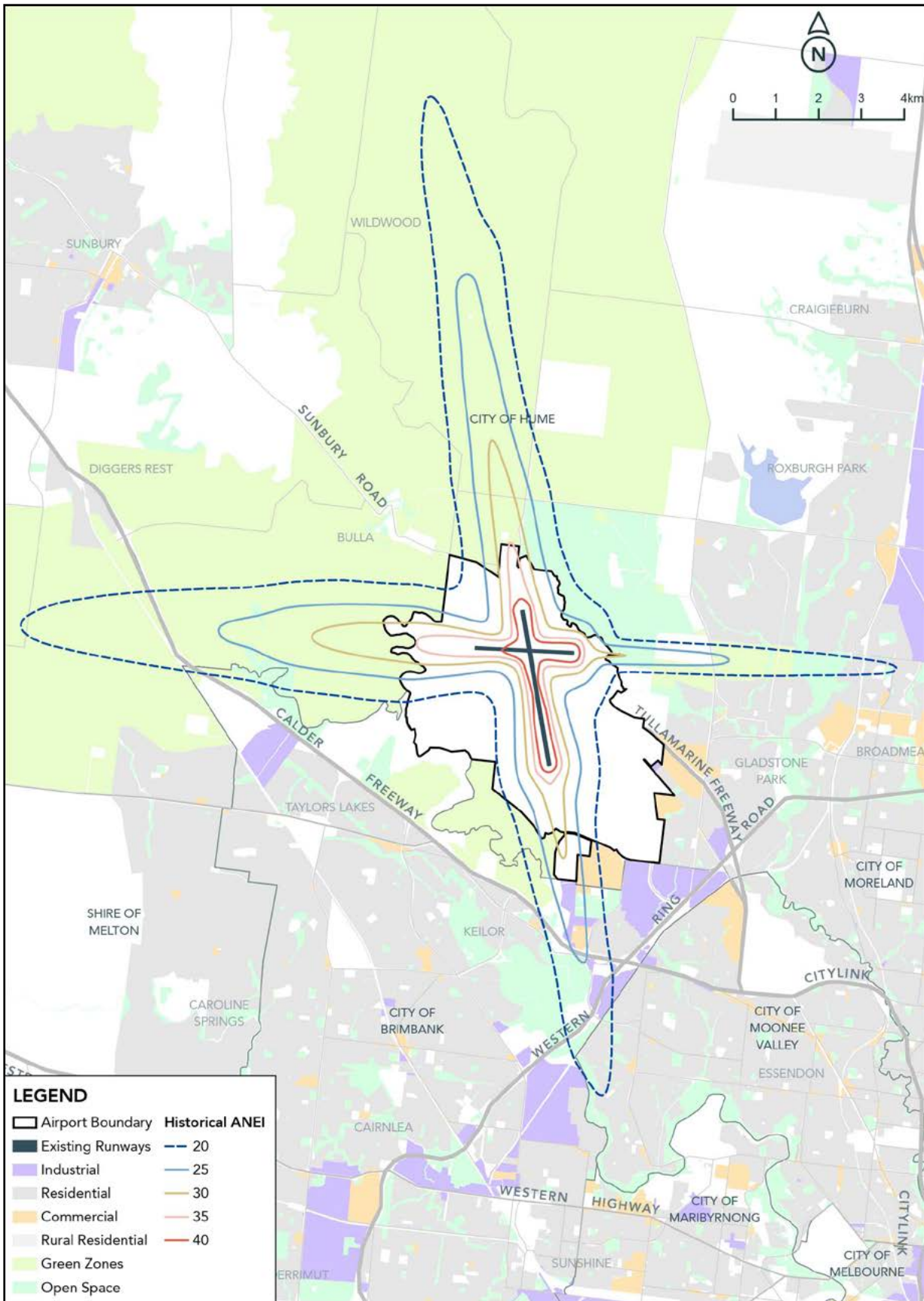
Source: SoundIN, 2020

Figure C4.10
2018 Master Plan ANEF – long range 2048 with four runways



Source: SoundIN, 2021

Figure C4.11
Historic 2019 – ANEI



Source: SoundIN, 2020

C4.4 NO BUILD AIRCRAFT OPERATIONS AND NOISE EMISSIONS

This section presents the projected aircraft operations and noise emissions at Melbourne Airport for a 'No Build' scenario (i.e. continuation of the existing two-runway infrastructure without M3R being constructed).

This scenario includes air traffic growth that could be accommodated by the existing two-runway system – although this growth is significantly capacity-constrained compared to that which would be facilitated by the Build scenario.

C4.4.1

Runway usage

Figure C4.12 presents a summary of predicted runway usage in 2046 for the No Build scenario. It shows the predicted runway usage during the whole day (24hrs), day and evening (6am to 11pm) and night (11pm to 6am).

The data demonstrates the continued existing yet limited use of runway 09 for departures. However, it is noted that the movement distribution would be different from 2019. This is partly required by the forecast additional operations that require greater use of high-capacity modes. Noise impacts would potentially be increased because the availability of lower capacity noise abatement modes would be reduced.

C4.4.2

N-above noise contours

N60 and N70 noise contours were produced for the No Build scenario (see Chapter C3: Aircraft Noise Modelling Methodology for an explanation of aircraft noise metrics).

Predictions were made for each nominal assessment year: 2026, 2031 and 2046 (but only 2026 and 2046 are presented here, for reasons described in Chapter C3: Aircraft Noise Modelling Methodology).

N70 day & evening

Figure C4.13 presents the 2026 N70 No Build average day and evening period (6am to 11pm). It reflects existing and forecast runway usage, with significant noise emissions north and south of the airport along the extended existing north-south runway (16/34) centreline.

The continued prevalence of arrivals onto runway 16 (southerly direction) is evident in the contours.

To the north, the N70=5 contour extends approximately 15.5 kilometres from the runway. This corresponds to the significant proportion of arrivals approaching runway 16. The shallow glide slope of arriving aircraft (relative to most departure climb rates) means their noise footprint extends further from the airport than many departure operations. To the south, the N70=5 contour extends 11 kilometres from the runway.

The N70 reflects the strong bias towards departures off the existing east-west runway in a westerly direction (runway 27, see Figure C4.13). The N70=5 contour extends approximately 15.5 kilometres from the runway, with N70 contours as high as 200 events extending 7.5 kilometres to the west.

Due to roughly a third of arrivals using the existing east-west runway in a westerly direction (runway 27) the extent of the N70=5 contour to the east is large (approximately 12.2 kilometres from the runway). However, the number of operations is less than runway 16 arrivals or runway 27 departures; consequently, the higher N70 contours (200 and above) do not extend east of the airport.

Typical 'busy day' N-above contours present the 90th percentile values of N60 and N70 calculated over all days. These percentile N-above values are designated $NX_{(90)}70$ and $NX_{(90)}60$. (A description of typical busy day N-above metrics is provided in Chapter C3: Aircraft Noise Modelling Methodology).

The typical busy day N70 five contour ($NX_{(90)}70=5$) in Figure C4.13 is similar to the annual average N70=5 contour extent, particularly around the east-west runway flight paths. However, notable differences relate to use of the existing north-south runway (16/34). These include runway 34 departure tracks north-west of Sunbury and east of Diggers Rest; and runway 16 departures heading south and turning west approximately 10 kilometres from the airport. The difference between the $NX_{(90)}70$ and N70 indicates that more than five 70 A-weighted decibels events are anticipated on typical busy days in these areas – however, on average fewer than five of these events are expected.

Figure C4.13 and Figure C4.14 present the No Build average day and evening N70 for 2026 and 2046 respectively. The extents of their N70=5 contours are similar because they are ultimately determined by the noise footprint of the louder aircraft.

The forecast aircraft fleet renewal is most evident in the remaining N70 contours. This means that, despite the forecast increase in the number of operations, the increased proportion of newer, quieter aircraft would result in similar predicted noise contours – with some contours forecast to decrease.

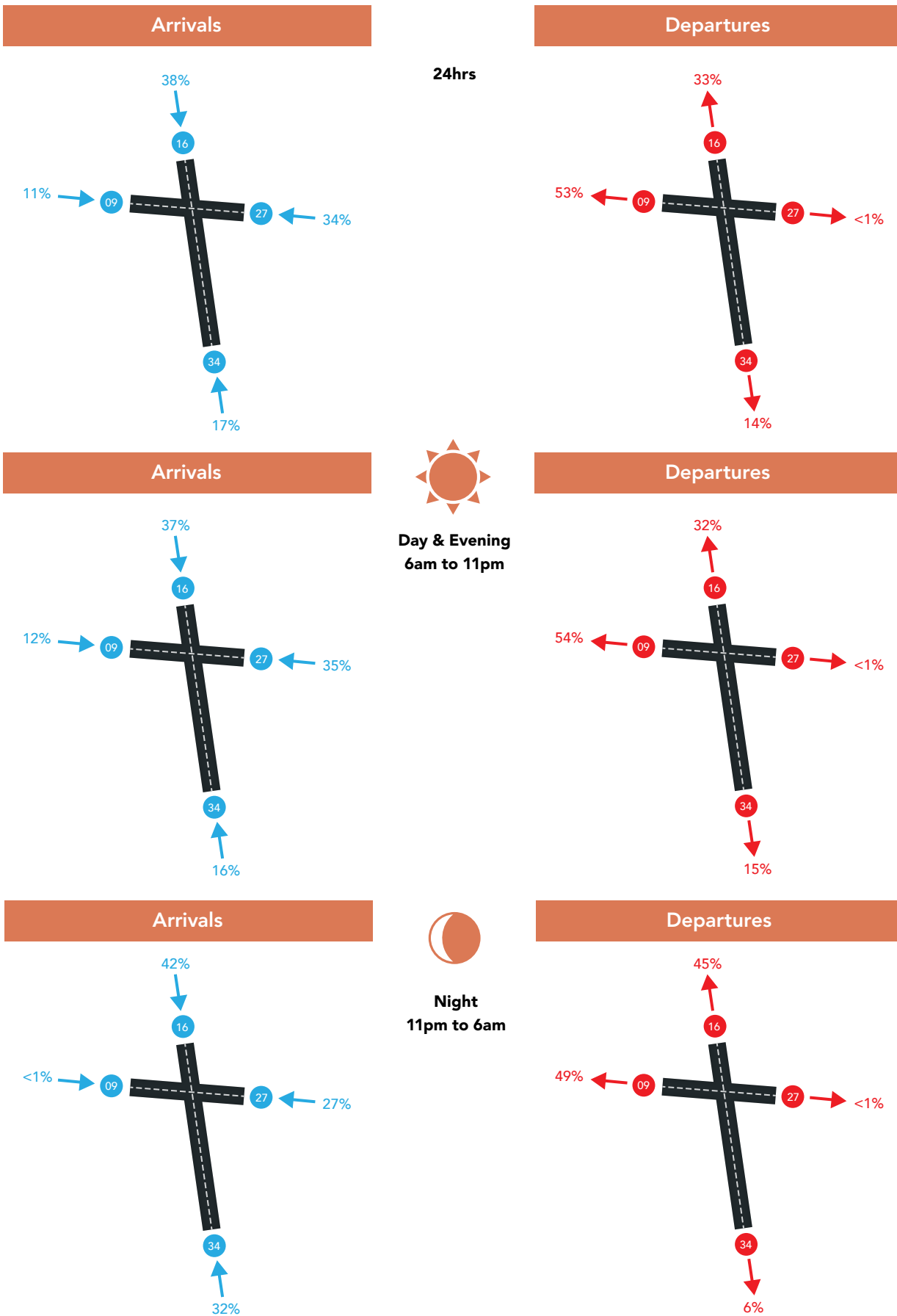
N70 24 hours

Figure C4.15 and Figure C4.16 present the No Build 24hr N70 for 2026 and 2046

The 24hr N70 contours are very similar to the N70 day and evening contours in Figure C4.13 and Figure C4.14 owing to the relative number of operations in the day and evening periods than night time.

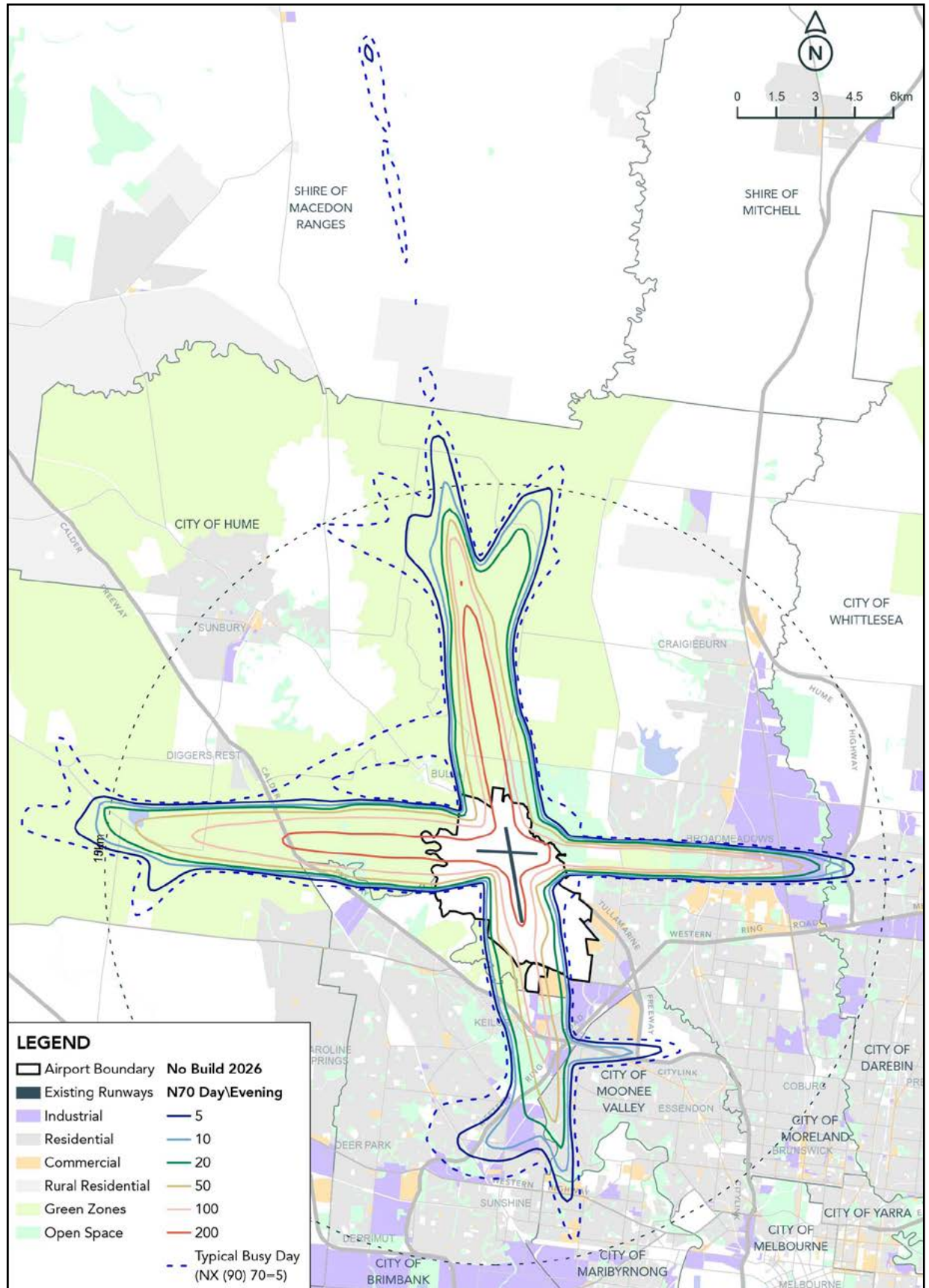
The slightly larger extent of the 24hour N70 is to be expected given the inclusion of night-time operations. This is most evident in the contours to the north, south and west of the airport, though the differences are marginal.

Figure C4.12
No Build 2046 – Runway usage (by operation)



Source: APAM & SoundIN, 2020
 Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

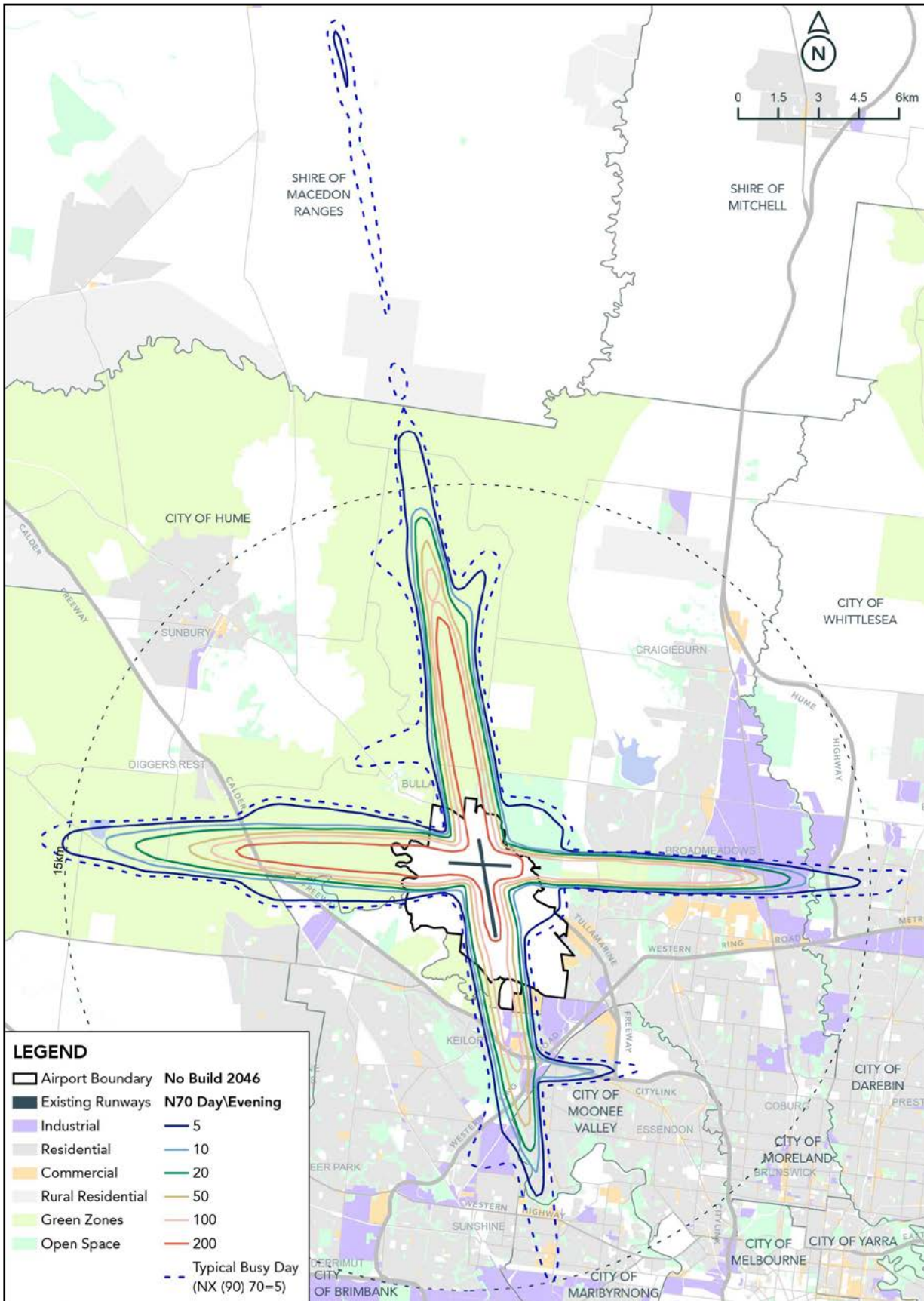
Figure C4.13
No Build 2026 – N70 annual day and evening (6am to 11pm)



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

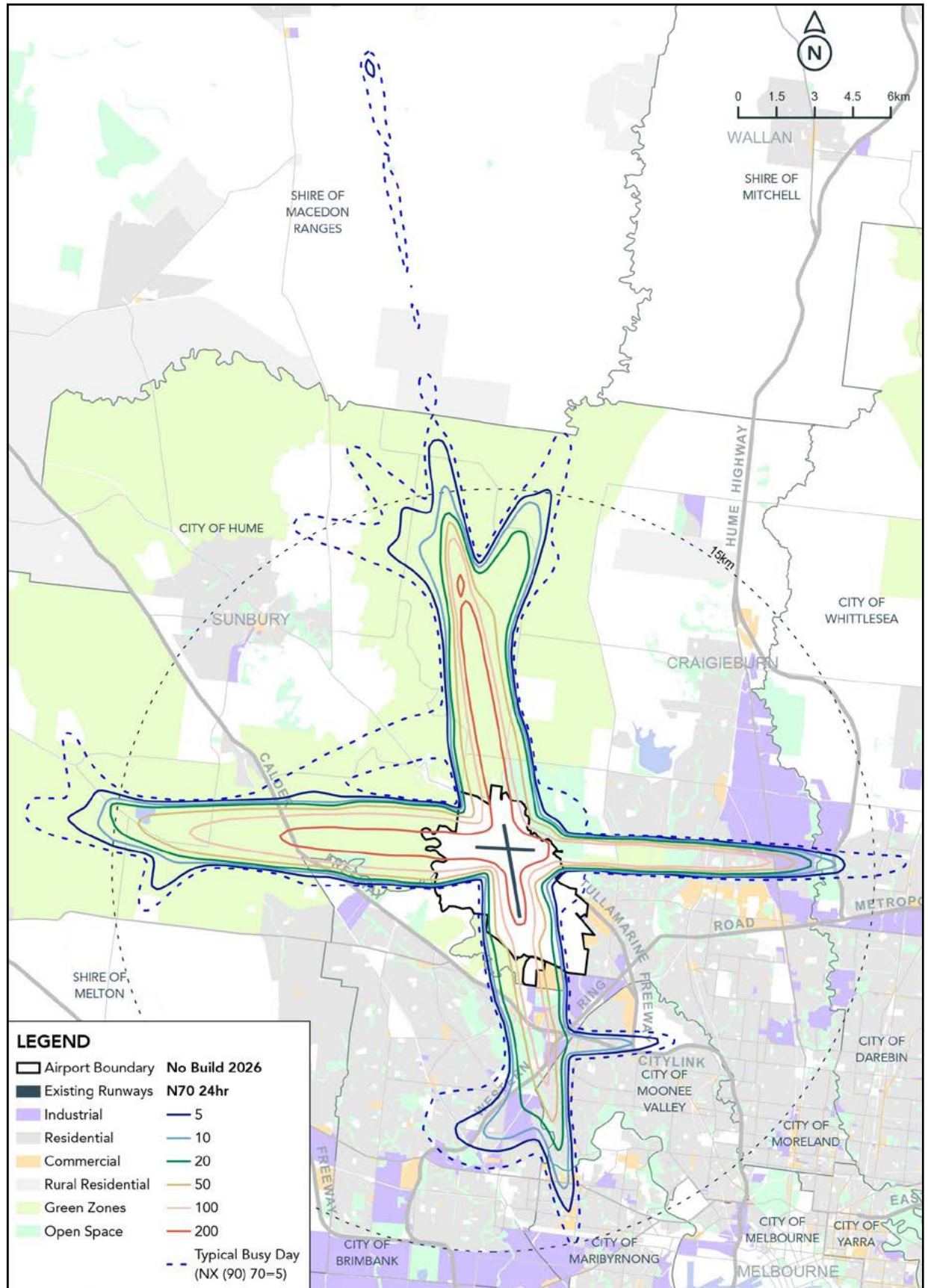
Figure C4.14
No Build 2046 – N70 annual day and evening (6am to 11pm)



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

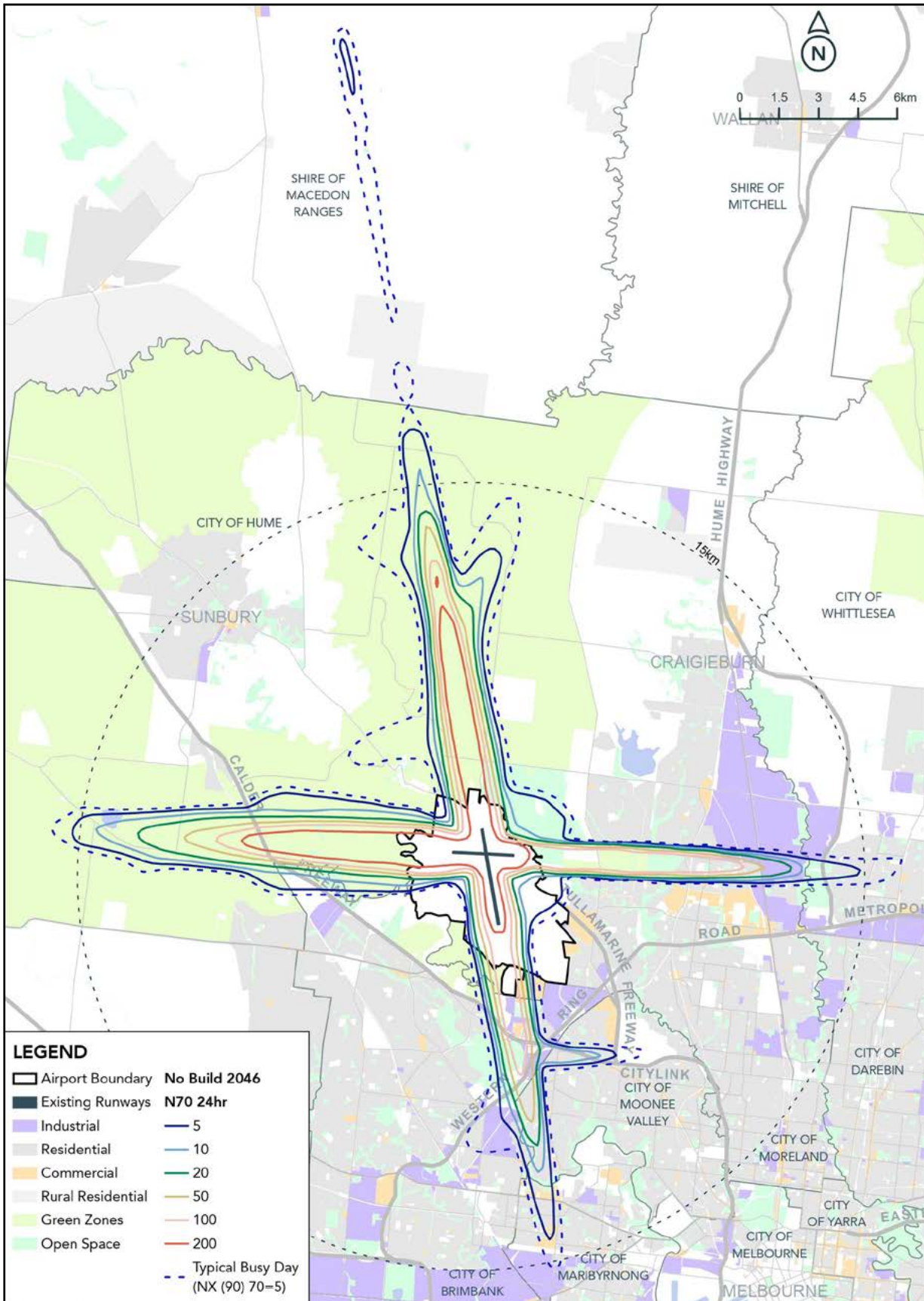
Figure C4.15
No Build 2026 – N70 annual 24 hour



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

Figure C4.16
No Build 2046 – N70 annual 24 hour



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

N60 night

Figure C4.17 presents the No Build 2026 annual night-time N60. The N60 is useful for evaluating night-time noise because it can be correlated with the potential for sleep disturbance (as explained in C3: Aircraft Noise Modelling Methodology).

The night-time N-above contours reflect existing noise abatement procedures (NAPs), with most noise emissions being north and west of the airport. Noise emissions to the east (over suburbs such as Coolaroo, Campbellfield and Lalor) are lower than those to the north and west; however, night-time noise is predicted due to arrivals from the east being part of the second priority mode at night.

Operating modes incorporating operations south of the airport are given a lower priority at night. This is clearly evident in the N-above contours. However, the 90th percentile of these metrics (typical busy day $NX_{(90),60}$ and $NX_{(90),70}$) shows that more than five events are predicted in this area on at least 10 per cent of nights.

The prevalence of arrivals onto runway 16 (southerly direction) is seen in the contours. The N60=5 contour extends approximately 38 kilometres from the runway to the north; while east and west of the airport, it extends approximately 18 kilometres and 19 kilometres respectively.

Figure C4.18 presents the No Build 2046 annual night-time N60. As with the day and evening N70, the extents of the N-above five contours remain similar to those in the equivalent 2026 figure (Figure C4.17). The forecast growth in operations is most evident in the 10 and 20 N-above contours.

N60 24hours

Figure C4.19 and Figure C4.20 present the No Build 24hr N60 for 2026 and 2046.

The N60 24hr contours cover a large proportion of the land within 30 kilometres of the airport. Additional aircraft flight paths (compared to the N60 night contours in Figure C4.17 and Figure C4.18) are due to the increase in aircraft movements over a 24 hour period.

The prevalence of arrivals onto runway 16 (southerly direction) is evident in the contours. The N60=5 contour extends approximately 50 kilometres from the runway to the north. To the east and west of the airport, it extends approximately 37 kilometres and 34 kilometres respectively.

C4.4.3 ANEC noise levels

The No Build ANEC for 2046 is presented in Figure C4.21. It shows similar characteristics to the N-above contours for the same scenario. Significant noise exposure is predicted in all directions, with a bias towards the north and west.

C4.5

AVOIDANCE, MANAGEMENT AND MITIGATION MEASURES

C4.5.1

Mitigation of aircraft noise impacts

Aircraft noise is an inevitable and unavoidable consequence of an operating airport. Effective mitigation noise often requires a number of small, incremental improvements that, when combined, result in a substantial and noticeable reduction in aircraft noise. However, it is important to maintain a careful balance because the measures needed to ensure the safe and efficient operation of the airport may limit the availability of noise-mitigation options.

There are three fundamental options for mitigation of aircraft noise:

- Reduce noise emissions from the aircraft
- Plan infrastructure, flight paths and airport operating strategies that achieve lower impact over noise-sensitive areas
- Develop land-use planning or other controls to ensure future noise-sensitive uses are not located in noise-affected areas.

Noise emissions from aircraft have reduced substantially over the past 40 years and the improvements in aircraft technology that have facilitated this are expected to continue (see Chapter C3: Aircraft Noise Modelling Methodology). The reduced noise attributable to aircraft evolution has been incorporated into this assessment's predictions.

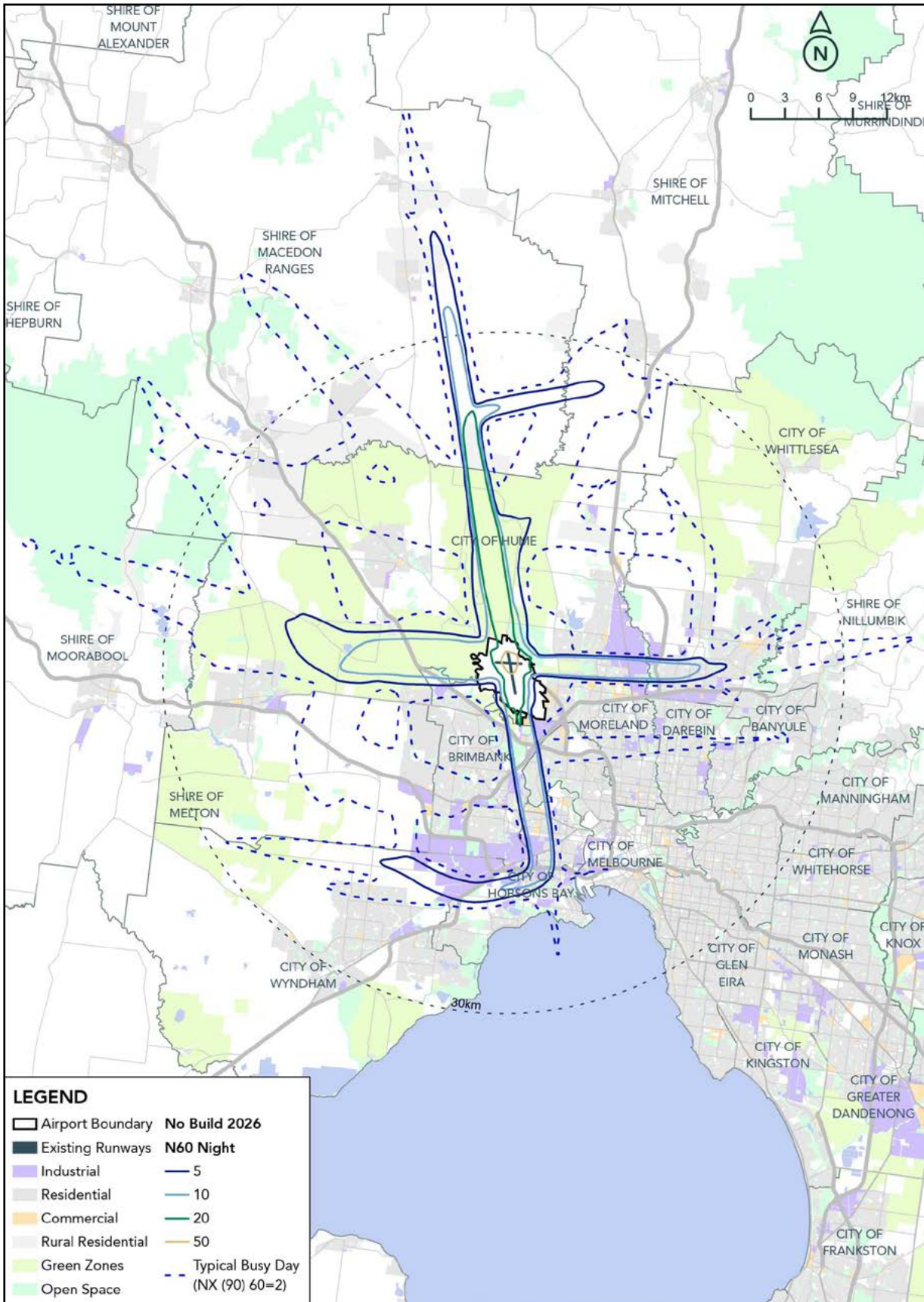
Much of the analysis in other airspace-related chapters (Chapter C2: Airspace Architecture and Capacity, Chapter C3: Aircraft Noise Modelling Methodology and Chapter E4: Draft Runway Operating Plan) pertains to the different impacts of alternative airport operating strategies.

Various strategies will have differing impacts on different populations. This chapter presents two alternative operating strategies for managing aircraft noise – particularly at night, when lower demand permits the use of different runway modes. This is achieved by prioritising, when operationally possible, night-time flights over the green-wedge zones north of the airport.

In addition to the planned mitigation options, giving information to existing and potential new residents in areas likely to be affected by noise is vital.

For existing residents, this information will allow them to understand the anticipated aircraft noise (including the number, frequency, loudness, and timing of events and periods of respite). For potential new residents, comprehensive and accurate information enables their informed consideration of a move into the area. This report provides a foundation for this process. Other tools, including online information sources, are available to facilitate the detailed understanding of likely impacts at specific locations.

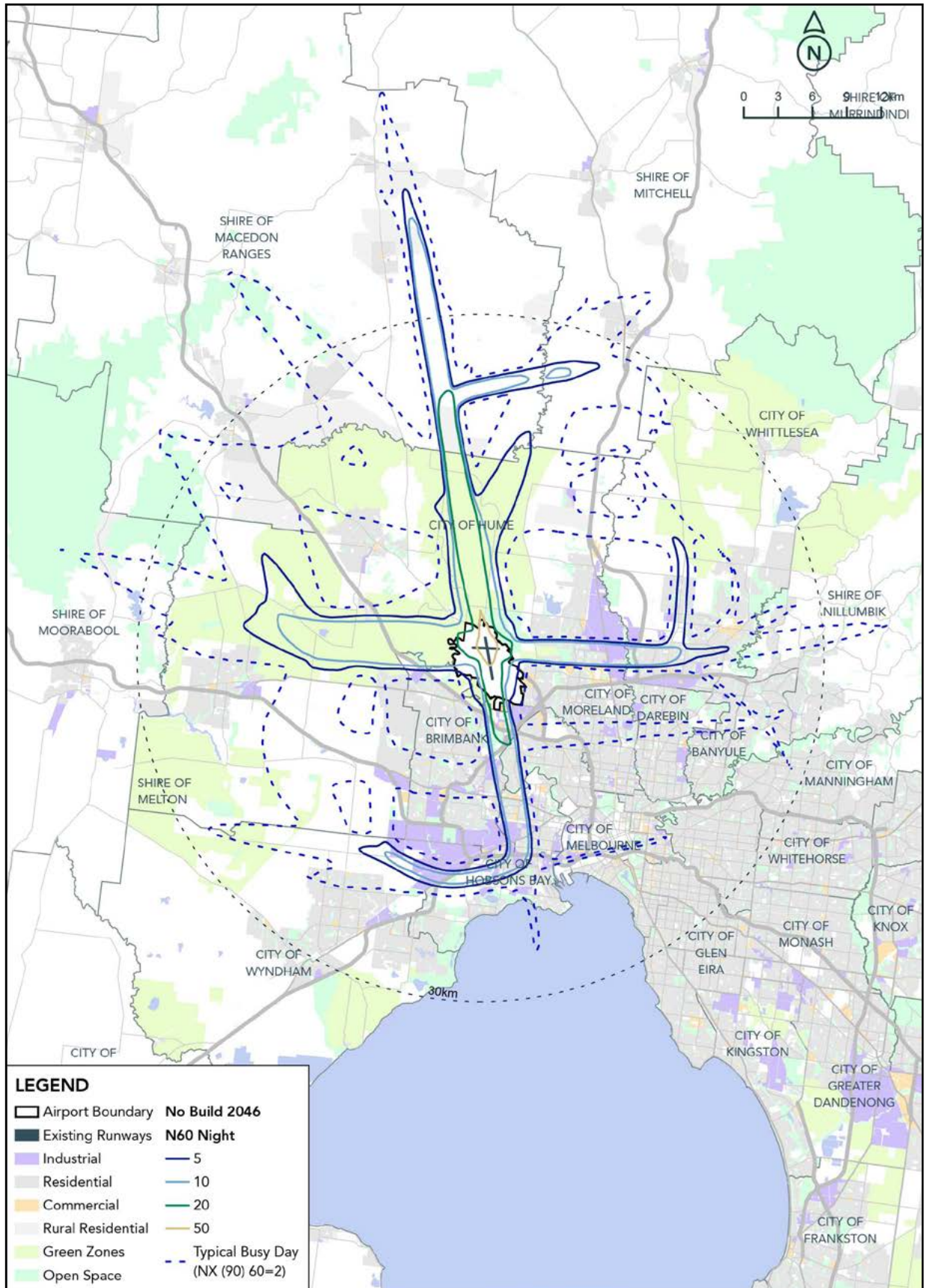
Figure C4.17
No Build 2026 – N60 annual night (11pm to 6am)



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

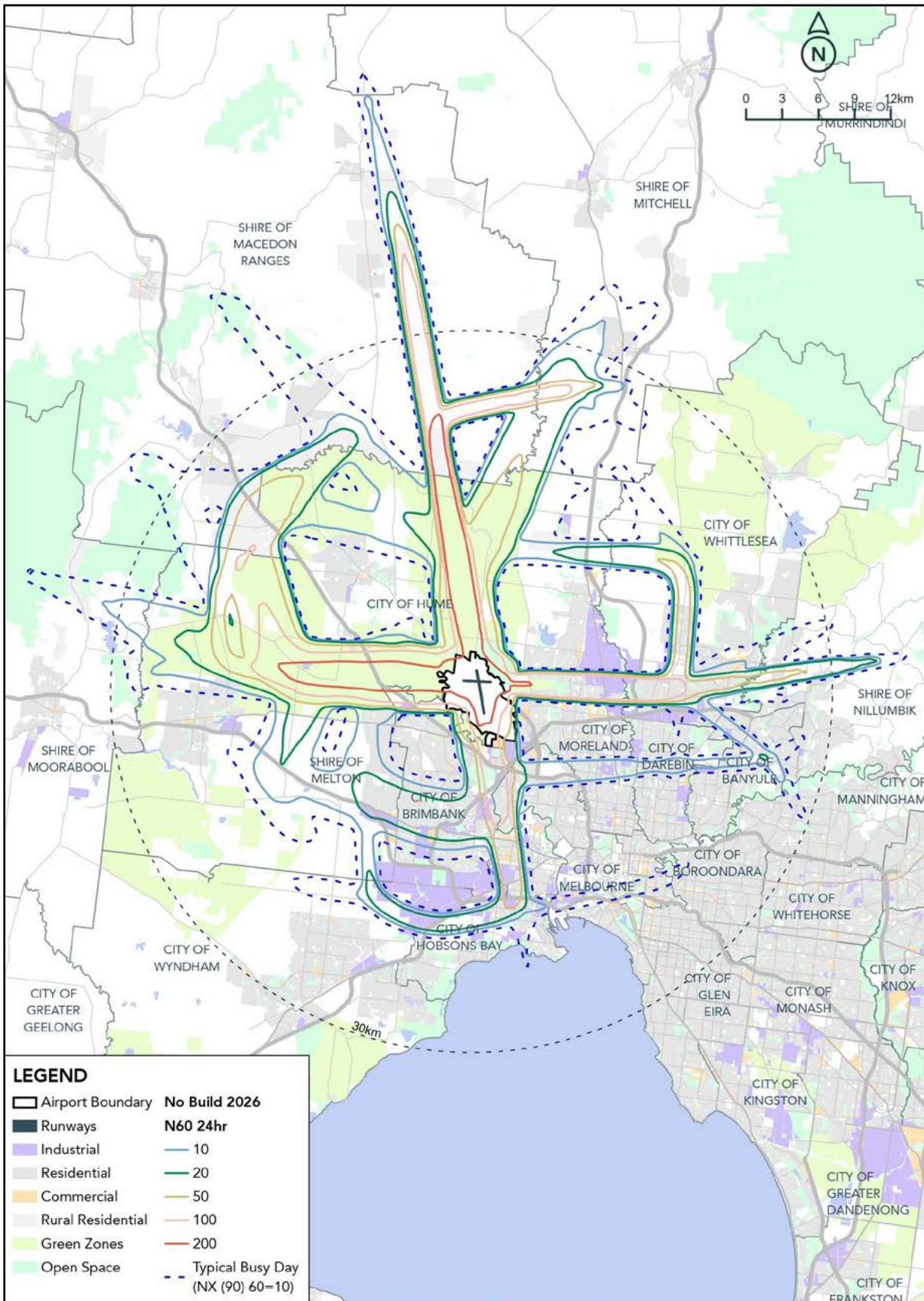
Figure C4.18
No Build 2046 – N60 annual night (11pm to 6am)



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

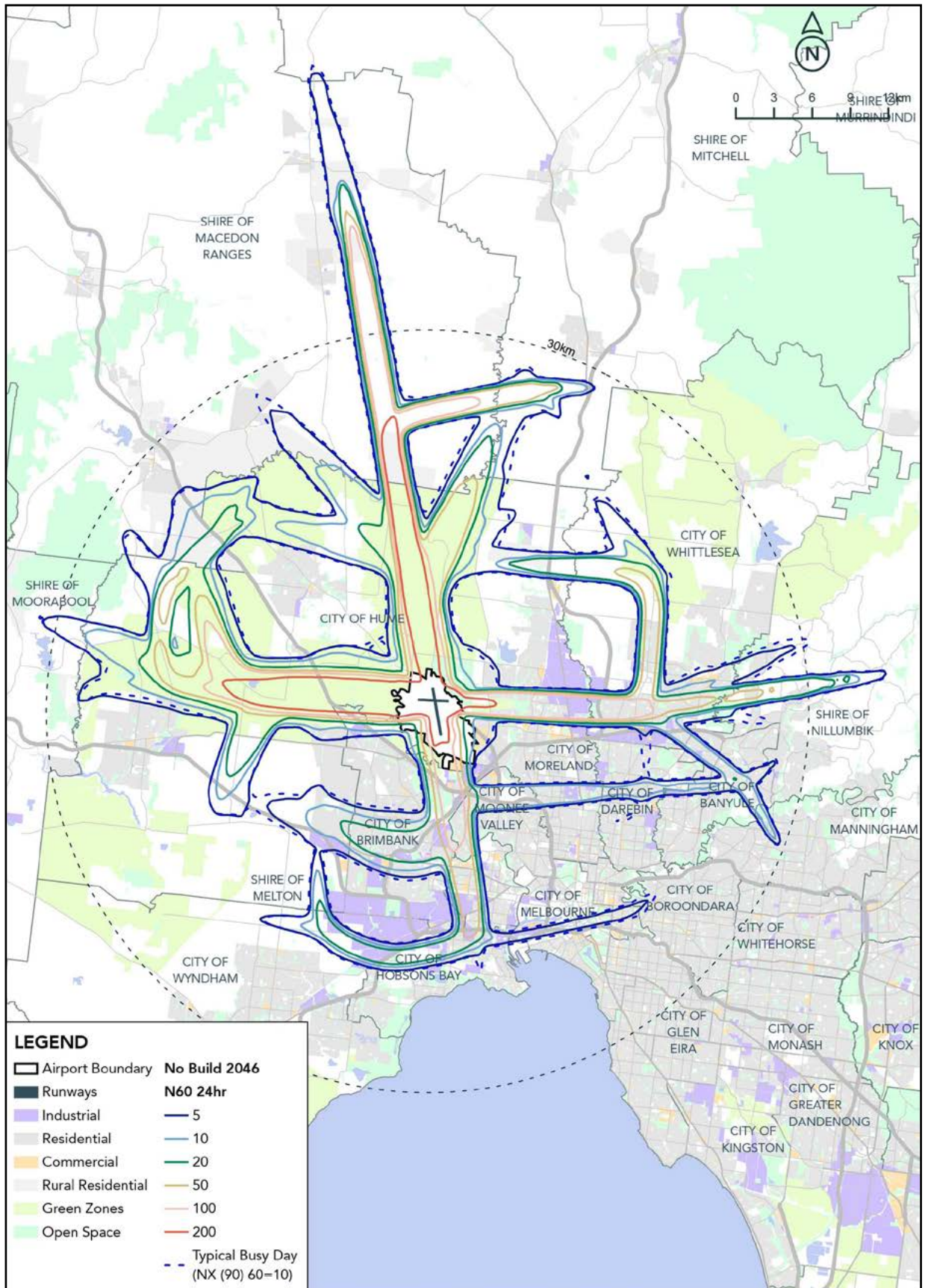
Figure C4.19
No Build 2026 – N60 annual 24 hour



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

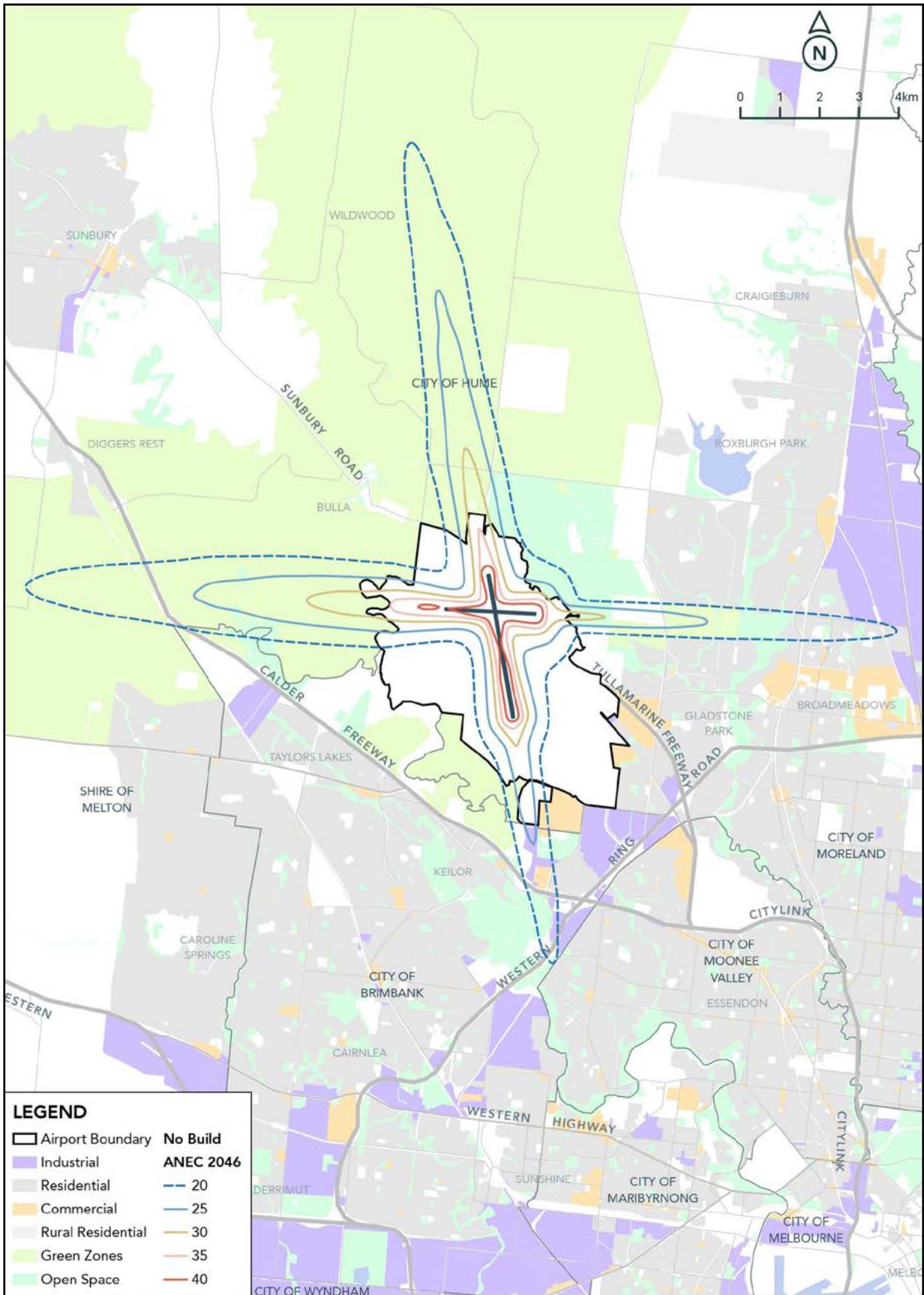
Figure C4.20
No Build 2046 – N60 annual 24 hour



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

Figure C4.21
No Build 2046 – ANEC



Source: SoundIN, 2021

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

C4.5.2

Principles of aircraft noise management

Flight paths for M3R have been developed by Melbourne Airport with input from Airservices Australia.

These flight paths and their development are discussed in **Chapter C2: Airspace Architecture and Capacity**. The development of the flight paths and modes of operation were guided by principles developed by Airservices and are described in its Flight Path Design Principles (Airservices Australia, 2020).

Melbourne Airport has added some functional requirements to the preliminary airspace-design process consistent with the Airservices principles. They are:

- Safety must always be the most important consideration
- Airspace and flight-path designs must demonstrate that due consideration has been given to their potential social impact
- Preference should be given to options permitting a gradual change from current to planned procedures (e.g. segregated modes facilitating flight paths similar to those currently used)
- Residential areas overflowed by arrivals should not be overflowed by departures
- Noise should be concentrated as much as possible over non-noise-sensitive areas and establishments
- Matters of National Environmental Significance (MNES), as defined in the EPBC Act 1999, must be considered on a case-by-case basis regarding known noise sensitivity, as should state-significant environmental area – including sites with known heritage values
- Where flight paths over residential areas are unavoidable, they should be minimised to the greatest extent practicable
- When comparing options, operations conducted at night and weekends must be considered more sensitive than those in the daytime on weekdays
- Noise abatement procedures should be optimised to achieve the lowest possible impact on the community
- Airspace and flight path designs must provide sufficient capacity to meet expected runway demand in each selected runway mode
- All destinations should be accessible from all runways via existing entry and exit points to the relevant CASA-approved air routes wherever possible
- Airspace and flight path designs should take into account, and mitigate wherever possible, the impacts on all operations within the Melbourne Basin – in particular on Essendon Fields Airport, RAAF Base Point Cook and Avalon Airport traffic
- Airspace and flight-path designs must be designed to meet the operational requirements of airline operators and ensure safe aircraft operations

- Airspace and flight-path designs should prioritise Continuous Climb Operations for take-off and maximise the availability of Continuous Descent Operations for landing
- Airspace and flight-path designs should be designed to accommodate, and benefit from, new satellite technologies such as SBAS and GBAS
- Airspace and flight path designs must continue to facilitate efficient operations on the existing east-west runway during Single Runway Operations (SRO).

C4.5.3

Avoidance and mitigation measures in airspace architecture and flight path design

This section provides an overview of the aircraft noise mitigation measures incorporated in the airspace flight path design developed either during the evolution M3R or in the MDP assessment process.

A detailed description of preliminary airspace architecture and flight path design is given in **Chapter C2: Airspace Architecture and Capacity**.

The preliminary airspace design incorporates considerations to minimise the impacts of aircraft noise on sensitive areas. They include the adjustment of flight paths to improve noise outcomes, as well as maximising the opportunities for runway modes of operation that give priority to noise-preferred runway modes of operation – particularly during night-time.

This preliminary design incorporates only those mitigation measures included in the preliminary airspace design unless stated otherwise. Advanced mitigations such as Noise Abatement Departure Procedure (NADP) climb profiles will be considered in the detailed design process.

Chapter C2: Airspace Architecture and Capacity describes the process and outcomes of the design iteration towards improving the noise and operational outcomes of M3R. The following sections discuss both the design decisions that were made, and the reasons for those changes regarding mitigating the impacts of aircraft noise. Areas where the design is constrained by safety and/or where a mitigation was considered but could not be implemented are also discussed.

Further details and illustrations of some of the design process's key considerations can be found in **Chapter C2: Airspace Architecture and Capacity**.

It is important to note that all design decisions that will be made during the development of the MDP will be considered by Airservices in the detailed airspace design.

C4.5.3.1**Departures from existing runway 16L**

- The majority of departures to the north-east, east and south-east will depart from the existing north-south runway (16L/34R). For destinations to the west and north-west, some long-haul/larger aircraft will require its extended length for departure
- Parallel-runway departure rules preclude a right turn from runway 16L due to operations on adjacent runway 16R; and an immediate left turn is not possible due to operations on Essendon Fields Airport runway 17. Runway 16R departures must therefore turn right as soon as possible
- Runway headings for departures from runway 16L are maintained until 4,000 feet before turning left to head north and east, thereby allowing Essendon Fields Airport departures from runways 17 and 08 to climb to 3,000 feet without restrictions. This enables equity of access as required in Melbourne Basin airspace
- Delaying the left turn from runway 16L avoids low overflight of Melbourne's north-eastern suburbs. This departure path follows the existing noise corridor south of the airport, and avoids low overflight of areas not currently experiencing departures from runway 16L
- Departures have been designed to permit Continuous Climb Operations (CCO) thereby reducing fuel burn and emissions while improving noise outcomes.

C4.5.3.2**Departures from new runway 16R**

- Aircraft departing to the south, west and north-west will preferentially use runway 16R. This includes most medium and long-haul aircraft to Perth, west Asia, Africa and the Middle East – except those requiring the existing longer runway (16L)
- Departures to the north and north-east (Queensland/northern NSW) may also use this runway to balance runway utilisation in periods of higher demand
- The Sydenham radio mast precludes an early right turn from runway 16R. However, parallel runway rules require a minimum 10-degree right turn away from the adjacent runway departure heading; and at least a 30-degree offset from the missed-approach path of the adjacent runway. The departure turn must commence as soon as possible, and can only be delayed for a maximum two nautical miles from the runway end. The mast constraint and turn requirement mean that the initial turn for departures from the new runway will commence at the Calder Freeway

- The runway 16R departure design permits aircraft to gain height over arrival routes facilitating Continuous Climb Operations and Continuous Descent Operations (CCO and CDO). This reduces fuel burn and emissions while improving noise outcomes. Tighter turns would complicate this climb-and-descent relationship and could force arrivals to descend earlier, leading to a potential increase in both noise and fuel burn
- A more direct path to the west from runway 16R, south of Melton, was considered for mixed-mode operations. However, interaction with arrivals from the south-west created additional complexity and workload for Air Traffic Control (ATC) procedures. Instead, these departures turn north-west to climb over arrivals from the west, enabling CCO and CDO for all aircraft
- In segregated modes, where the climb and descent interactions are considered more manageable, a more efficient direct track to the west has been included. This allows aircraft to be above 12,000 feet before passing Bacchus Marsh.

C4.5.3.3**Arrivals to existing runway 16L**

- Parallel-runway arrival design requires aircraft to be separated vertically by 1,000 feet until established on approved instrument approach procedures. Due to the required commencement altitude for the new runway (see below), Instrument Landing System/GBAS Landing System (ILS/GLS) approaches to runway 16L must commence at 3,500 feet Above Mean Sea Level (AMSL). This requires a longer final approach than existing flight paths
- For arrivals from the north-east (such as Sydney and Canberra) the longer ILS/GLS approach requires aircraft to track north of Wallan and overhead Heathcote before turning onto final approach
- A Required Navigation Performance-Authorisation Required (RNP-AR) or visual final approach path (which the majority of aircraft are expected to be able to use in most conditions) has been included in the preliminary design. This meets visual approach rule requirements while providing an efficient RNP-AR design. This path follows the existing arrival corridor passing to the north of Whittlesea, overhead Eden Park, and between Kalkallo and Beveridge Park
- The arrival from the north-east is strategically designed to allow aircraft arriving from the south-east – for the longer ILS/GLS approach – to pass safely above arrivals from the north-east by using the shorter RNP-AR or visual arrival. This maintains CDO for both sets of arrivals

- Arrivals from the north are deviated away from arrivals from the north-west to facilitate separation and CDO. This also provides flexibility for ATC sequencing and moves them further from Lancefield
- Arrivals from the north-west are deviated away from arrivals from the north to facilitate separation and CDO, which also gives ATC sequencing flexibility. This flight path has been designed to pass west and south of Romsey
- During segregated-mode operations, arrivals from the north-east can track further north, thereby avoiding rural communities in Kinglake and Eden Park while remaining largely south of residential development in Wallan
- In segregated mode, arrivals from the west would follow similar flight paths to those for 16R before joining the final approach on the existing runway alignment.

C4.5.3.4

Arrivals to new runway 16R

- The terrain to the airport's north-west (Mount Macedon) dictates that ILS/GLS approaches to the new runway 16R must commence at 4,500 feet AMSL
- Arrivals for the ILS/GLS approach have been positioned to avoid the population centres of Woodend, Macedon and Romsey, and to facilitate CDO
- A shorter RNP-AR/visual approach path has also been designed that reduces arrival track miles and emissions for aircraft arriving from the south-west. This has been designed to achieve CDO and avoid overflight of the Bacchus Marsh, Gisborne, Riddell's Creek and Sunbury populations. This arrival intercepts final approach 6.5 nautical miles from the new runway.

C4.5.3.5

Departures from existing runway 34R

- Several alternative designs for departures from runway 34 were considered, in order to balance operational and environmental requirements. Design was influenced by new information regarding planned residential developments in the region
- The rules for departure-path design for parallel runways require that turns must:
 - Be made by two nautical miles upwind
 - Diverge at least 10-degrees offset from the adjacent runway departure heading
 - Diverge at least 30-degrees offset from the missed approach path of the parallel runway
- Due to the nature of the traffic at Melbourne there is large demand for departures to the north-east and north (NSW and Queensland). Efficient facilitation of departures on a north-easterly track from both runways is therefore necessary. Some ultra-long-haul departures to the north-west must use runway 34R

- This combination creates a need for crossing paths north of the airfield. To achieve this in Mixed Mode, one departing aircraft must maintain lower altitude while the other achieves a CCO and passes above. (Several alternative designs were evaluated for equitable noise outcomes and to facilitate safe crossing paths.) The optimal result prioritises allocating the lower flight path for departures from 34R
- If/when there is no conflicting traffic departing from the other runway, 34R aircraft will be allowed to climb using a CCO.

C4.5.3.6

Departures from new runway 34L

- A range of departure designs for runway 34L was evaluated to optimise alignment with existing departure paths and achieve safe procedures that balance efficient and equitable noise outcomes
- Departures to the west and south turn early to pass south of Sunbury. The turn is delayed slightly so aircraft don't turn until they are past the Bulla township (but within two nautical miles upwind)
- Departures to the north-west pass north of Sunbury, then south and west of Gisborne and Macedon.

C4.5.3.7

Arrivals to existing runway 34R

- In order to achieve separation for the parallel approaches – and maintain aircraft arriving from the north-east at a higher altitude above Melbourne's south-eastern suburbs, generally above 6,000 feet AMSL – ILS/GLS approaches to 34R commence at 4,000 feet AMSL over Port Phillip Bay (after aircraft have crossed the coast and aligned with the runway)
- The RNP-AR/visual approach for runway 34R in Mixed Mode operation intercepts the final approach at 6.5 nautical miles. The Standard Terminal Arrival Route (STAR) has been designed to facilitate CDO and accommodate Visual Flight Rules (VFR) operations into Essendon Fields
- The existing arrival track corridor over Southbank and Port Melbourne is required to shift slightly south. Though it is unavailable in Mixed Mode, the existing corridor has been replicated in both Segregated Mode options (Option 1 and Option 2, explained in Section C4.5.4.1)
- Runway 34R arrivals from the north have been provided with CDO options for ILS and RNP-AR/VFR. This minimises noise from level flight over the inner-east's residential areas, and Bayside suburbs. These arrivals are strategically separated from arrivals from the north-east and runway 34 departures.

C4.5.3.8

Arrivals to new runway 34L

- Runway 34L arrivals from the south-west, north-west and north have been provided with CDO options for both ILS/GLS and RNP-AR/Visual. This minimises noise from level flight over the residential areas of Tarneit, Truganina and Sunshine. These arrivals are strategically separated from each other and runway 34L/34R departures
- Runway 34L ILS/GLS arrivals track south of Werribee residential areas, and cross the coast in the vicinity of RAAF Base Point Cook and associated Military Restricted Airspace (active three times a week up to 4,500 feet AMSL). Aircraft descending to use runway 34L ILS from the north will be at 5,000 feet AMSL above Point Cook on descent, to be at 3,000 feet for the ILS intercept. This is nominated as the lower path due to noise considerations for aircraft using runway 34R. This design takes into account equitable access for operations at Point Cook as well as the overall balance of potential noise effects.
- The runway 34L RNP-AR/Visual approach for runway 34R intercepts final approach at four nautical miles. This flight path has been designed to fly over industrial areas to the airport's south-east to the greatest possible extent.

C4.5.3.9

SODPROPS: departures from existing runway 34R and arrivals to new runway 16R

- When safe to do so and demand allows, night-time (11pm to 6am) mode SODPROPS (refer to **Section C4.5.4.2**) minimises noise exposure for residential areas
- Arrivals to new runway 16R from the west and north are similar to the mixed-mode arrivals. However, arrivals from the east and south-east must be positioned to track west of the airport so they can avoid departures from runway 34R. These arrivals will be kept high (above 8,000 to 10,000 feet AMSL) until west of the airport, then descend over less populated areas to join the arrival path from the south-west
- Departures from runway 34R are similar to Mixed Mode departures. However, departures to the west and north-west can climb over arrivals from the north and north-west. This also takes aircraft further away from populated areas.

C4.5.4

Runway modes of operation

The existing NAPs (see **Chapter C2: Airspace Architecture and Capacity**) were developed to minimise noise impacts as much as practical without unduly compromising the operation of the airport.

Much of the analysis in this chapter relates to the differing impacts of alternative airport operating strategies (i.e. NAPs) regarding runway modes of operation. This MDP's modelling has identified that,

in order to deliver the capacity necessary for Melbourne Airport to meet projected demand, M3R operating modes must often prioritise Mixed Mode parallel runway operations between 6am and 11pm.

In other periods, when demand is lower, the runway infrastructure, facilities and airspace architecture proposed for M3R will allow a wider range of practical operating modes.

When combined with the mitigations incorporated in the flight-path design, these possibilities present a number of opportunities to minimise the impact of M3R on aircraft noise through consideration of alternative airport operating strategies. **Chapter C3: Aircraft Noise Modelling Methodology** and **Chapter C2: Airspace Architecture and Capacity** describe how the draft Runway Operating Plan (presented in **Chapter E4: Draft Runway Operating Plan**) was prepared while considering the impacts of aircraft noise.

Note that the changes to NAPs referred to in this chapter refer to changes in the priority and selection of runway modes of operation. Complete NAPs may also include other measures, such as climb and descent profiles, which are not considered when referencing NAPs in this chapter.

Noise modelling presented by M3R to date has not included use of Runway 09/27. This strategy was adopted to avoid understating the potential impacts of the primary parallel north-south operating modes.

Runway 09/27 remains an important element of Melbourne Airport's operation following M3R. Feedback during the public exhibition clearly demonstrated community desire for its ongoing use for sharing noise, especially at night.

Melbourne Airport acknowledges that there is significant opportunity to introduce operating modes that promote use of Runway 09/27 with the objective of noise sharing. The process of detailed airspace design (pending approval of the M3R MDP) shall incorporate this objective and include updated noise modelling.

C4.5.4.1

Day and evening period NAP (6am to 11pm)

During Mixed Mode operations in the day and evening period (6am to 11pm), the use of the runway 34 direction would be prioritised whenever available.

Because departing aircraft are heavier, they require significantly more thrust than those arriving. They are therefore louder at the source than arrivals, and their noise footprint is significantly greater around the airport.

However, because departing aircraft climb faster than arrivals descend, noise from departures (perceived from the ground) tends to reduce quicker than arrivals. The less-populated areas to the north of the airport offer greater opportunities to design departure flight paths that avoid or minimise impacts on populations. **Table C4.2** and **Figure C4.22** illustrate the proposed NAPs for the 6am to 11pm period, when demand often requires Mixed Mode operations.

When demand is lower during the day and evening periods, the M3R runway infrastructure, facilities and airspace architecture will allow a wider range of practical operating modes. These possibilities include:

- Option 1: ‘Segregated mode’ operations (when demand permits) that prioritise arrivals to the new north-south runway 16R/34L and departures from the existing north-south runway 16L/34R. This is the most efficient segregated mode option because all departing aircraft (including ultra-long-haul flights) can operate from the existing runway length; and all arrivals are able to land on the new runway. To minimise noise impacts, departures to the north and arrivals from the south would be prioritised whenever wind conditions allow. Modelling has shown that this mode – combined with Mixed Mode when demand requires – impacts the fewest number of dwellings with significant noise emissions. This is illustrated in Table C4.3 and Figure C4.23
- Option 2: ‘Segregated mode’ operations (when demand permits) that alternate the runway priorities between the existing and new runways as follows – with priority for operations in a northerly direction (departures runway 34L and 34R). This is illustrated in Table C4.4 and Figure C4.24.

- Day 1 – Arrivals to the new north-south runway 16R or 34L and departures from the existing north-south runway 16L or 34R, as for Option 1
- Day 2 – Arrivals to the existing north-south runway 16L or 34R and departures from the new north-south runway 16R or 34L, with a few ultra-long-haul departures from the existing north-south runway 16L or 34R.

Modelling has shown that Option 2 impacts a greater number of dwellings with significant noise emissions than Option 1. However, it does distribute noise impacts more evenly between existing and newly-affected dwellings, and with a predictable regime of respite.

Other Segregated Mode operating strategies were explored but estimated to result in greater noise impacts than the two options above.

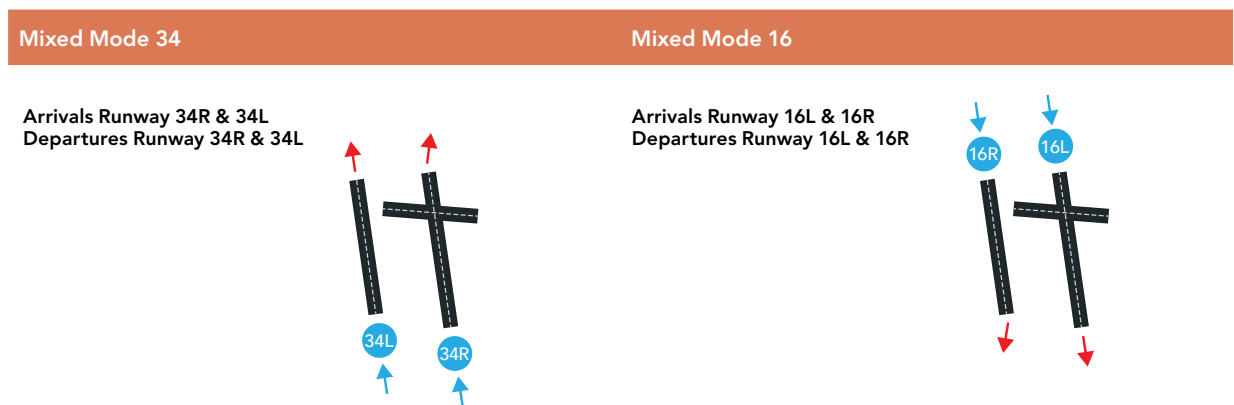
Modelling has shown that using segregated modes in the day and evening period has the greatest potential to reduce noise impacts in the earlier years of M3R’s operation; and that by 2046 capacity requirements will demand the use of mixed mode for a large part of the day and evening. Therefore, the degree of mitigation available from segregated modes between 6am and 11pm becomes somewhat limited by 2046.

Table C4.2
Mixed mode priorities - day and evening (6am to 11pm)

Priority	Arrivals	Departures	Notes
1	34L & 34R	34L & 34R	Mixed mode
2	16L & 16R	16L & 16R	Mixed mode

Source: APAM, 2020

Figure C4.22
Mixed mode priorities - day and evening (6am to 11pm)



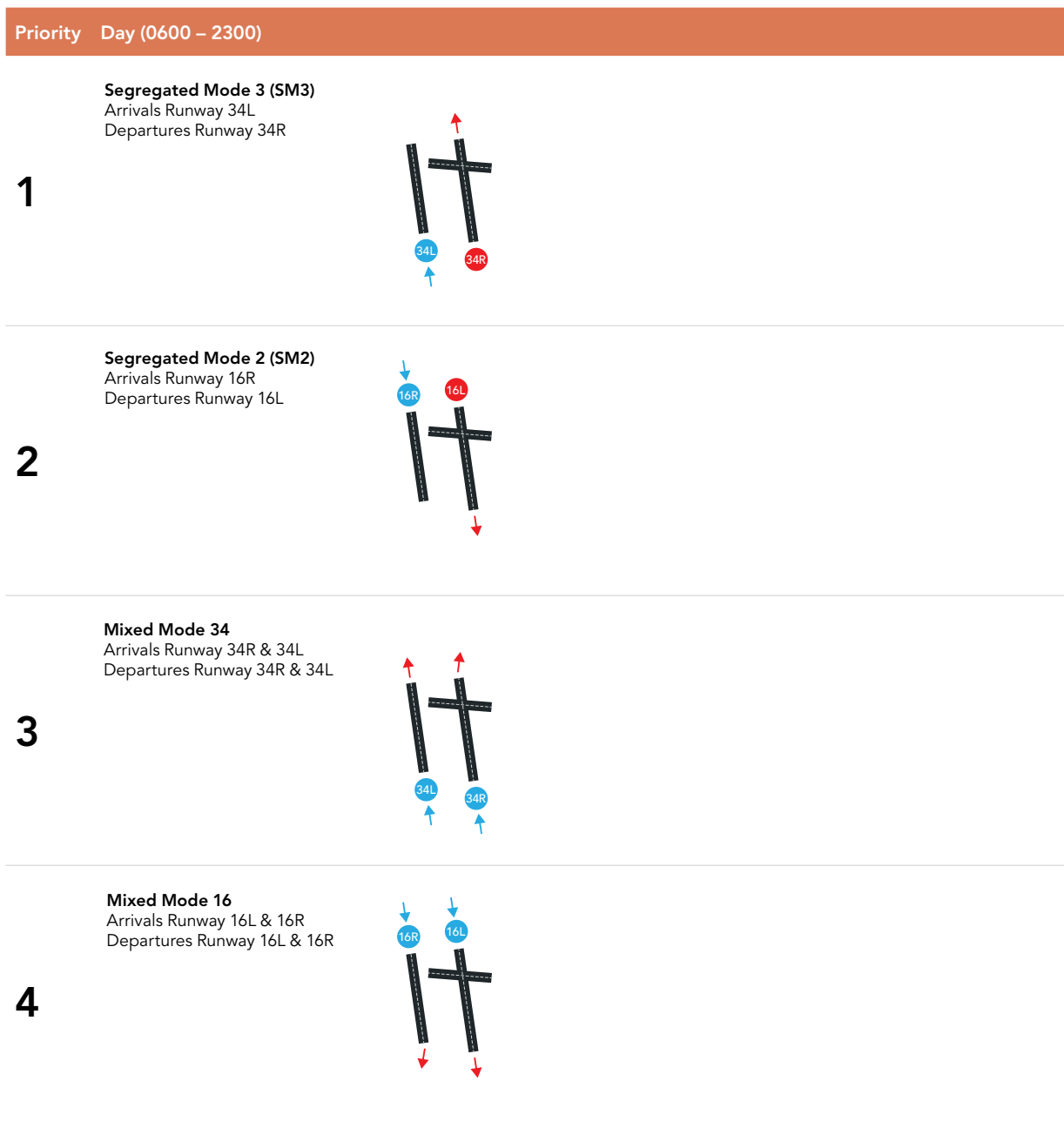
Source: APAM, 2020

Table C4.3
Option 1 priorities – day and evening (6am to 11pm)

Priority	Arrivals	Departures	Notes
1	34L	34R	SM3
2	16R	16L	SM2
3	34L & 34R	34L & 34R	Mixed Mode
4	16L & 16R	16L & 16R	Mixed Mode

Source: APAM, 2020

Figure C4.23
Option 1 priorities – day and evening (6am to 11pm)



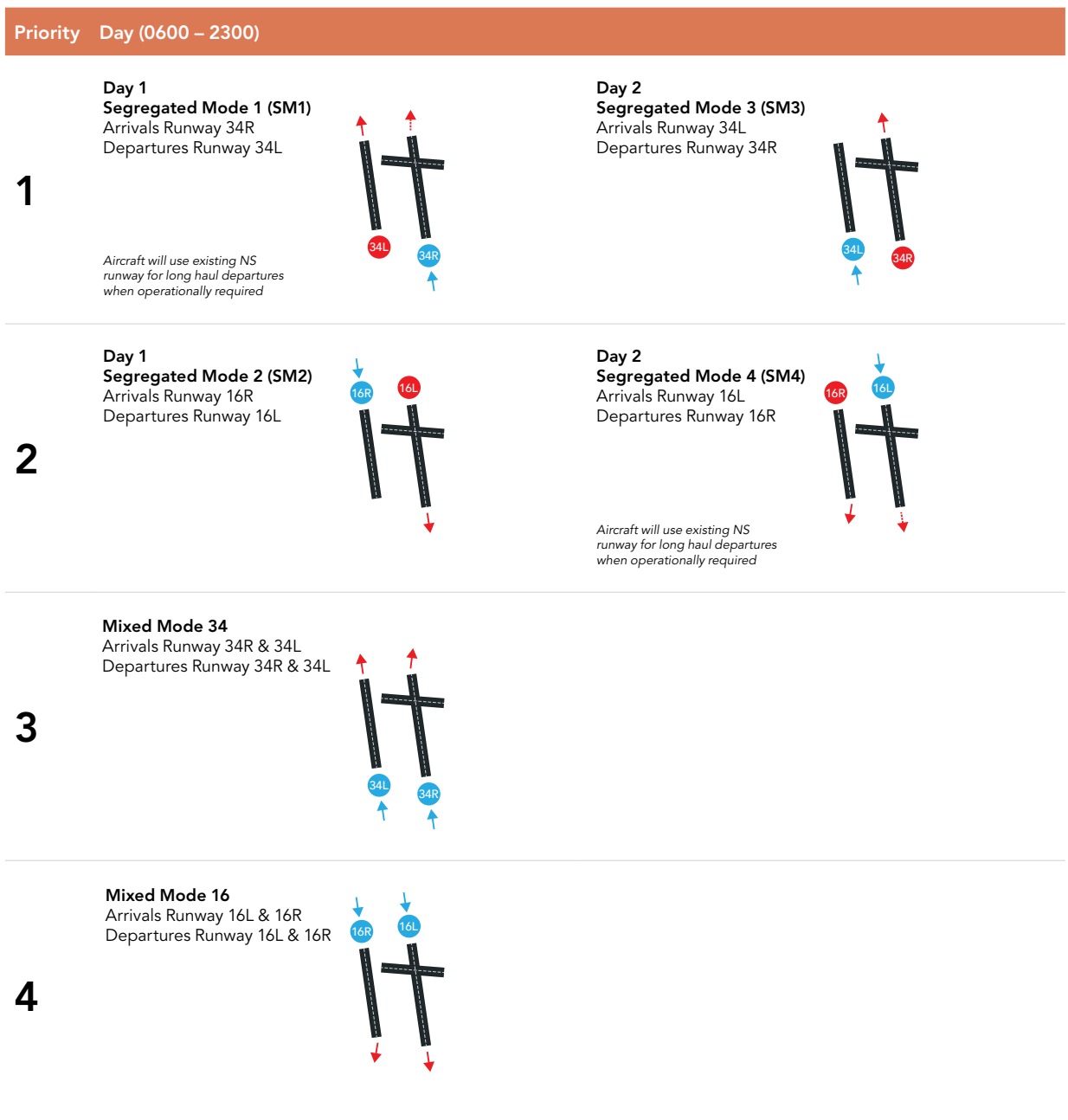
Source: APAM, 2020

Table C4.4
Option 2 priorities – day and evening (6am to 11pm)

Priority	Arrivals	Departures	Notes	Day 1	Day 2
1	34L or 34R	34L or 34R		SM1*	SM3
2	16L or 16R	16L or 16R		SM2	SM4*
3	34L & 34R	34L & 34R	Mixed Mode		
4	16L & 16R	16L & 16R	Mixed Mode		

Source: APAM, 2020. * SM1 & SM4 will use existing NS runway for long-haul departures when operationally required

Figure C4.24
Option 2 priorities – day and evening (6am to 11pm)



Source: APAM, 2020

C4.5.4.2

Night-time NAPs (11pm to 6am)

At night between 11pm and 6am, reduced demand is forecast and mixed mode's additional capacity is not expected to be required. Different modes are likely to be practical during these times (see **Chapter C2: Airspace Architecture and Capacity**).

These possibilities include:

- The use of Simultaneous Opposite Direction Parallel Runway Operations (SODPROPS) at night, when safe to do so and demand allows
- Use of Option 1 or Option 2 as discussed above, when SODPROPS is not available
- The use of runway 27 for departures when operationally suitable. (Note that to avoid understating M3R's potential impacts, noise modelling did not consider the use of runway 27 in M3R scenarios. However, using runway 27 for departures at night could be considered in the future, and may be implemented if it can be shown to have operational and/or noise benefits.)

SODPROPS is intended to direct flights over less-populated areas to the north and west of the airport whenever possible, as shown in **Figure C4.25**.

The Planning Policy Framework and subsequent planning schemes identify green wedges containing a mix of agriculture and low-density activities, including major infrastructure that supports urban areas.

The areas north and west of Melbourne Airport are part of the Sunbury Green Wedge and Western Plains North Green Wedge. Development here is restricted in order to protect both the areas and the infrastructure they permit – including Melbourne Airport.

More information on green wedges is included in **Chapter B2: Land Use and Planning**.

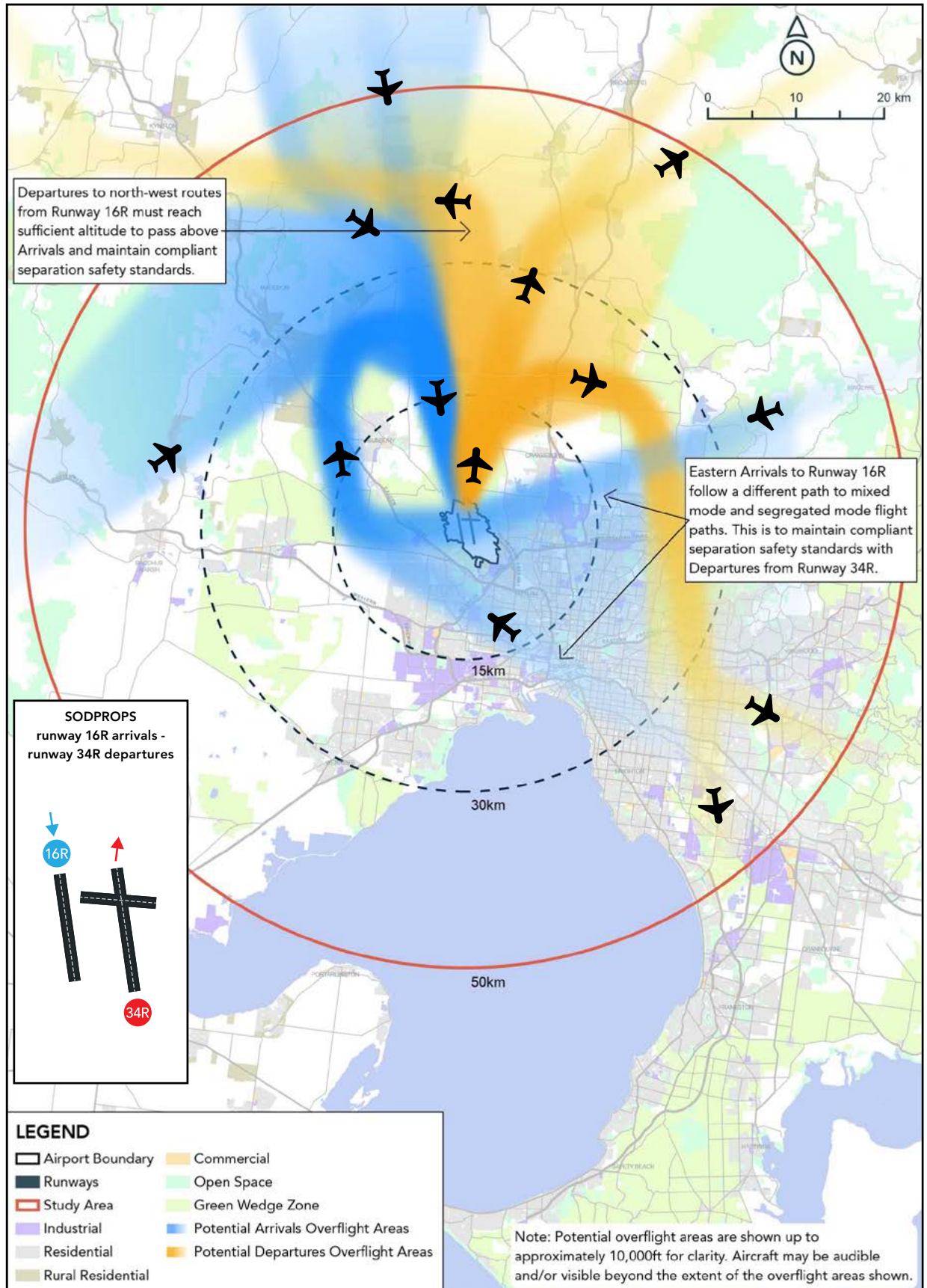
Night-time arrivals with SODPROPS will be to new runway 16R. Prioritising 16R for arrivals and existing runway 34R for departures at night will direct aircraft over the least-populated land surrounding the airport. The majority of night-time departures would not overfly a built-up area within 30 kilometres of the airport.

When wind means SODPROPS cannot be safely operated, or when demand exceeds its capacity, operations would revert to segregated modes. The options here are similar to those for the day-and-evening (6am to 11pm) period described above.

The combination of SODPROPS with Option 1 results in the operating strategy illustrated in **Table C4.5** and **Figure C4.26**.

The combination of SODPROPS with Option 2 results in the operating strategy illustrated in **Table C4.6** and **Figure C4.27**.

Figure C4.25
Utilisation of Melbourne green wedges by the proposed SODPROPS mode at night



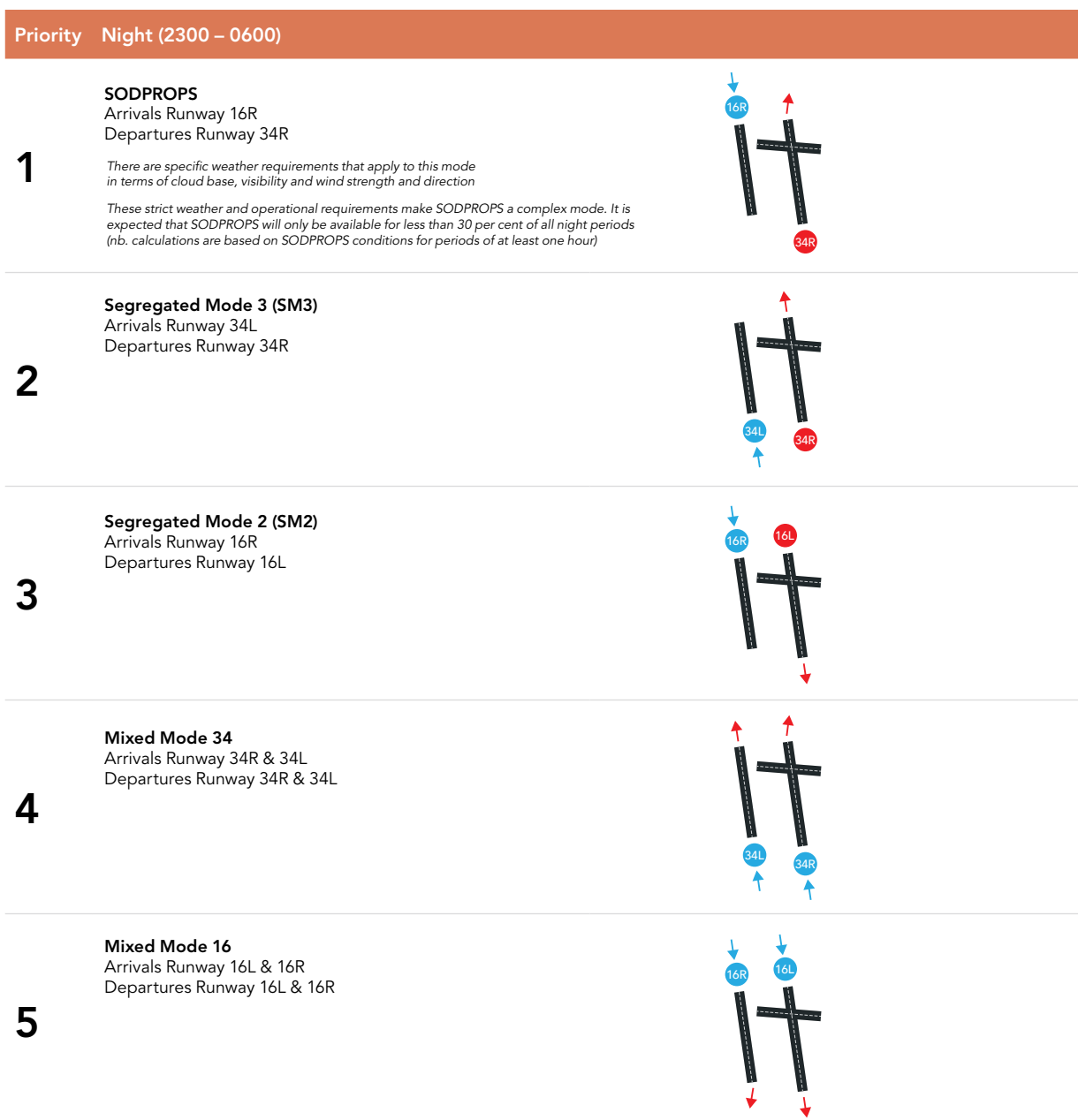
Source: APAM, 2020

Table C4.5
Option 1 priorities – night (11pm to 6am)

Priority	Arrivals	Departures	Notes
1	16R	34R	SODPROPS
2	34L	34R	SM3
3	16R	16L	SM2
4	34L & 34R	34L & 34R	Mixed Mode**
5	16L & 16R	16L & 16R	Mixed Mode**

Source: APAM, 2020. ** When operationally required

Figure C4.26
Option 1 priorities – night (11pm to 6am)



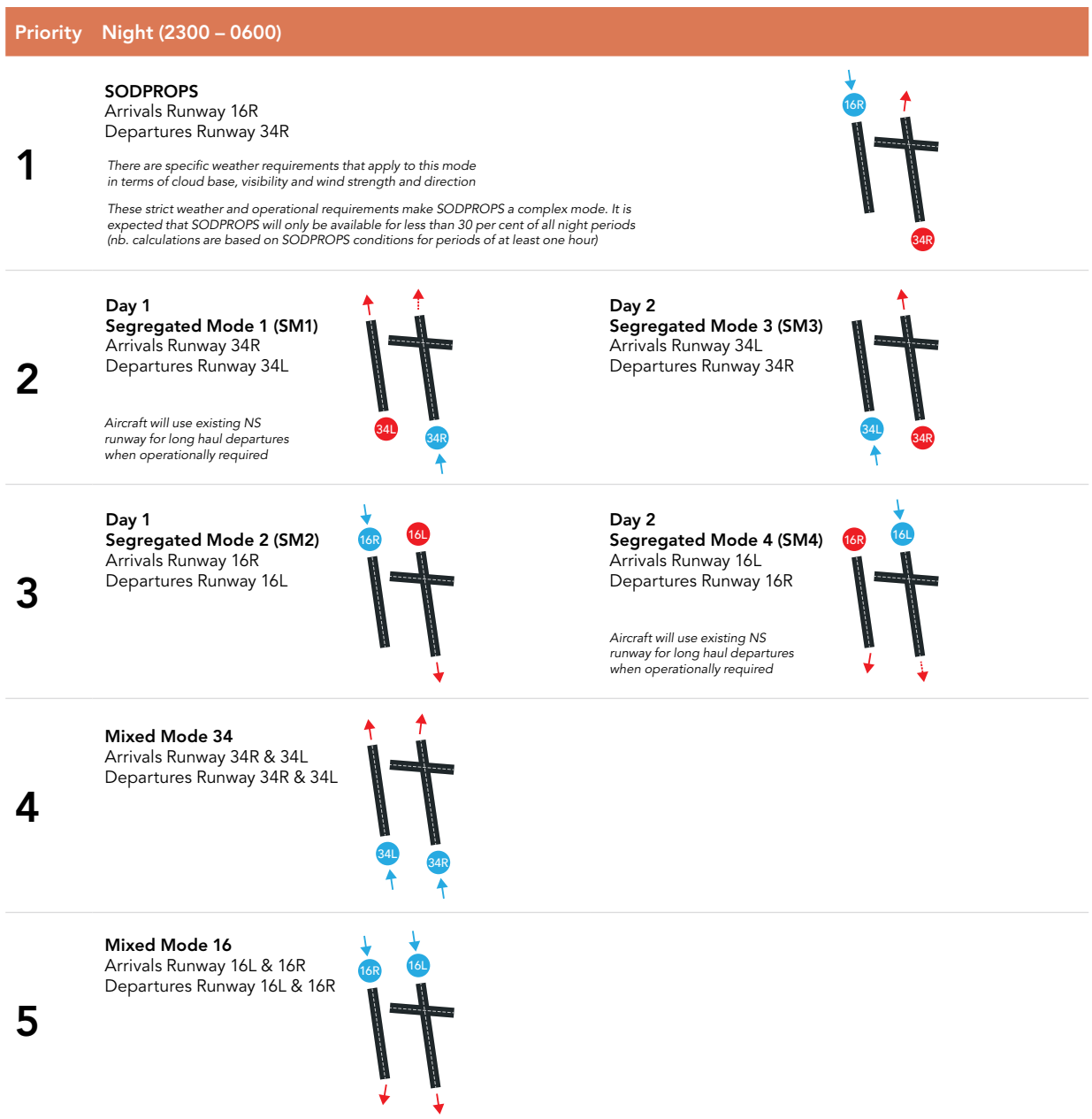
Source: APAM, 2020

Table C4.6
Option 2 priorities – night (11pm to 6am)

Priority	Arrivals	Departures	Notes	Day 1	Day 2
1	16R	34R	SODPROPS		
2	34L or 34R	34L or 34R		SM1*	SM3
3	16L or 16R	16L or 16R		SM2	SM4*
4	34L & 34R	34L & 34R	Mixed Mode**		
5	16L & 16R	16L & 16R	Mixed Mode**		

Source: APAM, 2020. * SM1 & SM4 will use existing NS runway for long haul departures when operationally required ** When operationally required

Figure C4.27
Option 2 priorities – night (11pm to 6am)



Source: APAM, 2020

C4.6 M3R AIRCRAFT OPERATIONS AND NOISE PREDICTIONS

This section presents the expected aircraft operations and associated noise emissions for the M3R Build scenario. Many M3R impacts can be evaluated by comparing this section's metrics to the corresponding No Build metrics previously described.

C4.6.1 Runway usage

Figure C4.28 presents the predicted runway usage in 2046 for the 24-hour period for each proposed operating strategy : Mixed Mode, Option 1 and Option 2.

Figure C4.29 presents the predicted runway usage in 2046 for the day and evening period (6am to 11pm) with them.

Figure C4.30 presents the predicted runway usage in 2046 for the night period (11pm to 6am) for each.

The data shown in these figures reflect the shift towards the parallel runway system, in which operations in a northerly direction (runways 34L and 34R) are preferred for managing noise effects – as reflected in their respective proportions of arrivals and departures.

The mixed mode runway usage demonstrates a slight bias towards departures off the existing runway. This is due to several factors: the existing runway is operationally required for some departures; some high-demand routes such as Sydney favour the existing runway; and modelling suggests that allocating more departures to the existing runway would optimise the capacity of the airfield.

Predicted runway usage for Option 1 demonstrates a greater bias toward departures from the existing runway. This is because the segregated operating modes associated with Option 1 favour departures from the existing runway and arrivals onto the new runway.

Predicted runway usage for Option 2 demonstrates less bias towards departures from the existing runway. This is because the segregated operating modes associated with Option 2 were developed to evenly distribute operations and provide a predictable schedule of respite.

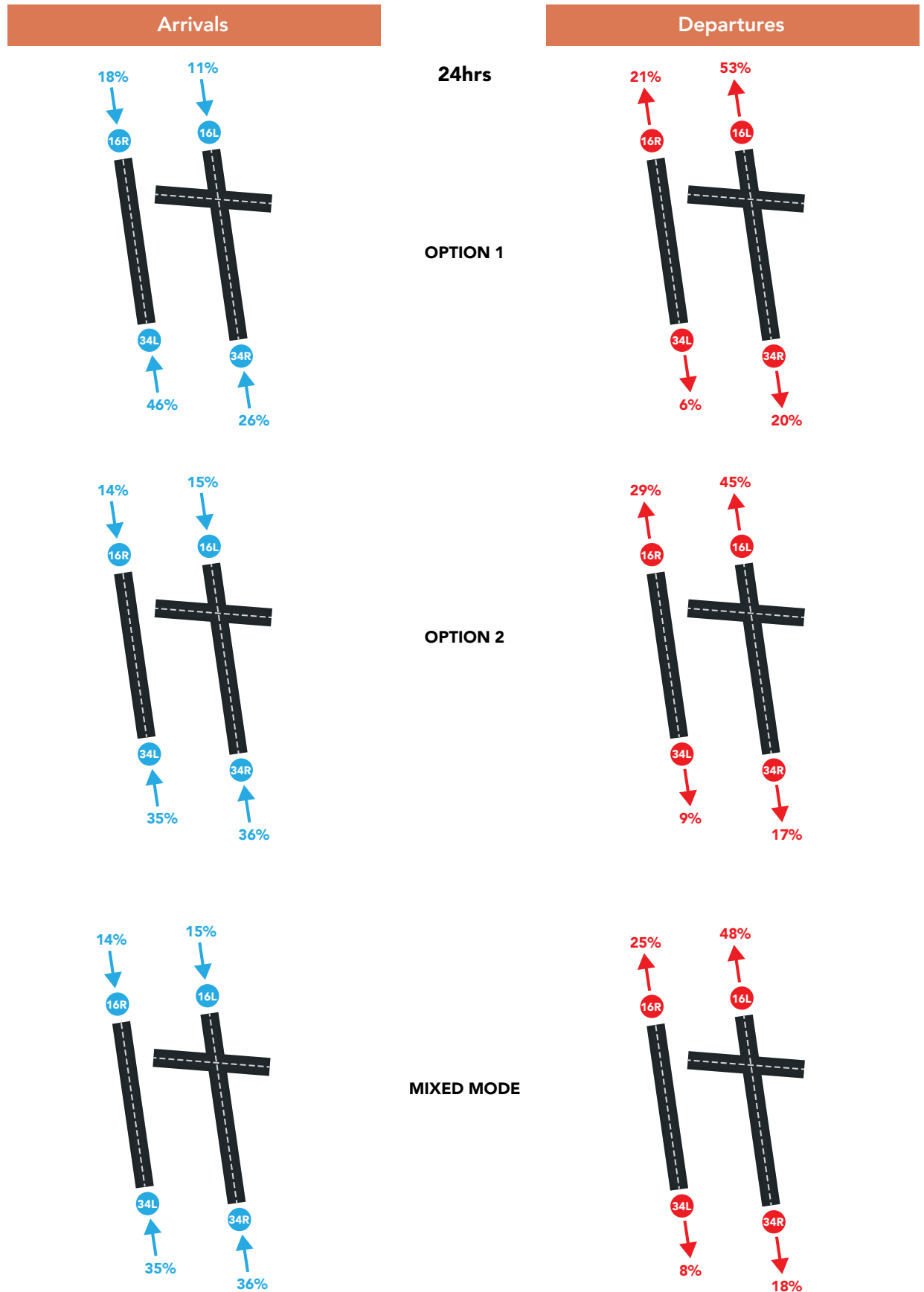
Predicted 2046 runway usage continues to demonstrate bias toward departures from the existing runway, largely due to use of mixed mode during peak times. In the earlier years of operating M3R, segregated modes are expected to accommodate demand more often.

The use of SODPROPS when available at night is evident in the forecast runway usage (Figure C4.30) with far fewer operations predicted south of the airport.

When SODPROPS is unavailable, Option 1 results in most departures off the existing runway (i.e. 34R in northerly winds and 16L in southerly winds) and arrivals onto the new runway (i.e. runway 34L in northerly winds and runway 16R in southerly winds). Given northerly winds are the primary condition that precludes SODPROPS, this regime results in a greater proportion of operations to the south of the new runway 16R/34L, as compared to existing runway 16L/34R.

Option 2, which complements SODPROPS as the primary noise-mitigation mode, is instead forecast to result in evenly distributed operations south of the airport at night. This balanced distribution would likely be achieved by the nightly alternating of the arrival and departure runways (as modelling assumed). However, other alternation regimes are also possible e.g. by time of day.

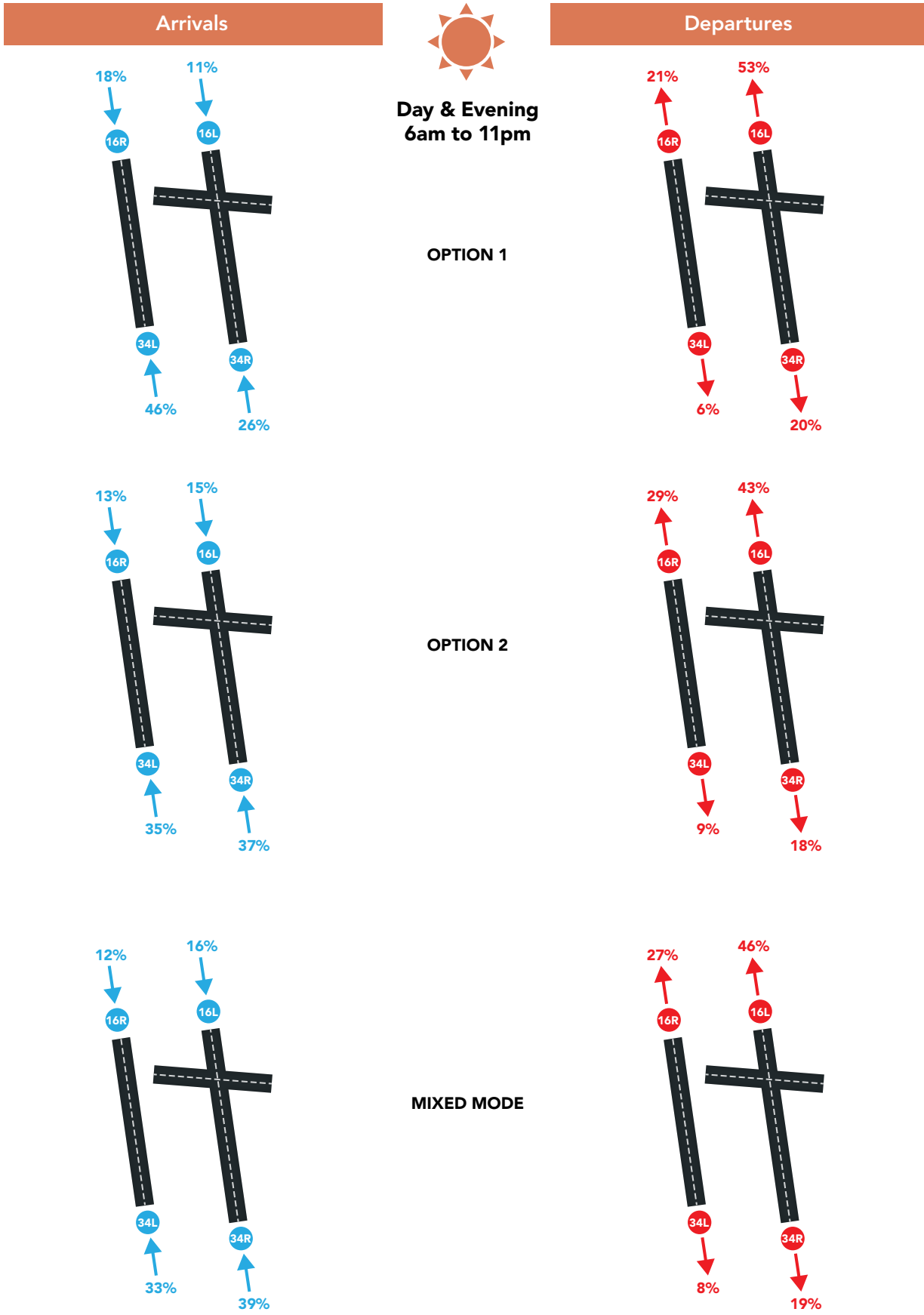
Figure C4.28
M3R 2046 – Runway usage 24 hours



Source: APAM & SoundIN, 2020

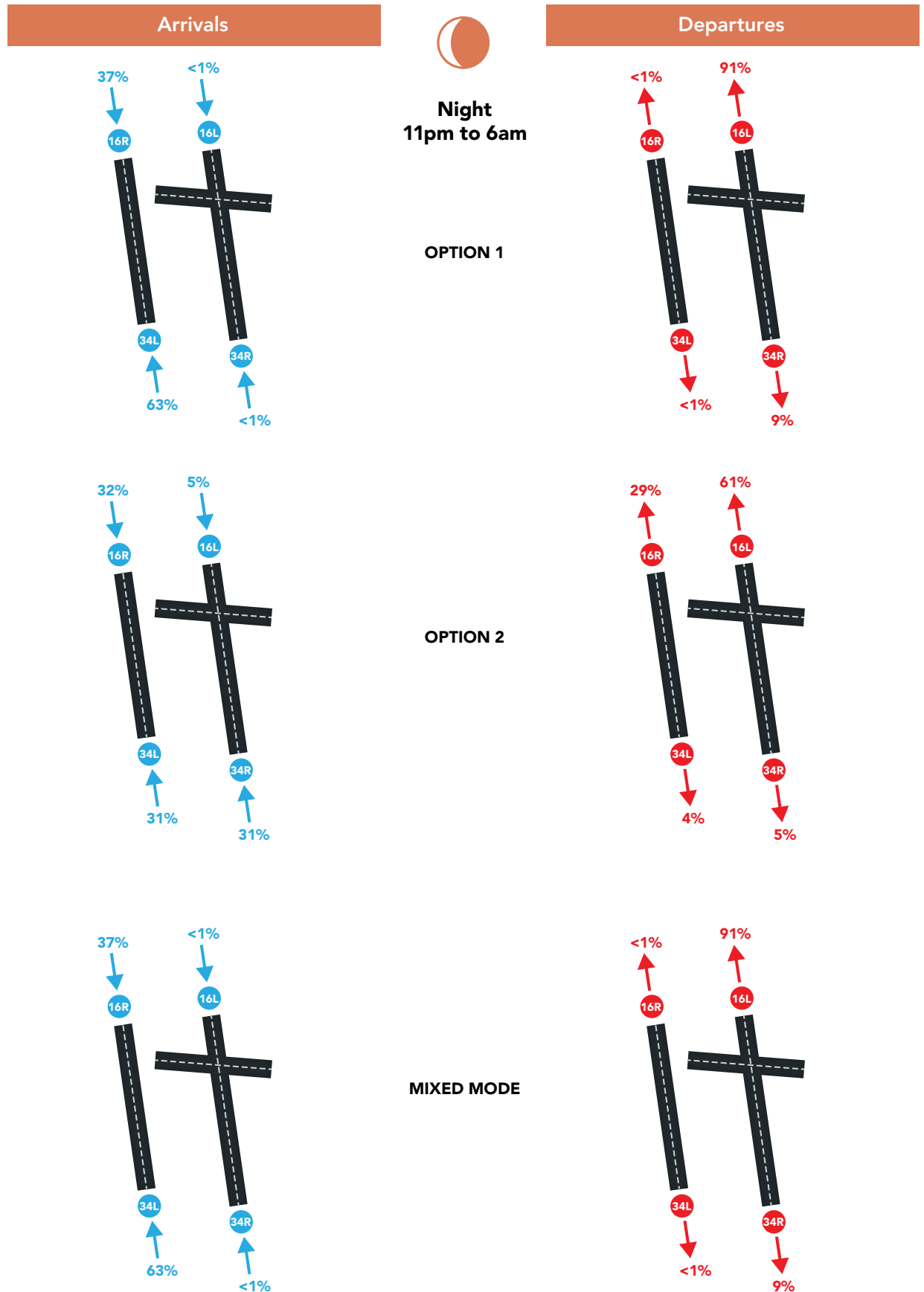
Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%. Mixed Mode night runway usage is based on Option 1 mode priorities and full mixed mode during the day

Figure C4.29
M3R 2046 – Runway usage day and evening (6am to 11pm)



Source: APAM & SoundIN, 2020
 Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

Figure C4.30
M3R 2046 – Runway usage night (11pm to 6am)



Source: APAM & SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%. Mixed Mode night runway usage is based on Option 1 mode priorities and full mixed mode during the day

C4.6.2

M3R N-above noise contours

N60 and N70 noise contours have been produced for M3R with the proposed Noise Abatement Procedure (NAP) options (see Section C4.5.3 for details). Predictions were made for each nominal assessment year: 2026, 2031 and 2046. As noted in Chapter C3: Aircraft Noise Modelling Methodology, predictions for only 2026 and 2046 are presented.

Standard N-above charts represent noise exposure on an average day (i.e. the number of events occurring per day, averaged over 365 days per year).

This section also presents the 90th percentile values of N60 and N70, calculated over all days (i.e. the number of daily aircraft noise events over 70 A-weighted decibels exceeded on about 36 days a year i.e. 10 per cent). This can be thought of as a 'typical busy day'. These 90th percentile N-above values are therefore designated typical busy day NX(90)60 and NX(90)70. See Chapter C3: Aircraft Noise Modelling Methodology, Section C3.5.2, for a discussion of aircraft noise metrics.

Typical busy day 'N-above equals five' contours are shown as a dashed line outside the average day N-above contours on each chart. A selection of typical busy day N-above contours showing more than five events is presented in Section C4.6.3.

N70 day and evening – 2026 Mixed Mode

Figure C4.31 presents M3R's forecast N70 for 2026 with full mixed mode operations during the day and evening period.

Use of mixed-mode operations from 6am to 11pm on a single day is not anticipated to be required often in the early years of M3R operation. However, there may be periods when it is preferred for operational reasons (e.g. after operational disruptions have caused network-wide schedule delays that need to be recovered).

The N70 contours extend predominantly along the proposed standard instrument departure and arrival routes (many including segments along the extended runway centreline). The extent of the N70=5 contour is approximately the same south of both the new and existing runways (approximately 11.5 kilometres from the runway end).

North of the airport, the effect of terrain and vertical navigation requirements for some departures becomes evident. The N70=5 contour extends between 15 kilometres and 38 kilometres along these routes. The N70=5 events and greater contours avoid built-up areas north of the airport. The higher N70 thresholds (e.g. N70=100 and above) reflect the bias towards the existing runway, particularly for departures (see Section C4.6.1).

N70 day and evening – 2026 Option 1

Figure C4.32 presents M3R's forecast N70 for 2026 with the Option 1 strategy. Compared to the mixed mode N70 (Figure C4.31), the extensive use of the existing runway for departures and the new runway for arrivals is evident.

Although similar extents from the airport are maintained (approximately 11.5 kilometres south of the airport for the N70=5) the N70 contours associated with the new runway are far narrower. This is due to the relative noise levels of arrivals and departures, and how they reduce with distance from the airport (see Section C4.6.8).

The appearance of N70 contours associated with the shortened approach to runway 34R from the east/south-east (overhead Essendon Fields Airport) is also noteworthy. This existing flight path will be prohibited by the rules dictating the safe operation of independent mixed mode. It is therefore absent from the full mixed mode contours in Figure C4.31 (mixed mode operations).

The extent of the N70 contours associated with long-haul departures from runway 34R towards the north-west is noticeably reduced by the greater use of segregated modes. In the mixed mode airspace operation, these departures require a vertical navigation restriction to keep them below arrivals. This restriction is not necessary in the segregated mode design. The benefits of CCO are thereby achieved – including reduced noise exposure towards the north-west.

There is a notable absence of any significant N70 contours associated with the left turn of departures off runway 34L in Figure C4.32. This is because the bias of departures to the existing runway means departures using this turn are too infrequent to impact the N70=5 contour.

N70 day and evening – 2026 Option 2

Figure C4.33 presents the forecast M3R N70 for 2026 with the Option 2 strategy. The resulting N70 contours lack the distinct arrival-and-departure bias evident in the Option 1 N70 (Figure C4.32). Instead, they more closely resemble the full mixed mode equivalent (Figure C4.31).

The N70 contours associated with the existing shortened approach to runway 34R from the east/south-east are evident, similar to Option 1. So too is the limited extent of long-haul departures from runway 34R toward the north-west.

N70 contours associated with the early left turn of departures off runway 34L are evident, similar to the full mixed mode operations.

N70 day and evening – 2046

Figure C4.34 to Figure C4.36 present the M3R N70 for 2046 with the mixed mode, Option 1 and Option 2. Although the 2026 and 2046 N70 contours share generally similar extents and characteristics, the 2046 N70 contour set exhibits an extensive correlation between the three operating strategies. This is because mixed mode operations are required for a greater portion of the day in 2046 to accommodate increased demand.

The growth in flight volumes between 2026 and 2046 results in larger N70 extents on some routes. The number of long-haul departures off runway 34R towards the north-west is forecast to increase, and the N70 contours accordingly expand.

On other routes, although the number of operations is also forecast to increase, the aircraft assigned are expected to be newer-generation, quieter aircraft. Consequently, the N70 extent of some higher thresholds (e.g. 50 or more) is predicted to increase (in line with more aircraft movements); whereas the N70 extent of lower thresholds is expected to decrease because fewer of the loudest aircraft will be operating then.

The progression of the 20, 50, 100 and 200 N70 contours away from the airport is generally evident from 2026 to 2046.

N70 24hr

Figure C4.37 to Figure C4.40 present the 24hr N70 for 2026 and 2046 for Option 1 and Option 2.

The 24hr N70 contours are very similar to the N70 day and evening contours. There are marginal increases in the contours for both options for the N70 24hours. This increase is driven by the addition of night-time operations to the analysis period.

Option 1 shows a slightly larger increase compared with Option 2 to the north. This is due to Option 1 allocating more departures to the existing runway, whereas Option 2 distributes movements between the runways more evenly.

N60 night

Figure C4.41 and Figure C4.42 present the forecast M3R N60 for 2026 at night with Option 1 and Option 2 strategies respectively.

Both are forecast to result in similar N60 night contours north of the airport, where the driving factor is use of the SODPROPS mode whenever possible. N60=5 contours are predicted to extend approximately 25 kilometres from the runways along the standard arrival and departure routes.

Operations south of the airport are only expected when SODPROPS is precluded – most often due to wind from the north or south that represents unacceptable tailwinds. The difference in runway usage presented in Section C4.6.1 is clearly evident in the resulting N60 night contours.

Option 1 – which would prioritise arrivals onto the new runway and departures from the existing runway – results in a predicted N60 night clearly affected by arrivals onto 34L from the south (noting the prevalence of northerly winds as the condition that prohibits SODPROPS).

Option 2 – which would evenly distribute arrivals and departures between the new and existing runways during segregated mode operations – results in a predicted N60 night that favours neither runway south of the airport. The resulting contour is wider than that of Option 1, though it should be noted that this is because the runway in use would alternate (likely each night). The resulting aircraft noise footprint on a night when the new runway is in use for arrivals would be identical for both options. Both of these alternating night-time footprints contribute to the annual average N60 night contour.

It can be seen that while the N60=5 contour is more extensive in Option 2, the N60=20 extents are reduced compared to Option 1.

Departure flight paths to the south are not evident in the N60 for either option. However, the typical busy day N60 (NX₍₉₀₎ 60) does reflect those periods when departures south of the airport are forecast, and indicates this is expected on more than 10 per cent of nights. A selection of typical busy day N-above contours for more than two events is presented in Section C4.6.3.

Figure C4.43 and Figure C4.44 present the forecast M3R N60 for 2046 at night, for the Option 1 and Option 2 strategies respectively. With reference to the corresponding 2026 N60 contours (Figure C4.41 and Figure C4.42), the 2046 N60 contours exhibit generally similar characteristics.

In general, the extent of the N60=5 contours are similar between the corresponding 2026 and 2046 scenarios. The progression of the 10 and 20 N60 contours away from the airport, and the emergence of an N60=50, is apparent from 2026 to 2046. This reflects the increase in forecast operations in the 11pm-to-6am period over time.

N60 24hr

Figure C4.45 and Figure C4.46 present the 24hr N60 for 2026 for M3R Option 1 and Option 2.

The N60 24hr=5 contours for opening day highlight the proposed flight paths extending beyond the N70 24hr=5, N70 day & evening=5 and N60 night=5 contours.

The N60 24hr=5 contour for 2026 Option 1 extends beyond the 30km radius to the north of the airport. The contour 'journey' is approximately 40km to the north-east and approximately 38-42km to the north-west. Contours to the south remain within the 30km radius of the airport.

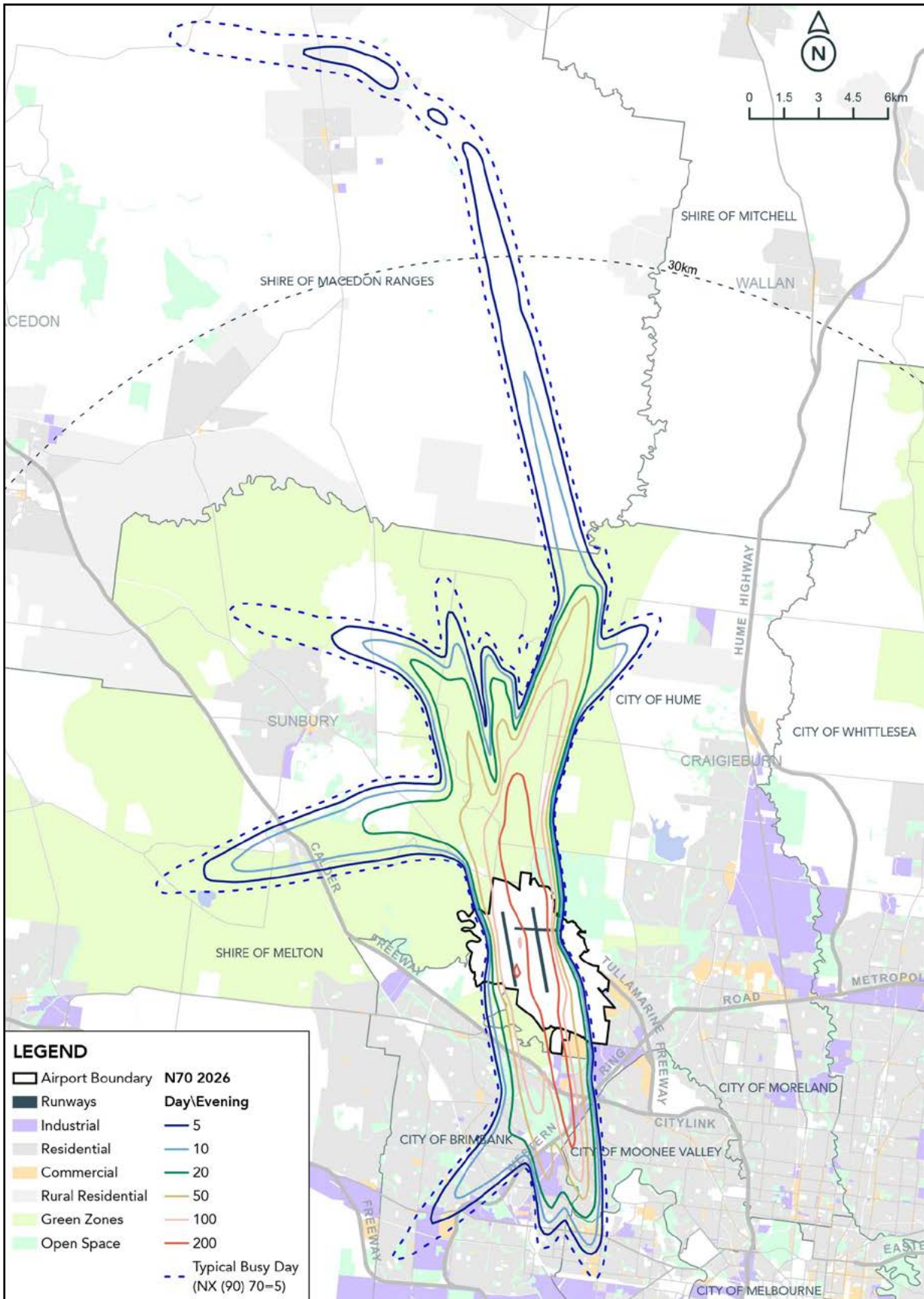
Option 2 contours are similar in shape to Option 1, with the exception of contours to the west that are driven by early left-turn departures from Runway 16R and Runway 34L.

Figure C4.47 and Figure C4.48 present the 24hr N60 for 2046 for Option 1 and Option 2 respectively.

The 2046 N60 24hr contour set exhibits extensive correlation between the two operating strategies. This is because mixed mode operations are required for a greater portion of the day in 2046 to accommodate the increased demand.

The progression of the 20, 50, 100 and 200 N60 contours away from the airport is generally evident from 2026 to 2046.

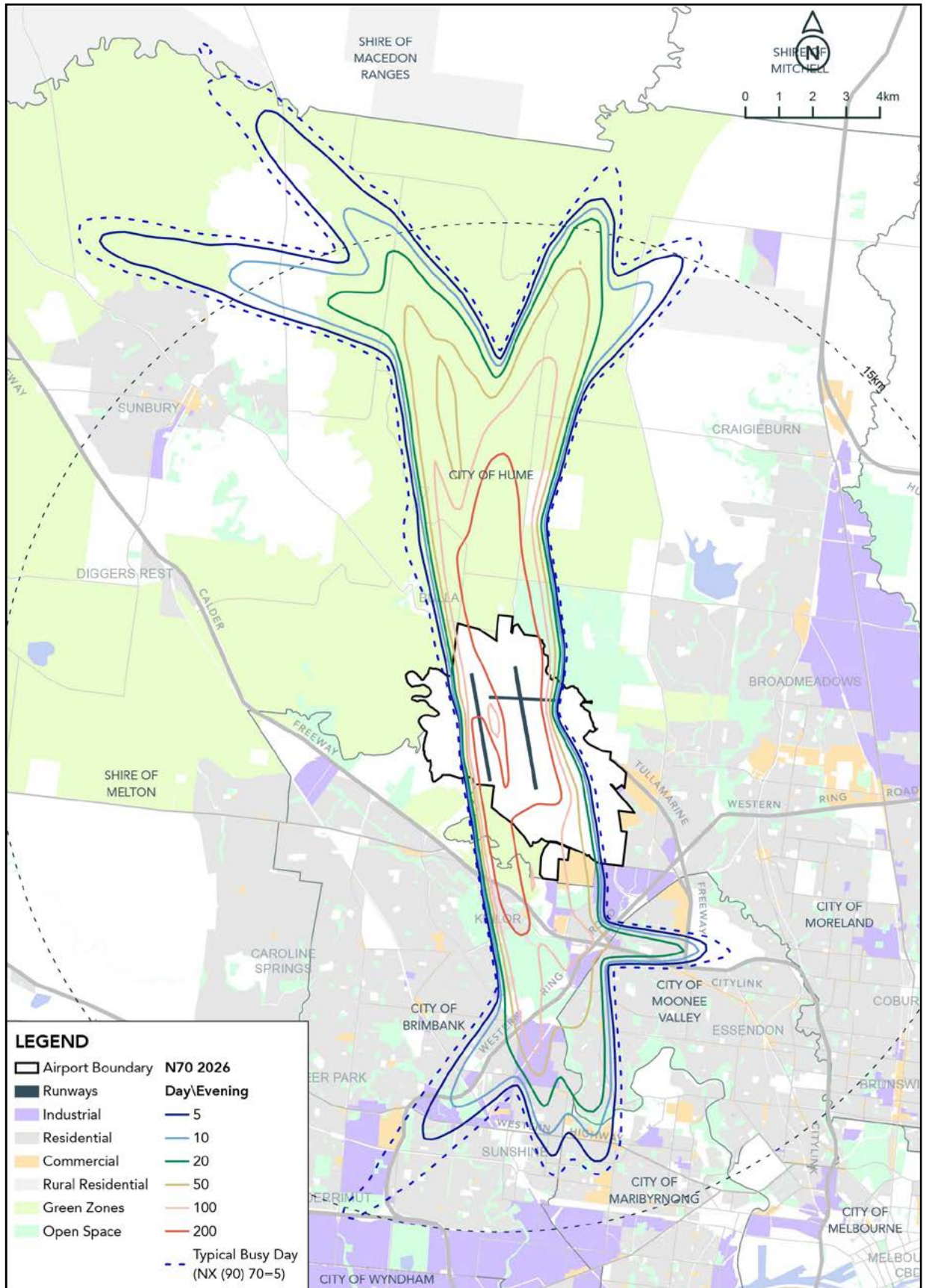
Figure C4.31
M3R Mixed Mode 2026 – N70 annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

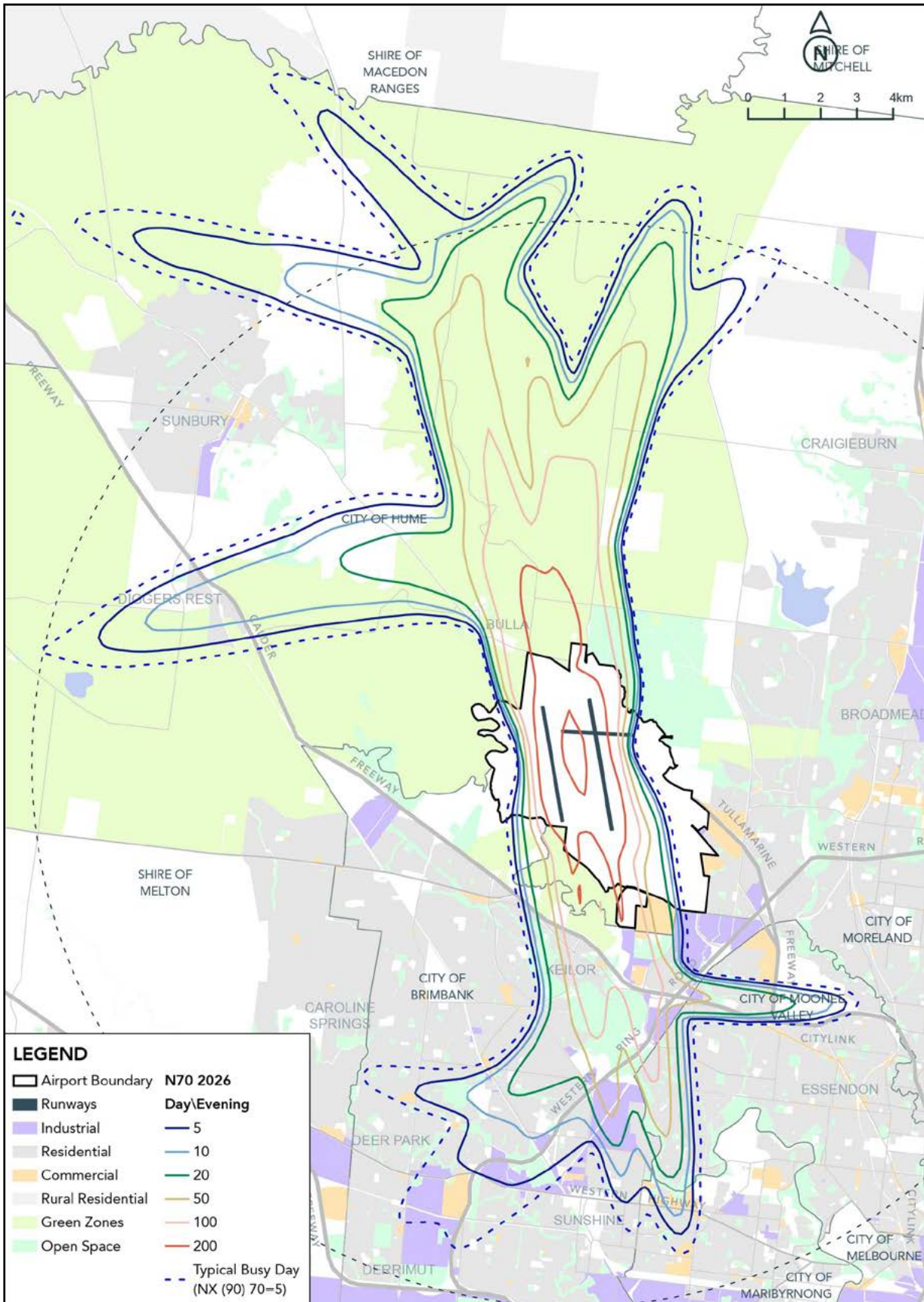
Figure C4.32
M3R Option 1 2026 – N70 annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

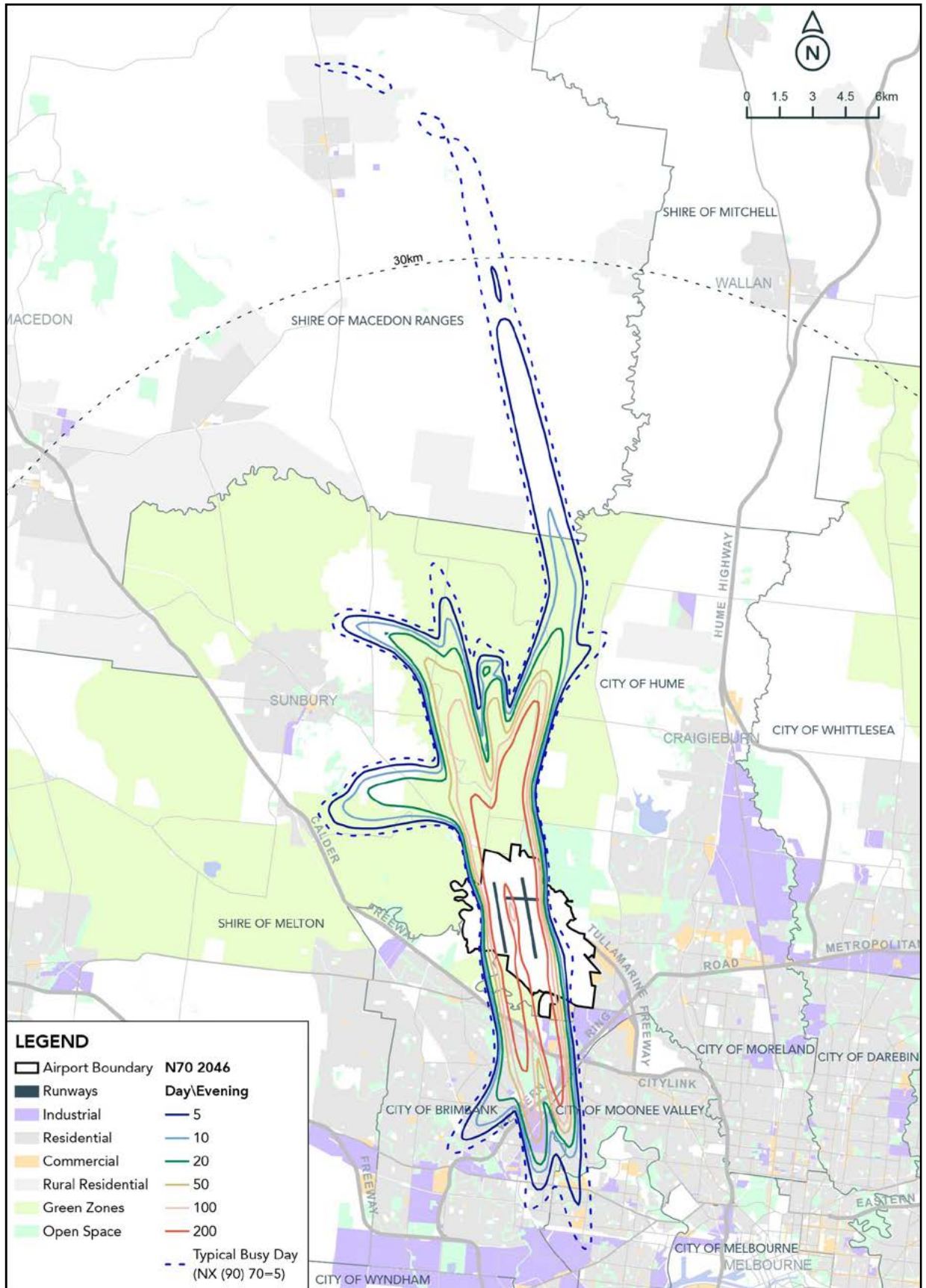
Figure C4.33
M3R Option 2 2026 – N70 annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

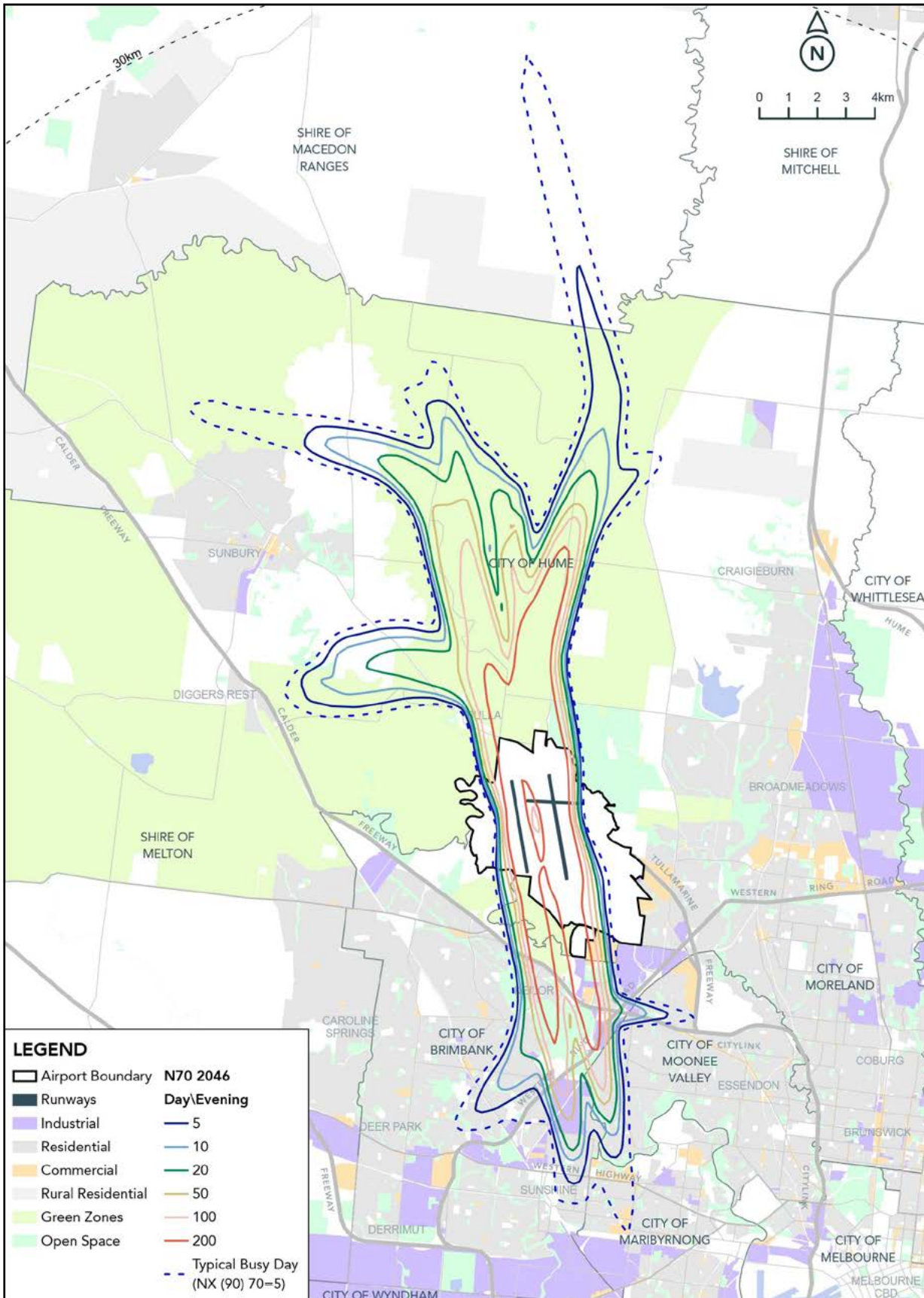
Figure C4.34
M3R Mixed Mode 2046 – N70 annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

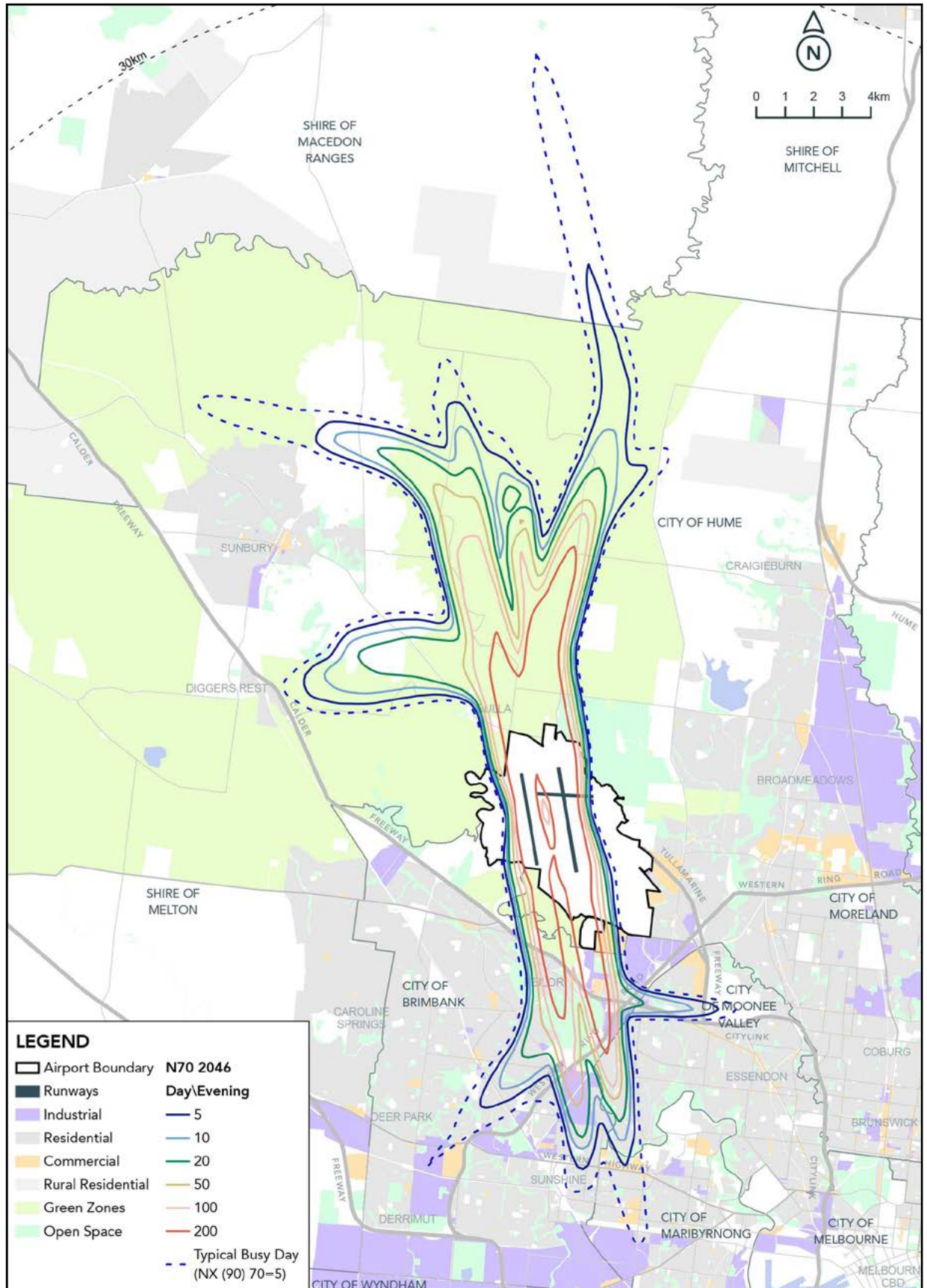
Figure C4.35
M3R Option 1 2046 – N70 annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

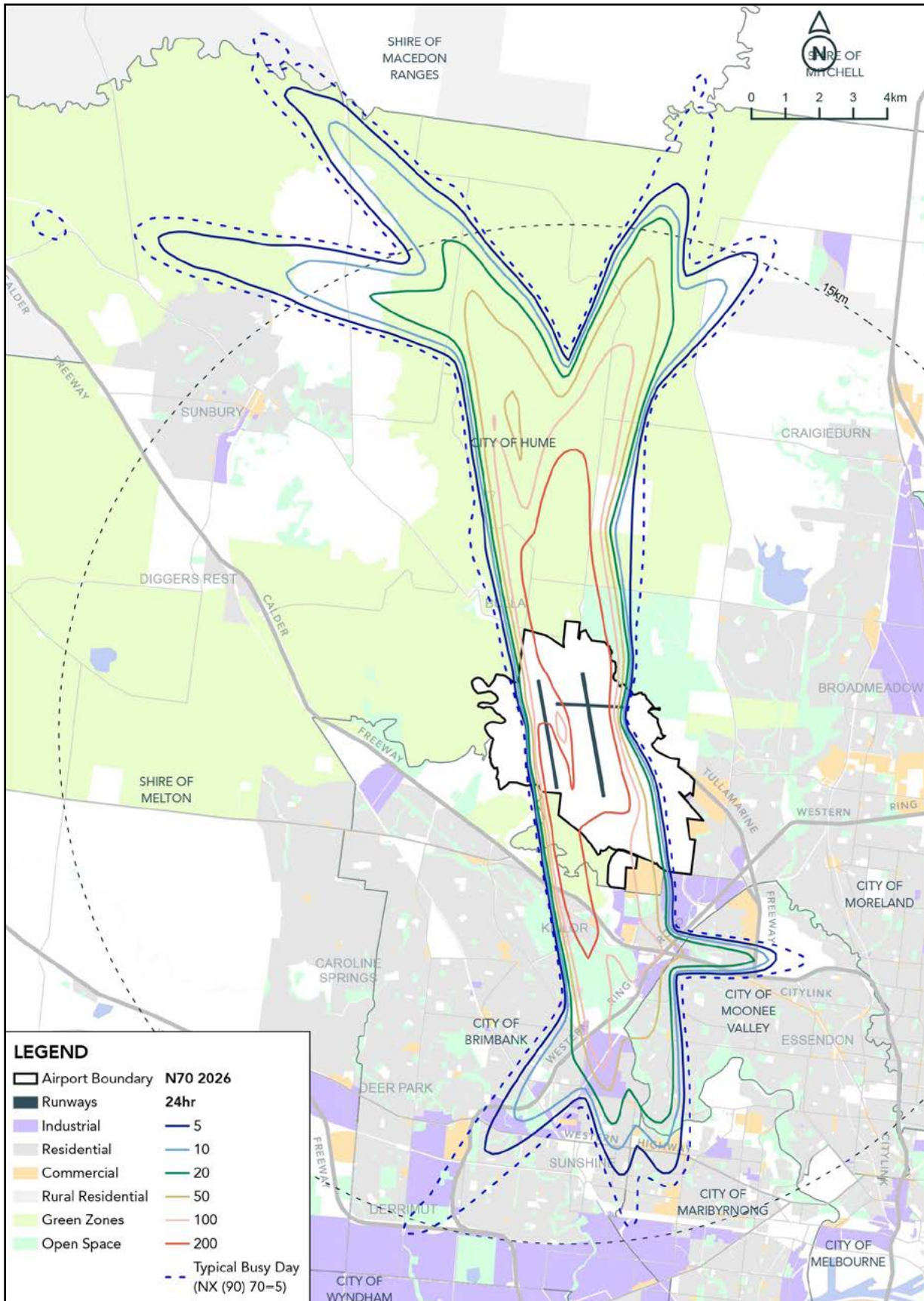
Figure C4.36
M3R Option 2 2046 – N70 annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

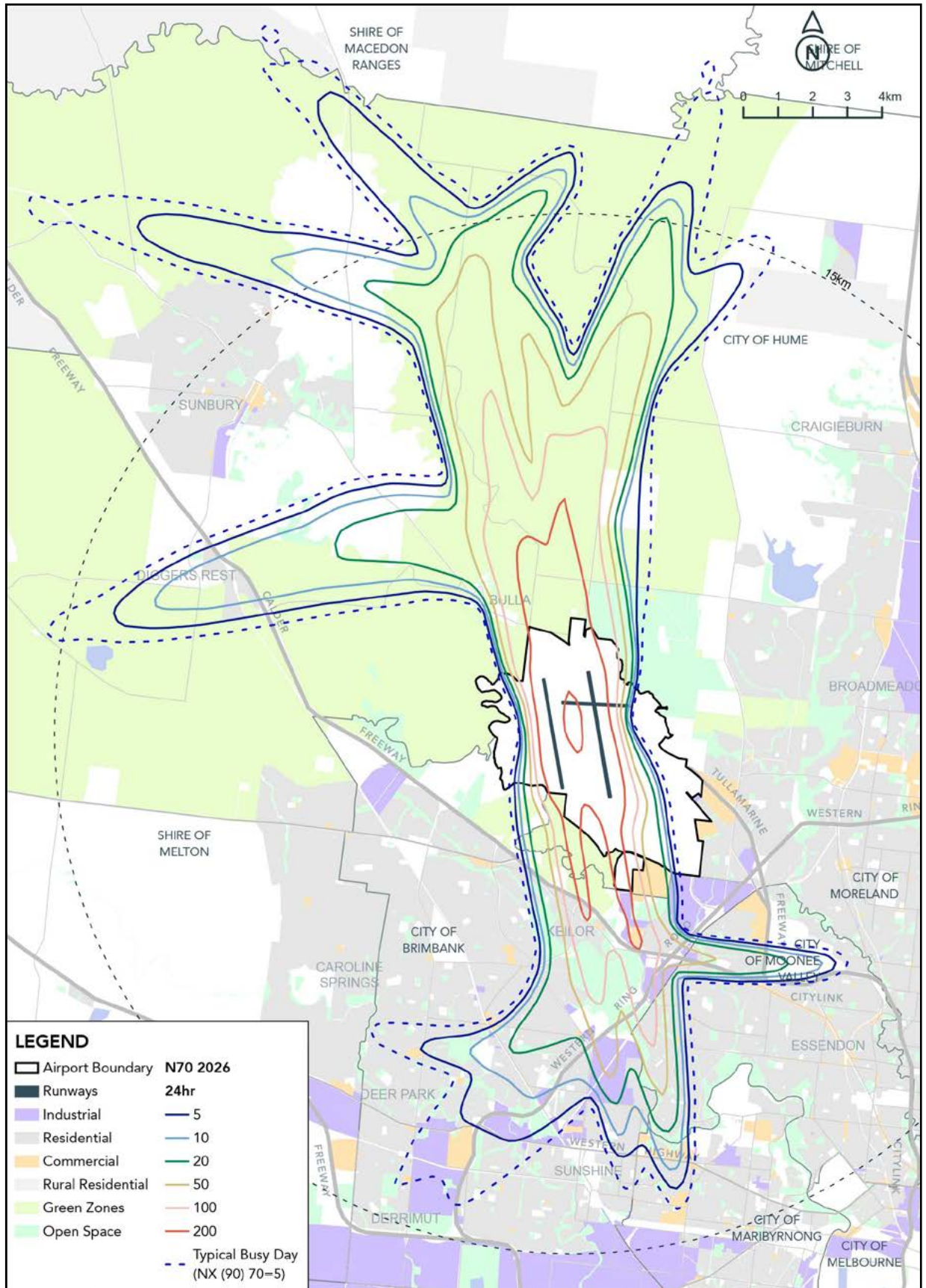
Figure C4.37
M3R Option 1 2026 – N70 annual 24 hours



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

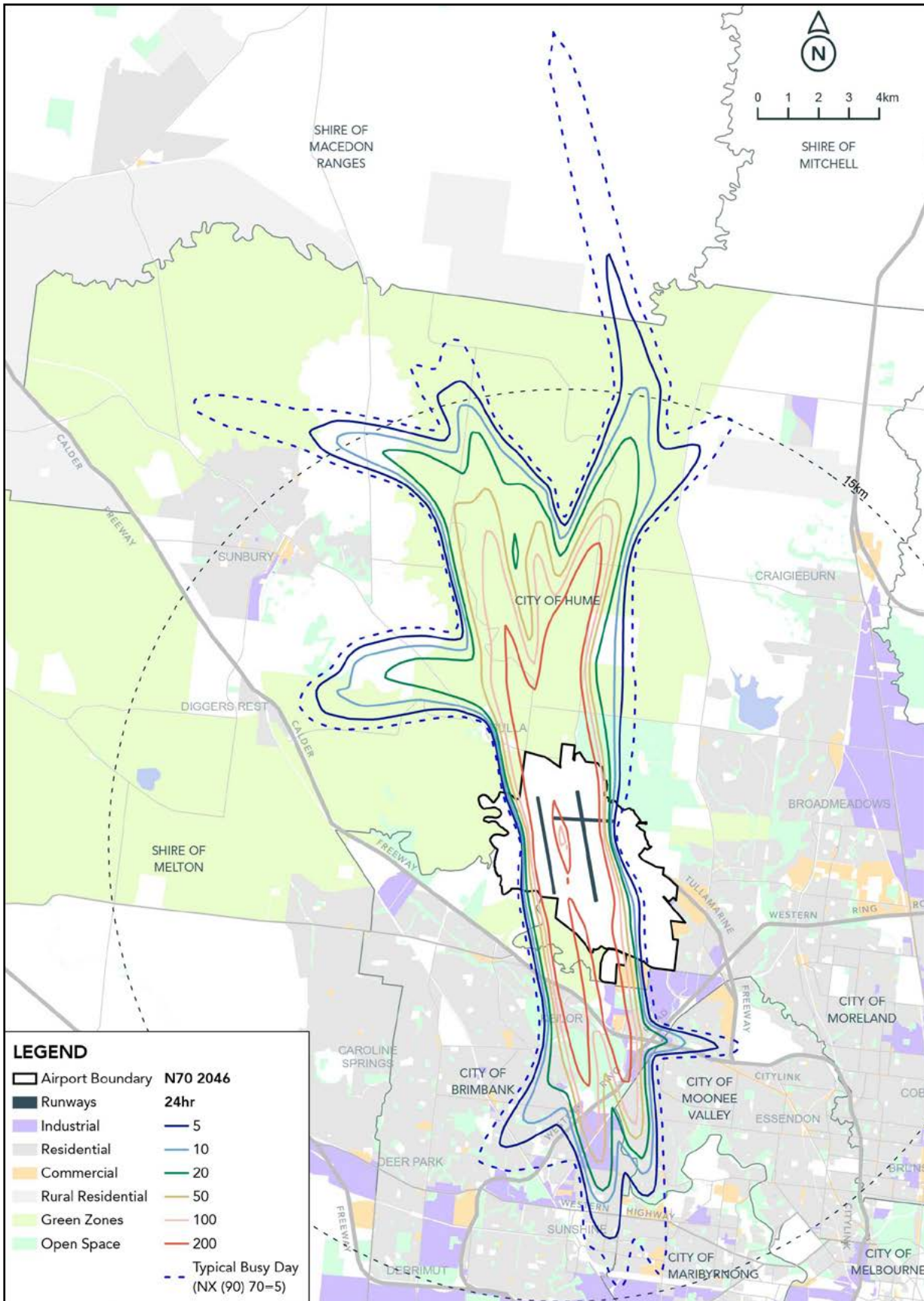
Figure C4.38
M3R Option 2 2026 – N70 annual 24 hours



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

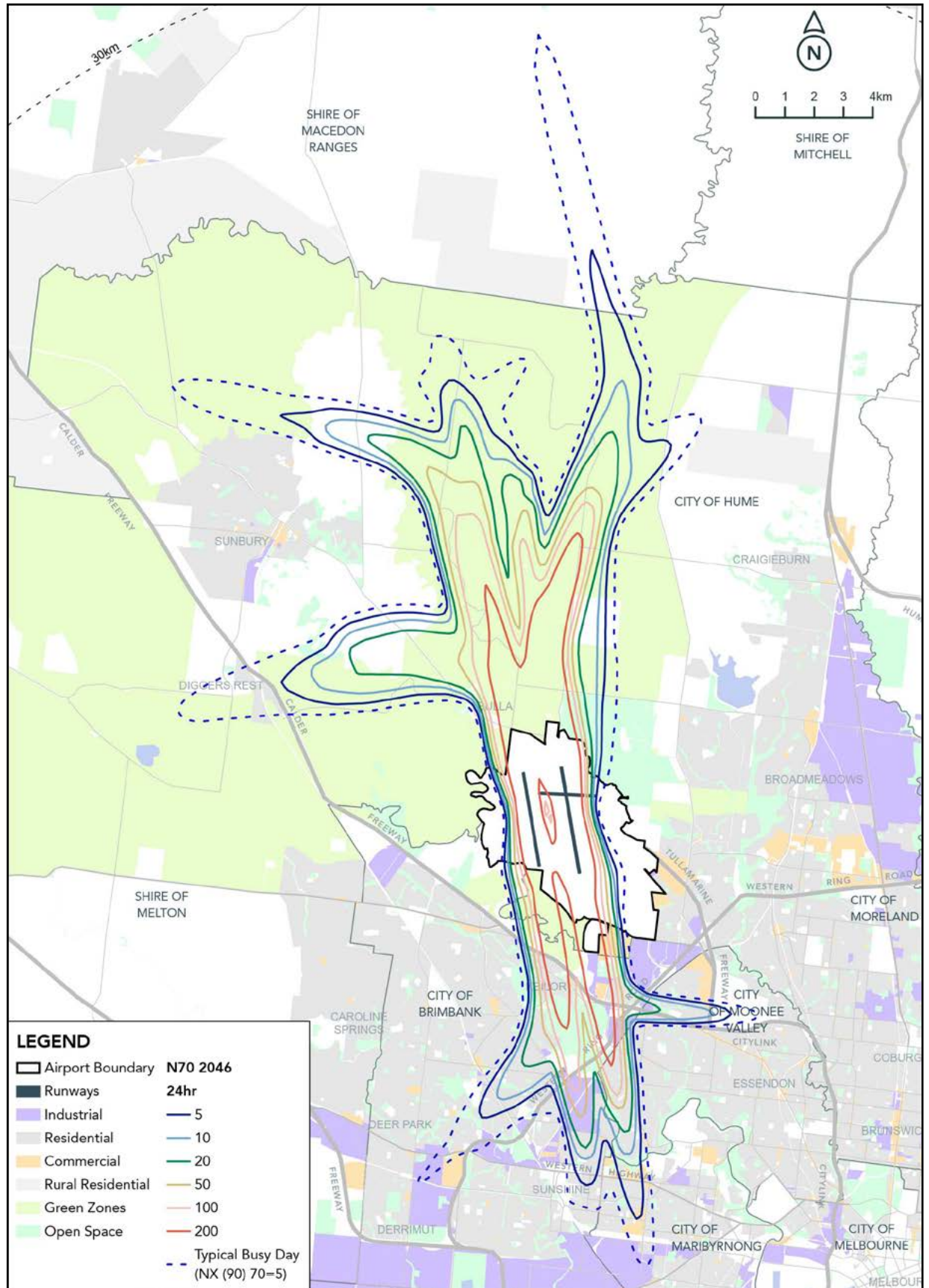
Figure C4.39
M3R Option 1 2046 – N70 annual 24 hours



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

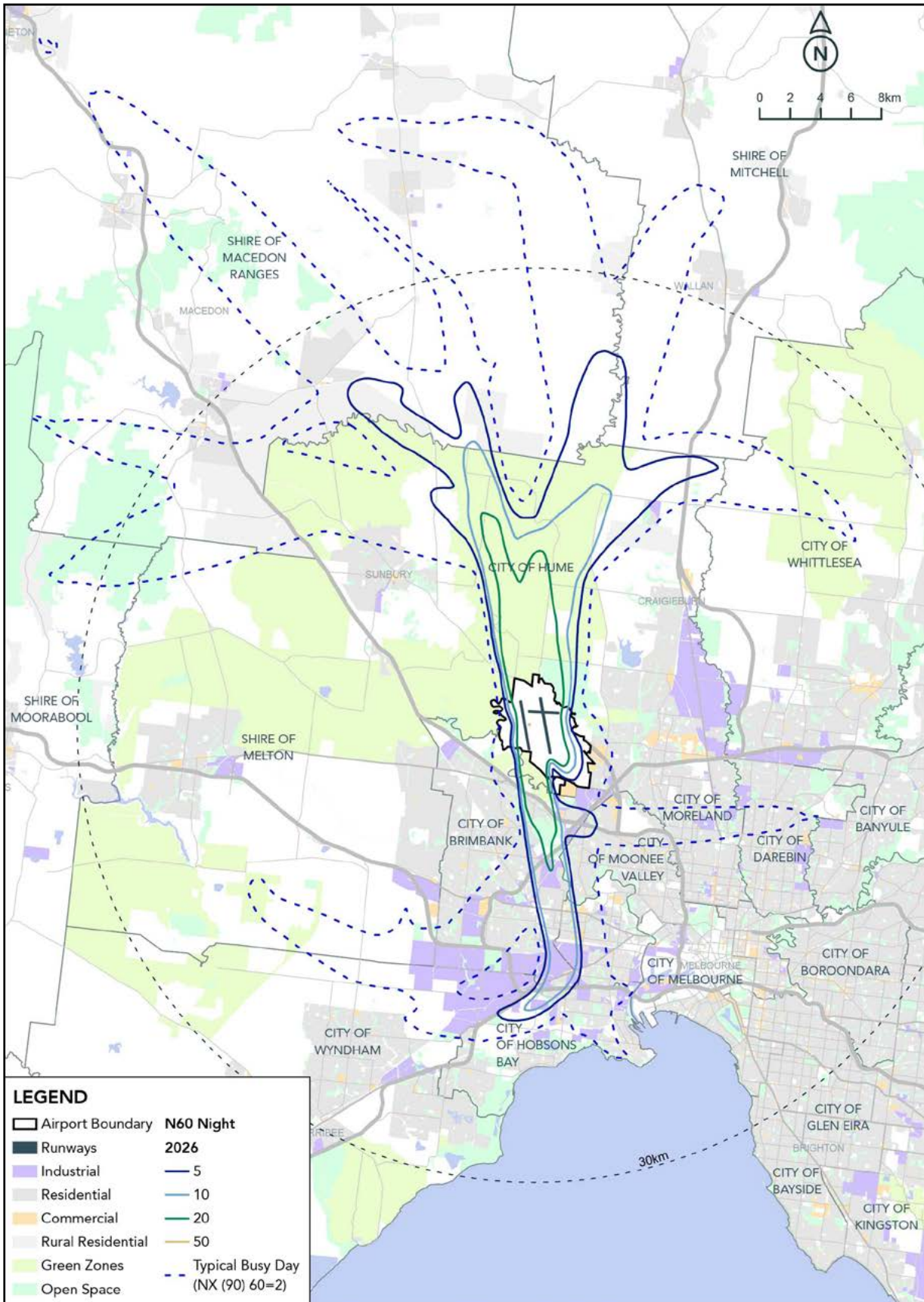
Figure C4.40
M3R Option 2 2046 – N70 annual 24 hours



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

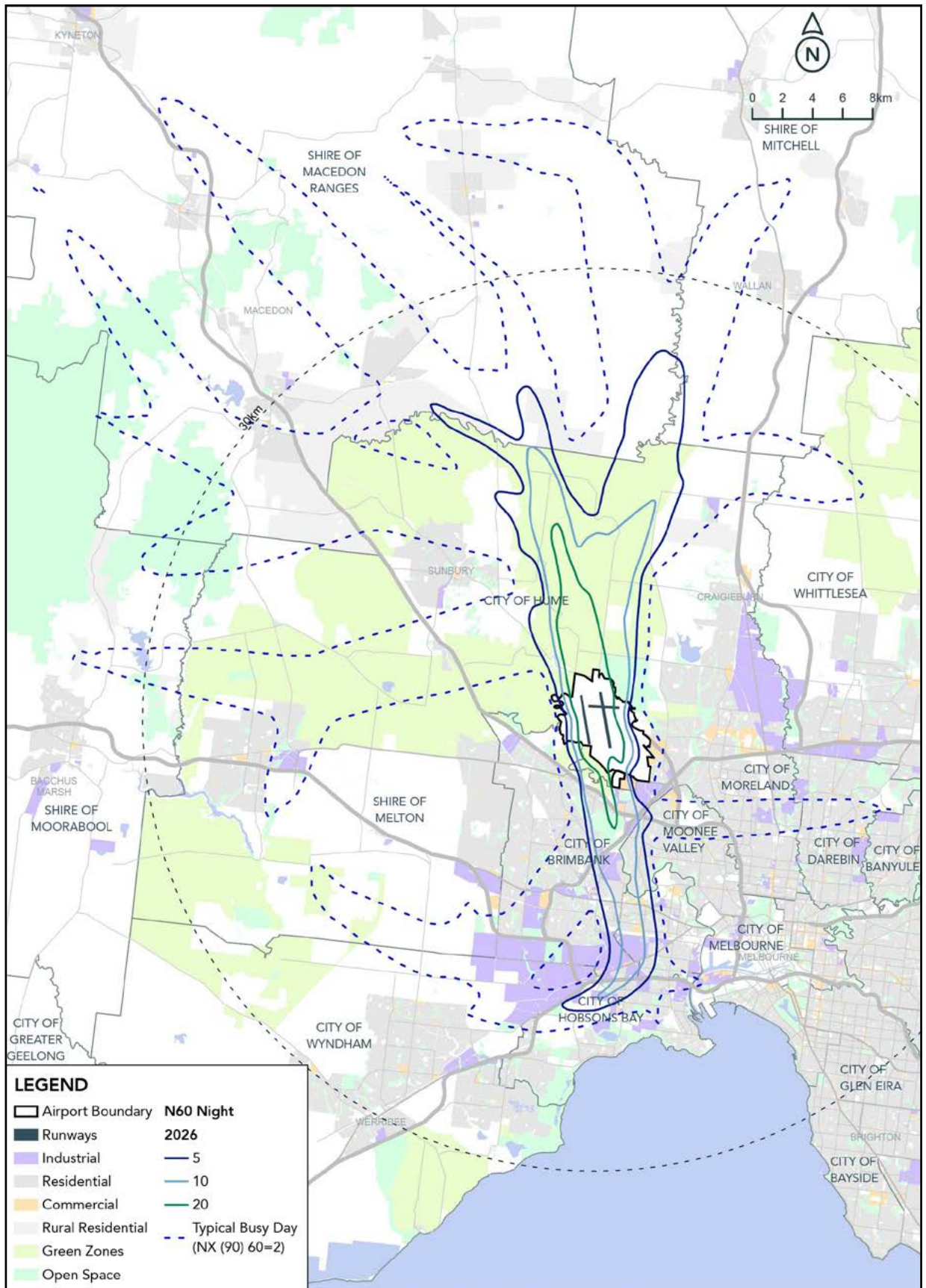
Figure C4.41
M3R Option 1 2026 – N60 annual night (11pm to 6am)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

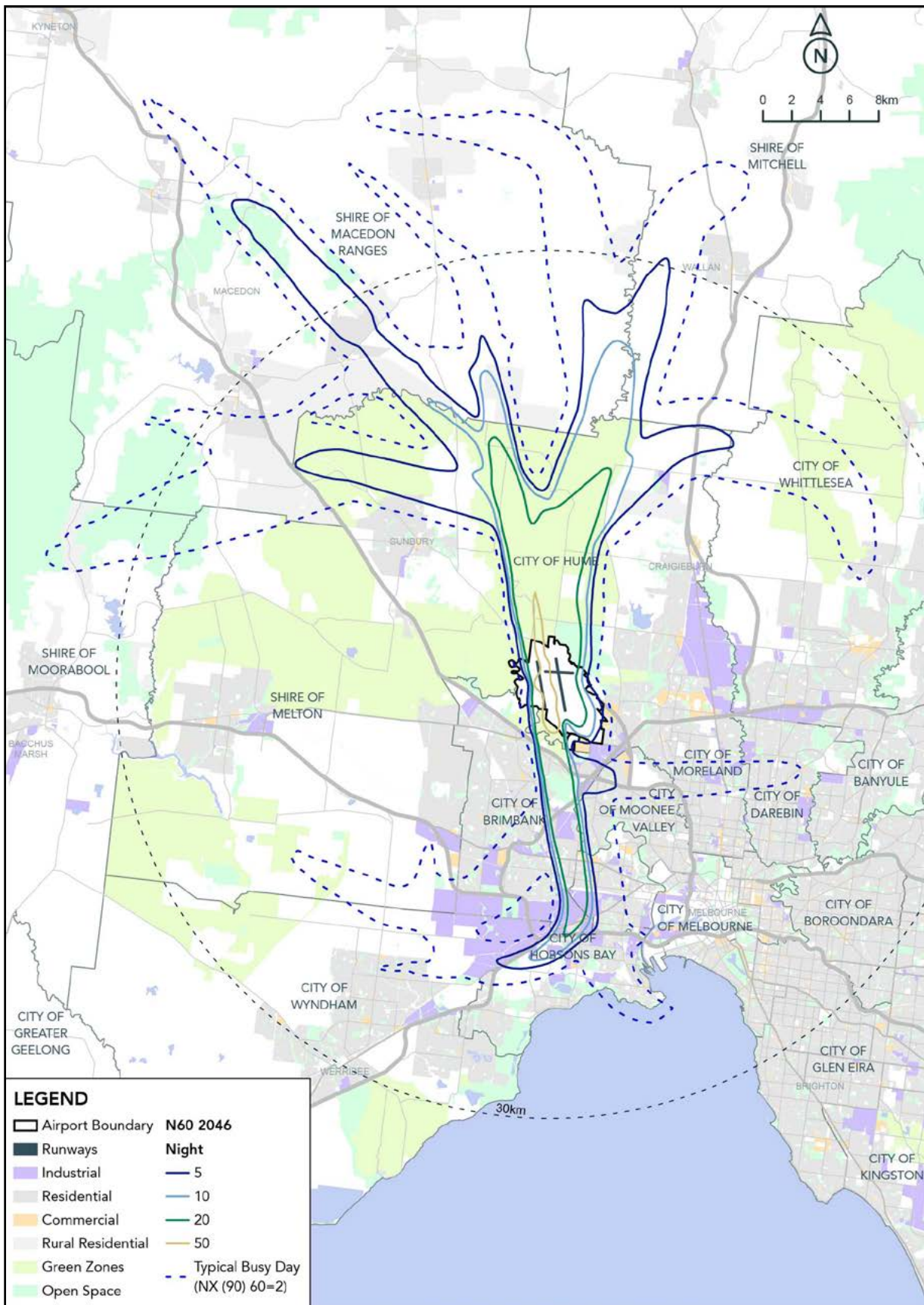
Figure C4.42
M3R Option 2 2026 – N60 annual night (11pm to 6am)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

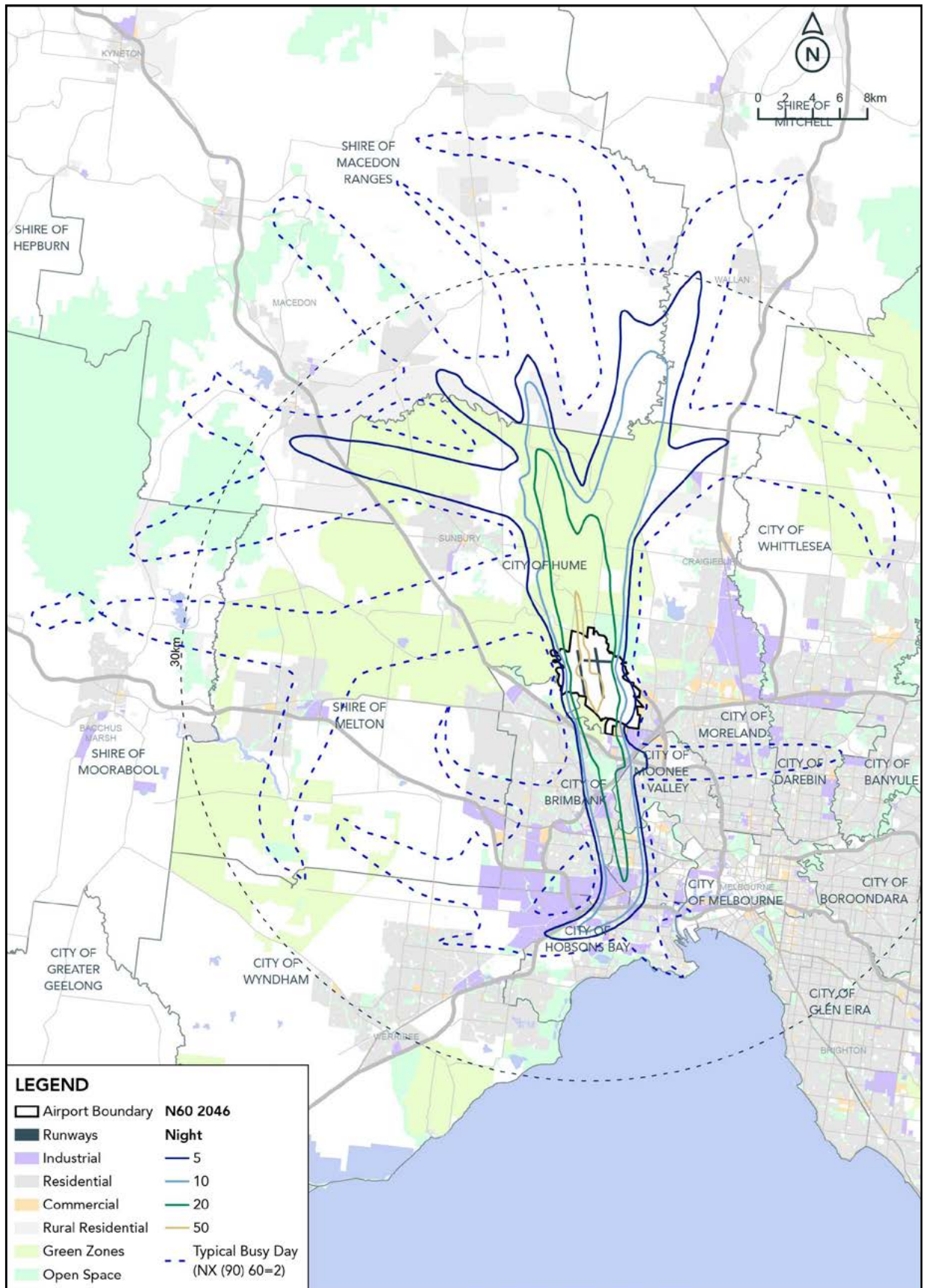
Figure C4.43
M3R Option 1 2046 – N60 annual night (11pm to 6am)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

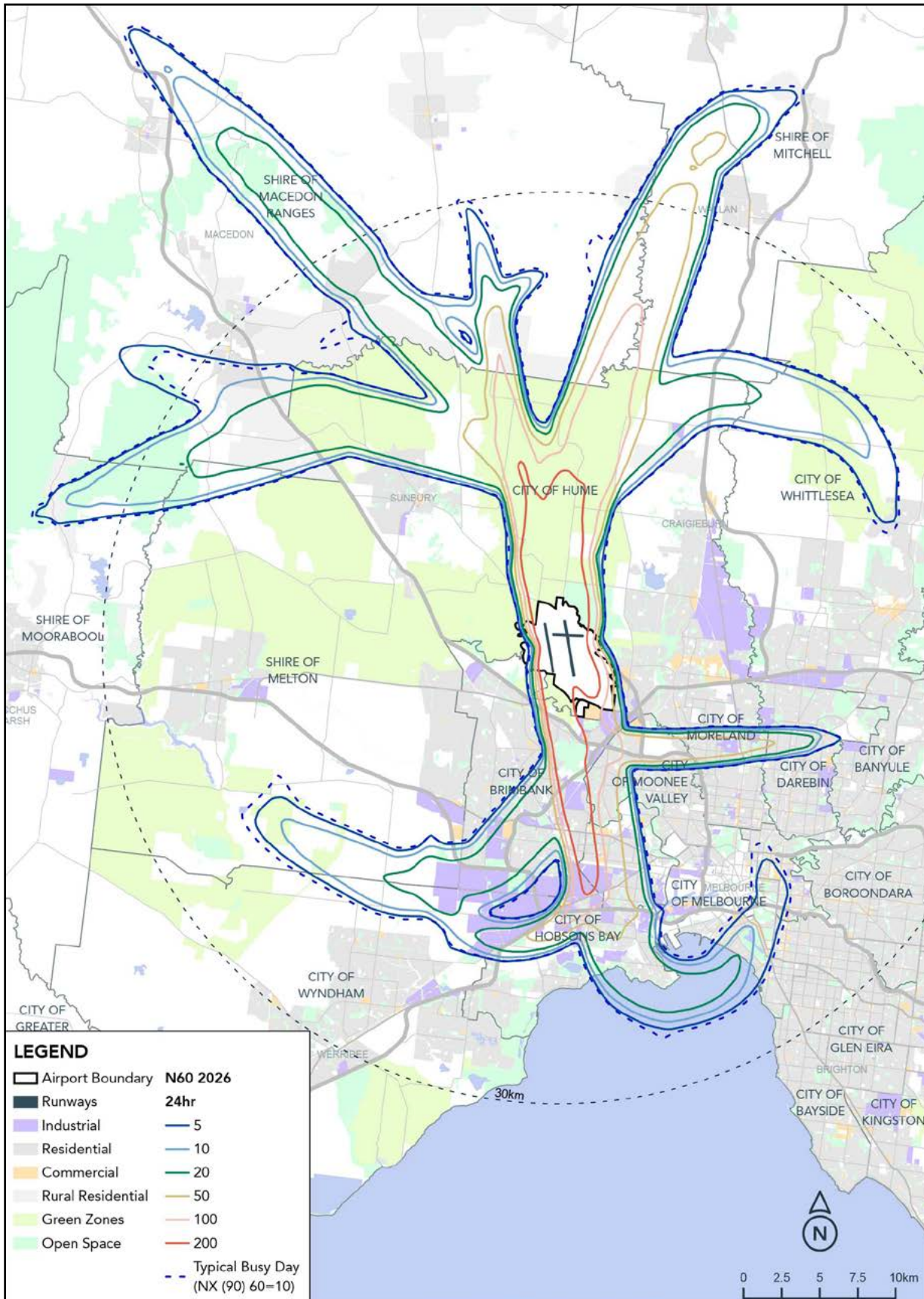
Figure C4.44
M3R Option 2 2046 – N60 annual night (11pm to 6am)



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

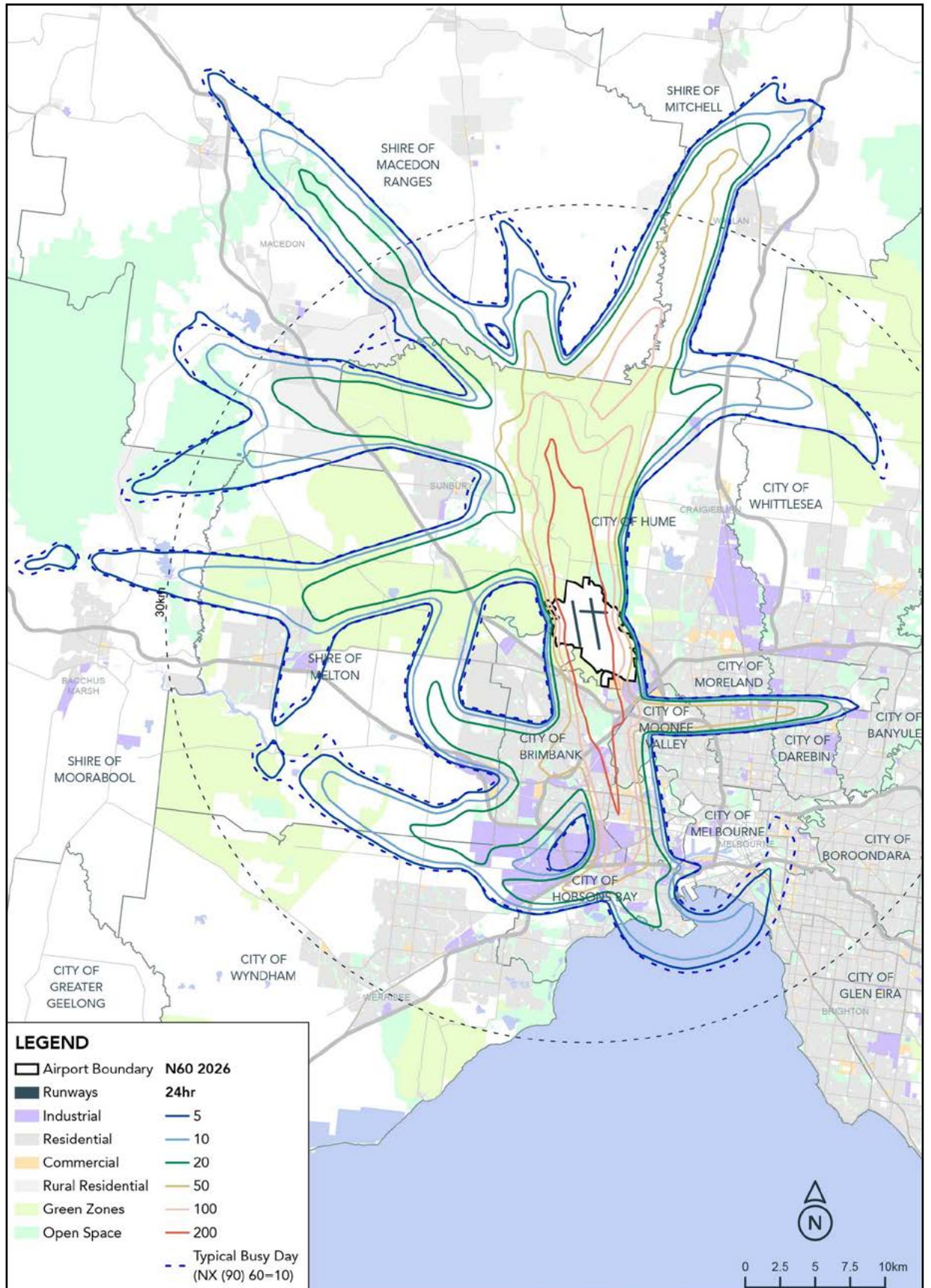
Figure C4.45
M3R Option 1 2026 – N60 annual 24 hours



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

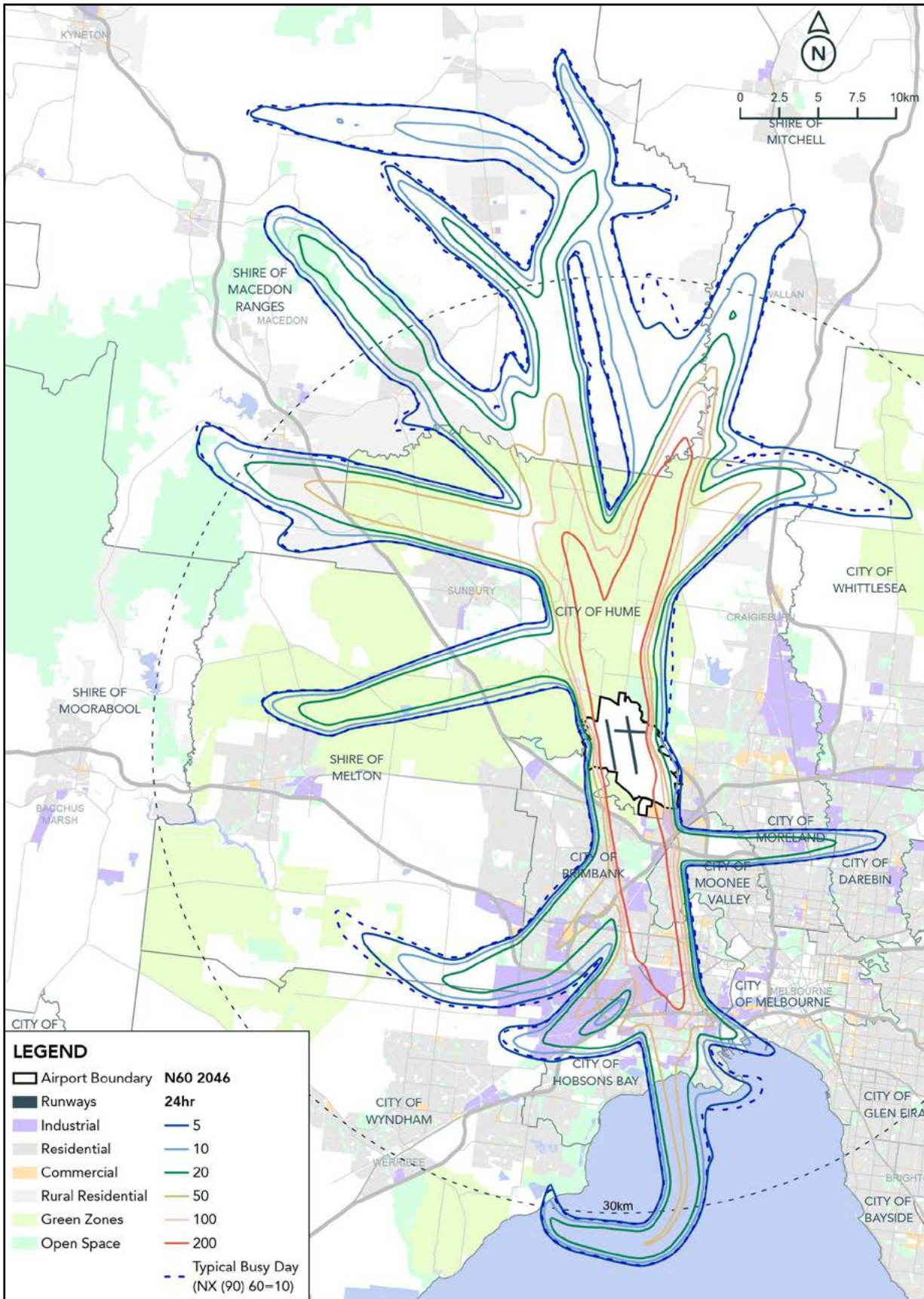
Figure C4.46
M3R Option 2 2026 – N60 annual 24 hours



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

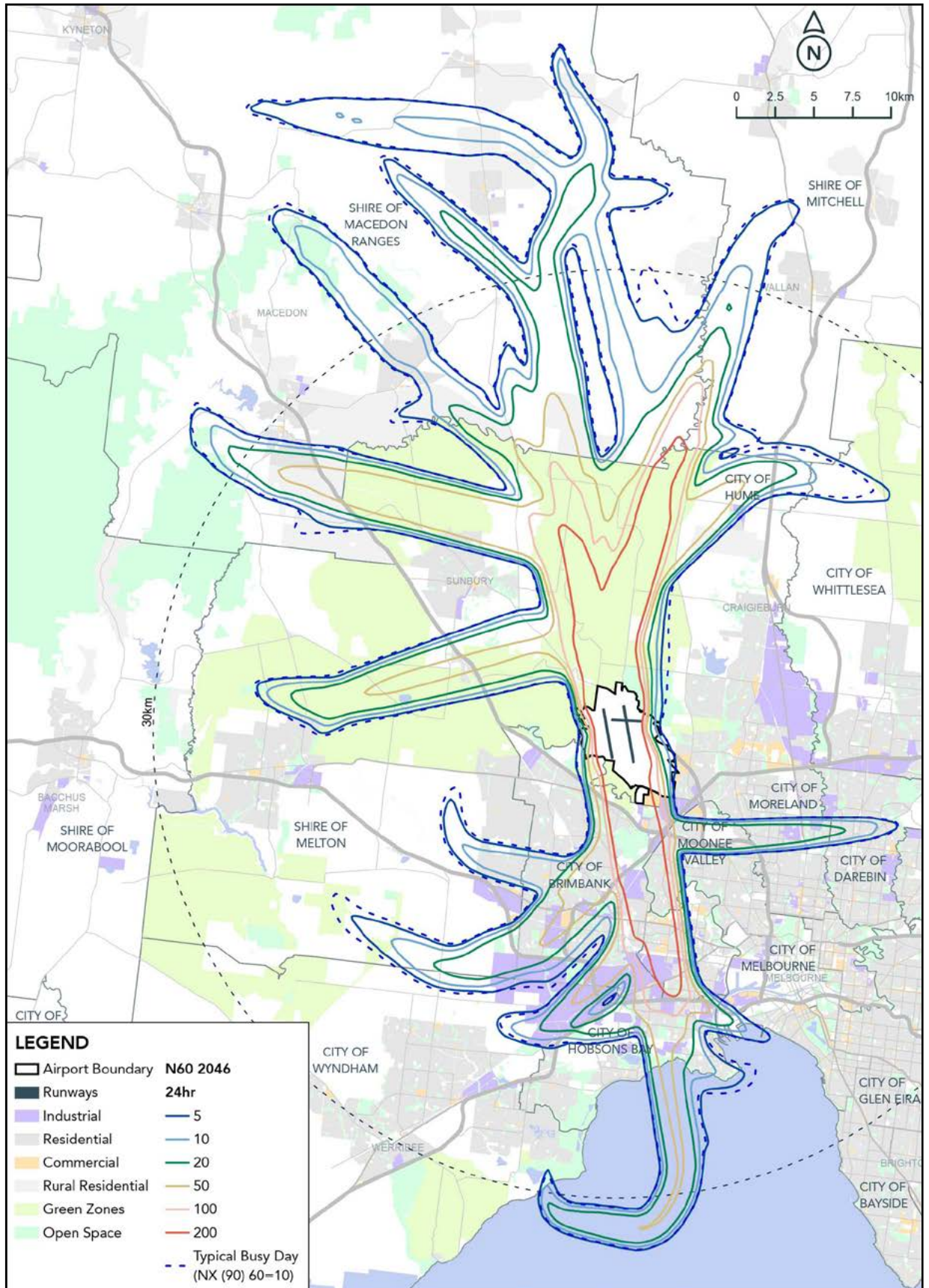
Figure C4.47
M3R Option 1 2046 – N60 annual 24 hours



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

Figure C4.48
M3R Option 2 2046 – N60 annual 24 hours



Source: SoundIN, 2020

Notes: All numbers are rounded to the nearest 1% and totals may not add up to 100%.

C4.6.3

M3R typical busy day N-above (90th percentile N-above)

This section presents the 90th percentile values of N60 and N70 calculated over all days, representing a typical busy day. These 90th percentile N-above values are designated $NX_{(90)}60$ and $NX_{(90)}70$.

The 'typical busy day N-above' contours demonstrate the potential impact of concentrated runway usage that, in some circumstances, may not be evident in the average N-above presented in Section C4.6.2.

$NX_{(90)}70$ day and evening

Figure C4.49 presents the forecast M3R $NX_{(90)}70$ for 2026 with full mixed mode operations during the day and evening period. With reference to the respective N70 (Figure C4.31) the $NX_{(90)}70$ contours are larger, as expected.

In general, the $NX_{(90)}70=10$ has similar extents to the $N70=5$. Other contours exhibit a similar relationship, indicating that the typical busy day is likely to produce twice as many N70 events compared to the average day. This relationship is also evident in the respective contours for Option 1 and Option 2 strategies.

The most significant differences are apparent around departure flight paths. The typical busy day scenario likely captures days when one particular mode is used for much/all of the day. Additionally, noise modelling considers the impact of meteorological conditions on aircraft performance and resulting noise emissions. Therefore, the typical busy day contours reflect periods when movements are concentrated in an area (i.e. operations being concentrated by sustained use of a single mode) as well as louder operations due to meteorological conditions impacting aircraft performance.

Figure C4.50 presents the forecast M3R $NX_{(90)}70$ day and evening for 2026 with the Option 1 strategy. The impact of concentrated mode usage and meteorological conditions is most evident in the segregated mode with departures from the existing runway. Departures from runway 16L making a right turn (on a south-west heading) can be seen to generate a notably larger $NX_{(90)}70$ compared to the N70. Similarly, departures from runway 34R taking a left turn to fly north and north-east of Sunbury generate notably larger $NX_{(90)}70$ contours than the (average) N70.

Figure C4.51 presents the forecast M3R $NX_{(90)}70$ day and evening for 2026 with the Option 2 strategy. Departures from both runway 16L and 16R making a right turn (on a south-west heading) can be seen to generate a notably larger $NX_{(90)}70$ compared to the (average) N70. Similarly, departures from both runway 34R and 34L taking a left turn to fly north and north-east of Sunbury generate notably larger $NX_{(90)}70$ contours. The early left turn for departures off runway 34L is also notable – the $NX_{(90)}70$ representing 5, 10 and 20 events extend substantially further than the (average) N70 in this area.

Figure C4.54 presents the forecast M3R $NX_{(90)}70$ day and evening for 2046 with the Option 2 strategy. The distinctions between the $NX_{(90)}70$ and N70 in 2046 are similar to 2026, as discussed above.

$NX_{(90)}70$ 24hrs

Figure C4.55 to Figure C4.58 present $NX_{(90)}70$ 24hr for 2026 and 2046 for M3R Option 1 and Option 2.

The 24hr $NX_{(90)}70$ contours are very similar to the $NX_{(90)}70$ day and evening contours. There are marginal increases in the contours for both options for the N70 24hr, driven by the addition of night-time operations to the analysis.

$NX_{(90)}60$ night

Figure C4.59 and Figure C4.60 present the forecast M3R $NX_{(90)}60$ night for 2026 with Option 1 and Option 2 strategies respectively. With reference to the respective N60 (Figure C4.41 and Figure C4.42), the $NX_{(90)}60$ contours are larger, as expected. In general, the $NX_{(90)}60=10$ has similar extents to the $N60=5$.

Other contours exhibit a similar relationship, indicating that the typical busy day is likely to produce twice as many N60 events compared to the average. This could be reasonably expected for most areas, as the typical busy day is likely to capture periods when a single mode is used for the entire night period (e.g. SODPROPS or a segregated mode option).

Like the N70 during the day and evening periods, many of the departures routes are predicted to result in notably larger $NX_{(90)}60$ compared to the average N60.

Some arrival routes are also predicted to result in notably larger $NX_{(90)}60$ compared to the average N60. One such route is the shortened approach to runway 34R from the east and south-east. This procedure is only available for segregated modes under certain meteorological conditions. The existence of an $NX_{(90)}60$ along this route indicates that such conditions are predicted to result in the use of the route on more than 10 per cent of nights. In practice, usage may be lower as ATC sequencing may favour the longer approach.

Figure C4.61 and Figure C4.62 present the forecast M3R $NX_{(90)}60$ for 2046 with the two operating strategies. The distinctions between the $NX_{(90)}60$ and N60 in 2046 are similar to 2026, as discussed above.

$NX_{(90)}60$ 24hrs

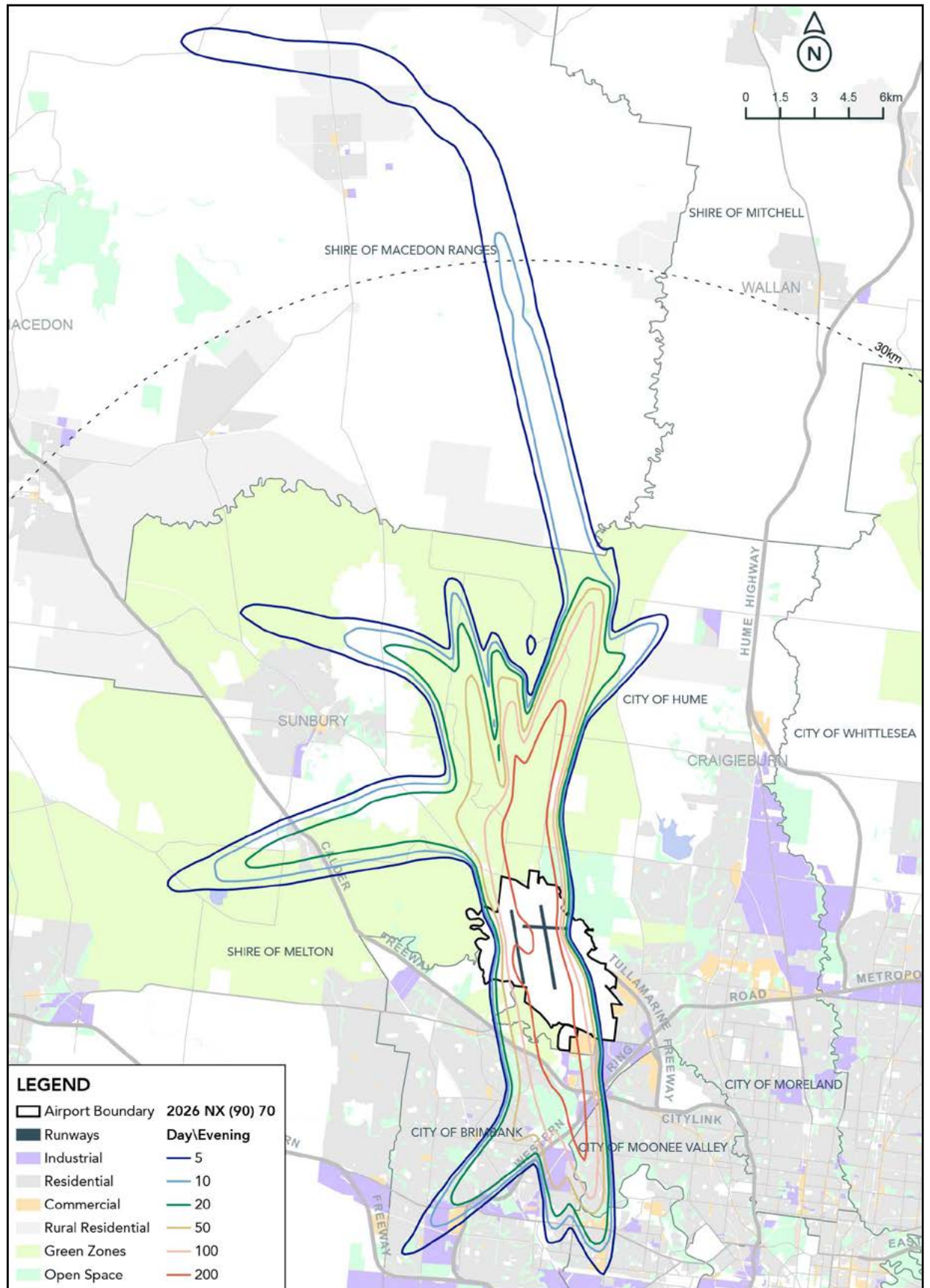
Figure C4.63 and Figure C4.64 present the forecast M3R 24hour $NX_{(90)}60$ for 2026 with Option 1 and Option 2 strategies respectively.

With reference to the respective N60 (Figure C4.45 and Figure C4.46), the $NX_{(90)}60$ contours are larger, as expected. Like other typical busy day N-above contours, the $NX_{(90)}60=10$ generally has similar extents to the $N60=5$. Other contours exhibit a similar relationship, indicating that the typical busy day is likely to produce twice as many N60 events compared to the average.

Many departure and arrival routes are predicted to result in notably larger $NX_{(90)}60$ compared to the average N60.

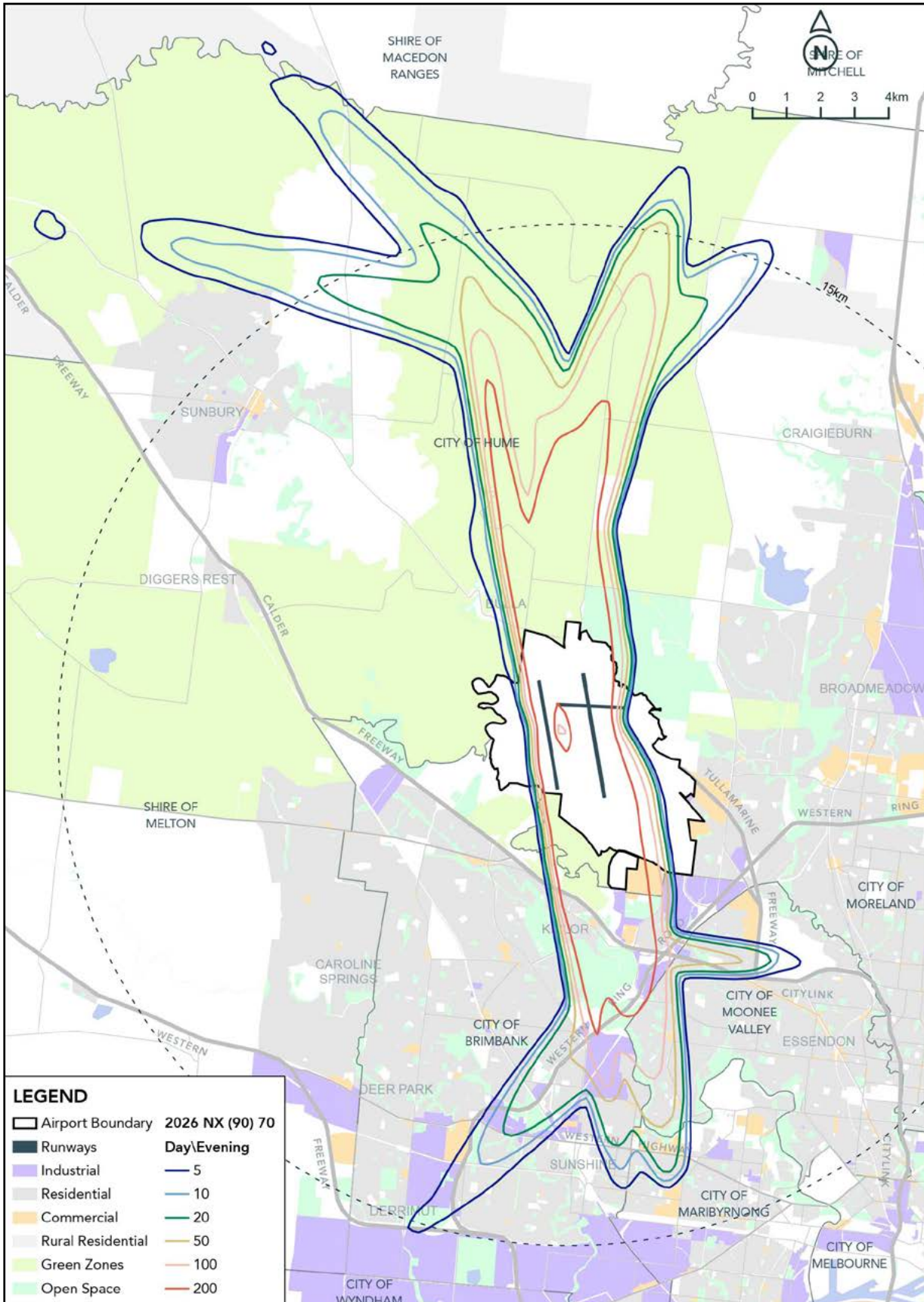
Figure C4.65 and Figure C4.66 present the forecast M3R $NX_{(90)}60$ for 2046 with the two operating strategies. The distinctions between the $NX_{(90)}60$ and N60 in 2046 are similar to 2026, as discussed above.

Figure C4.49
M3R Mixed Mode 2026 – $NX_{(90)70}$ annual day and evening (6am to 11pm)



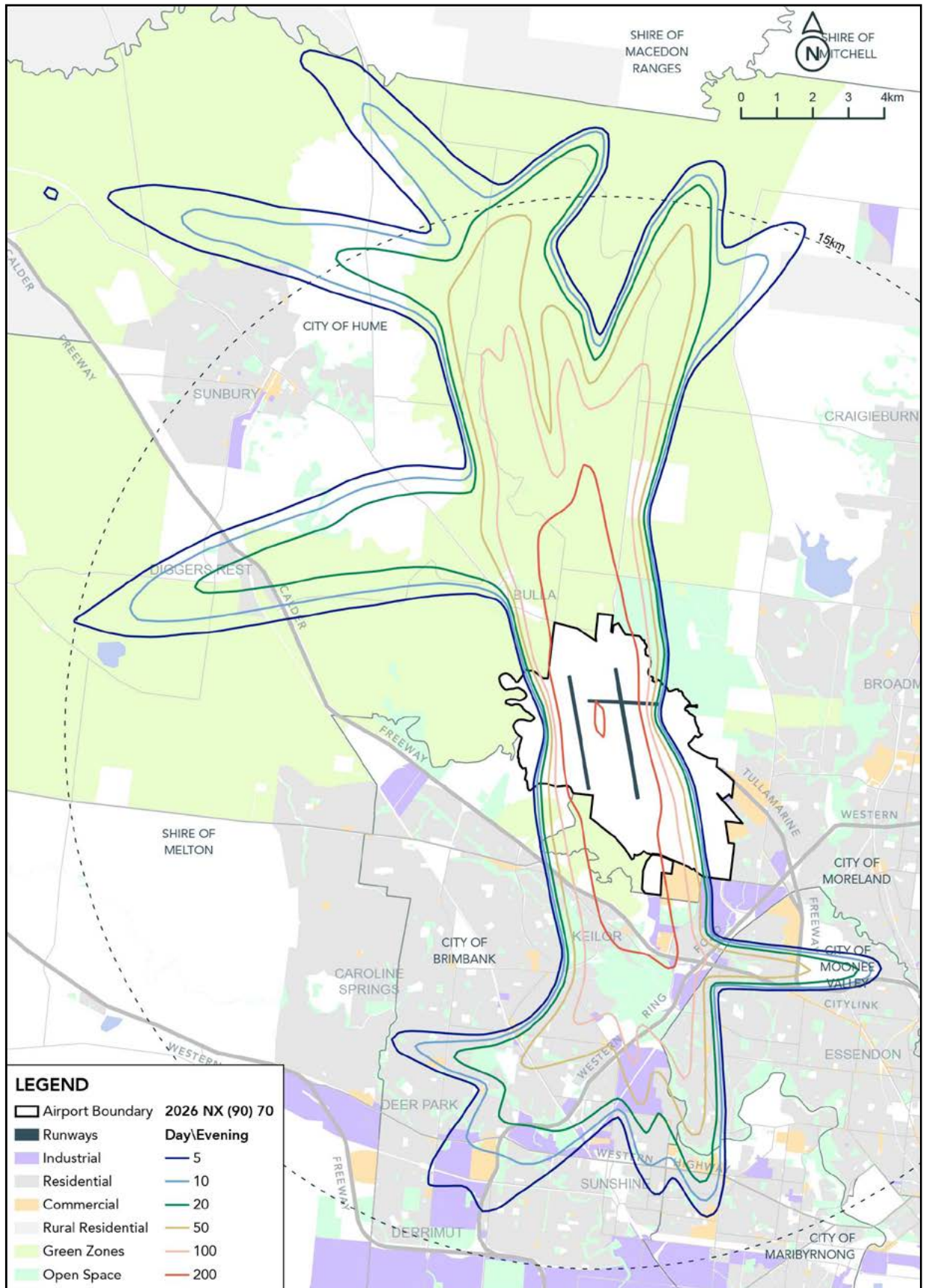
Source: SoundIN, 2020

Figure C4.50
M3R Option 1 2026 – NX₍₉₀₎70 annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Figure C4.51
M3R Option 2 2026 – $NX_{(90)}70$ annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Figure C4.52
M3R Mixed Mode 2046 – NX₍₉₀₎70 annual day and evening (6am to 11pm)

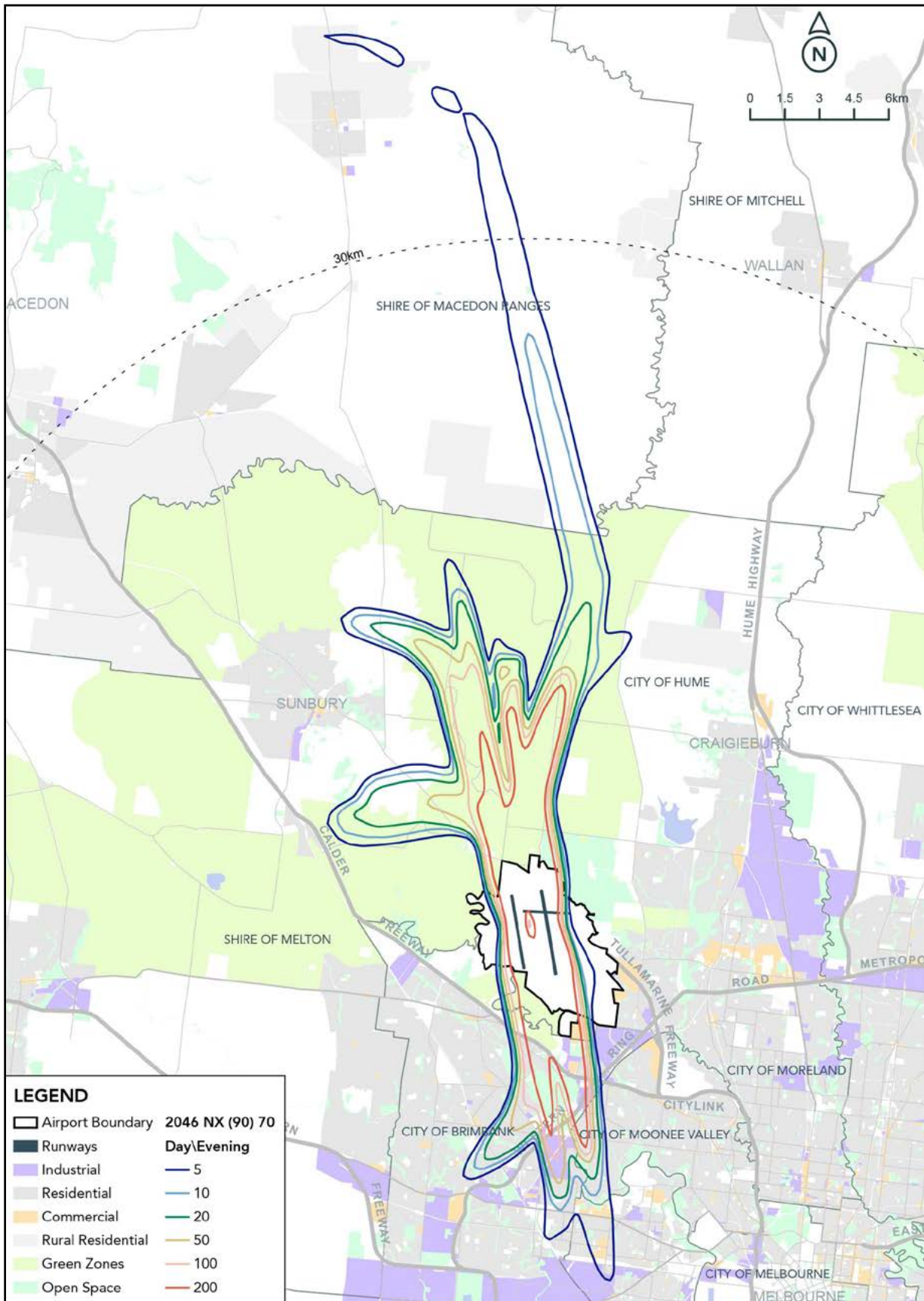
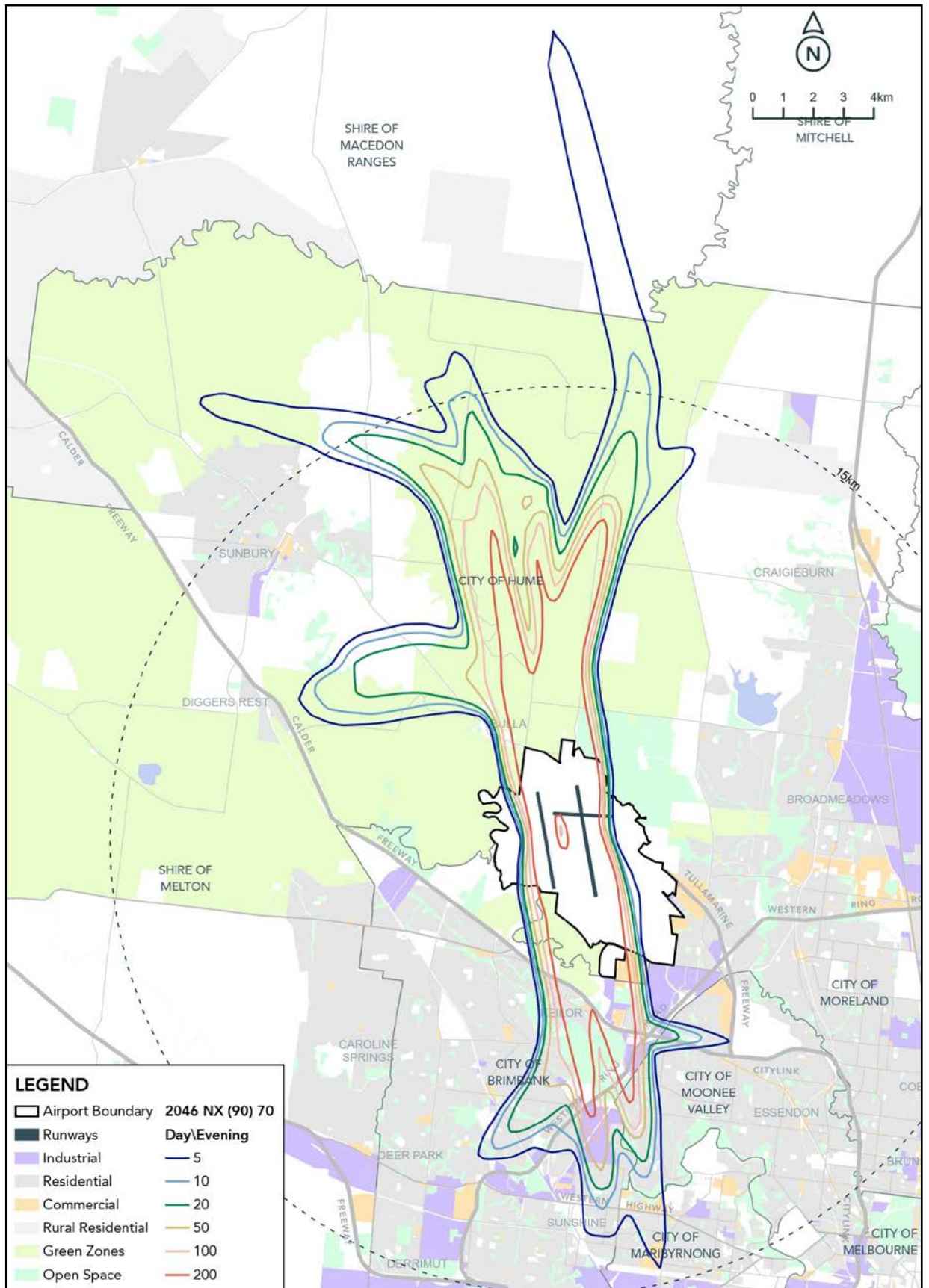


Figure C4.53
M3R Option 1 2046 – NX₍₉₀₎70 annual day and evening (6am to 11pm)



Source: SoundIN, 2020

Figure C4.54
M3R Option 2 2046 – NX₍₉₀₎70 annual day and evening (6am to 11pm)

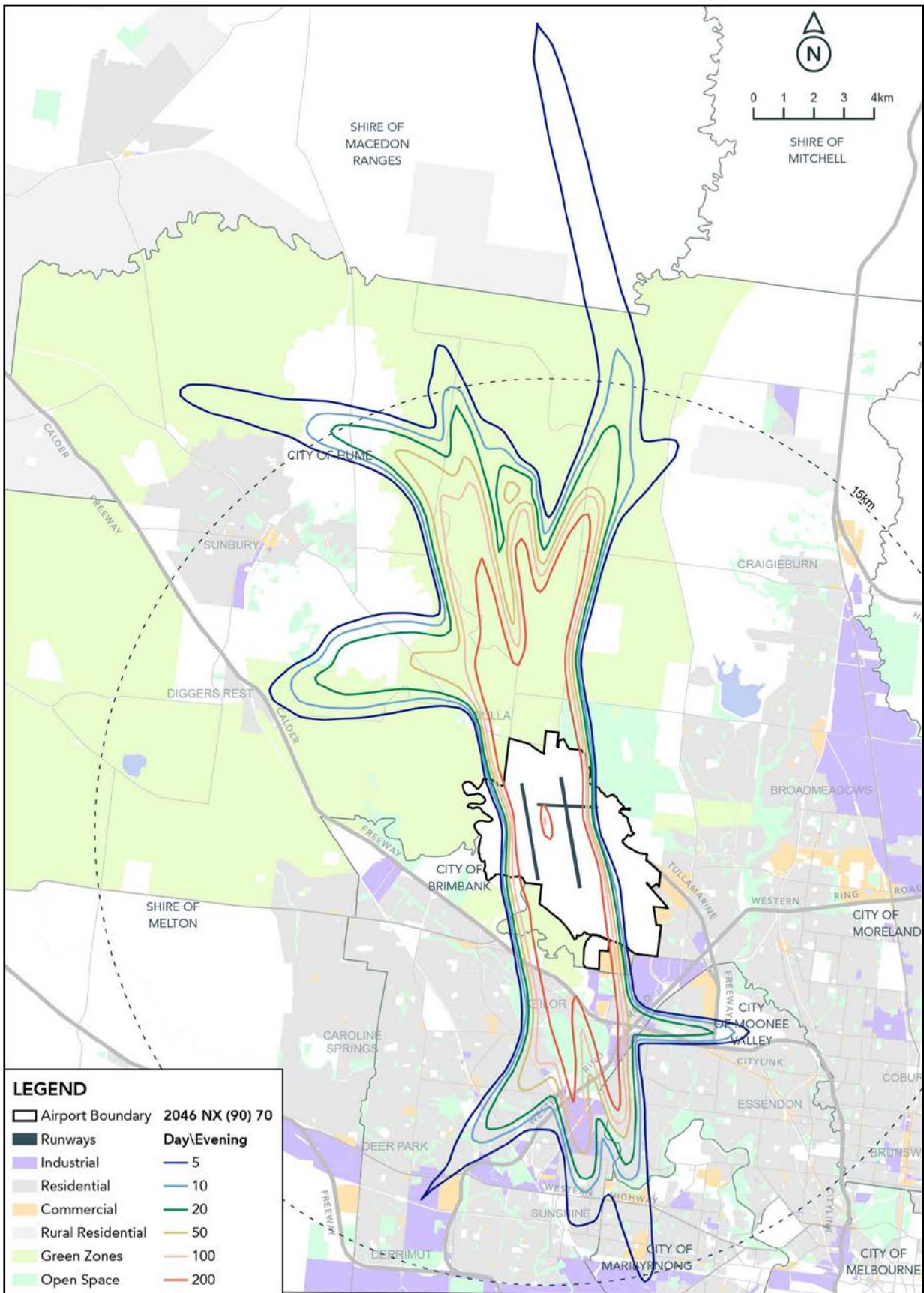
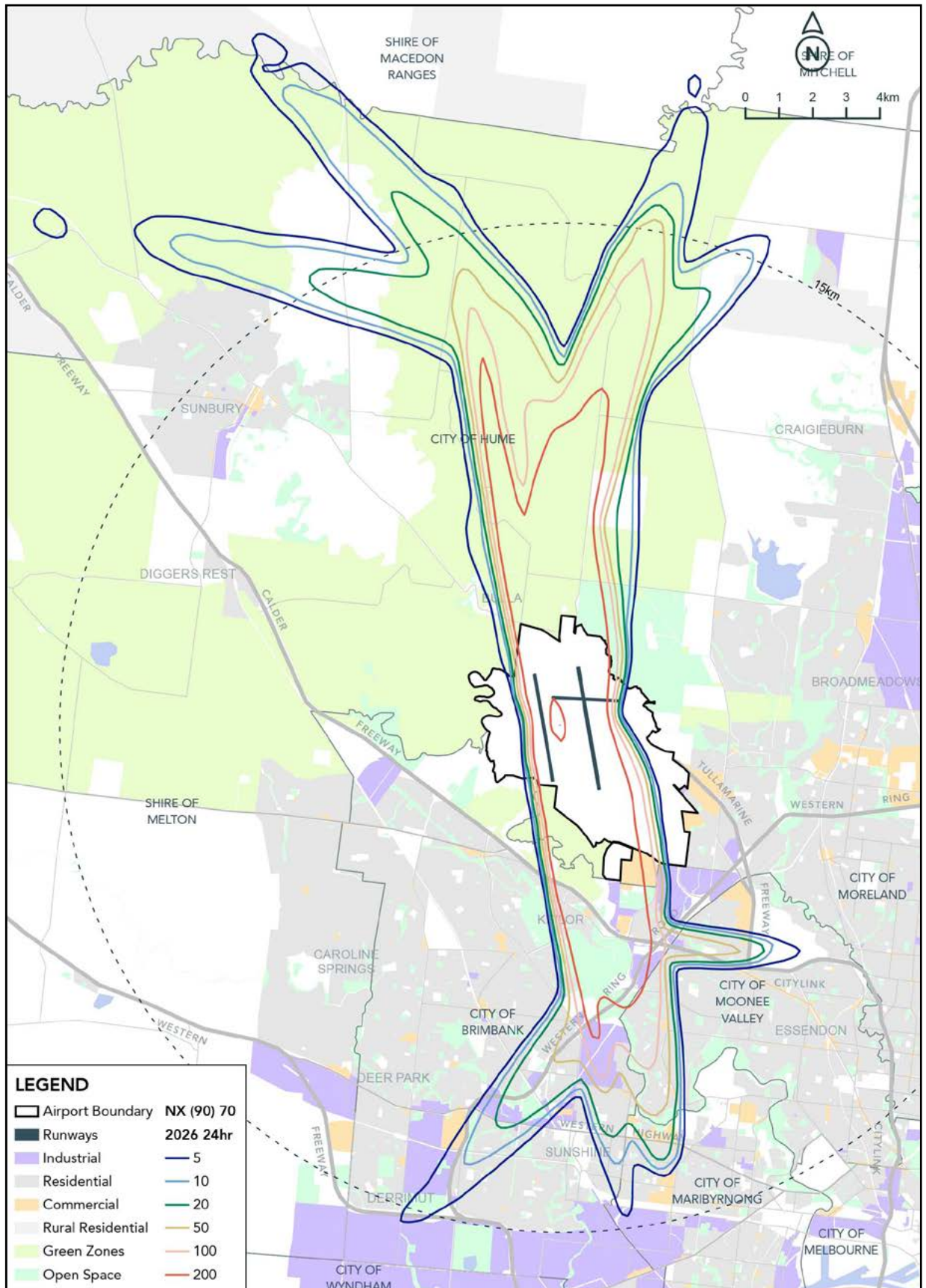
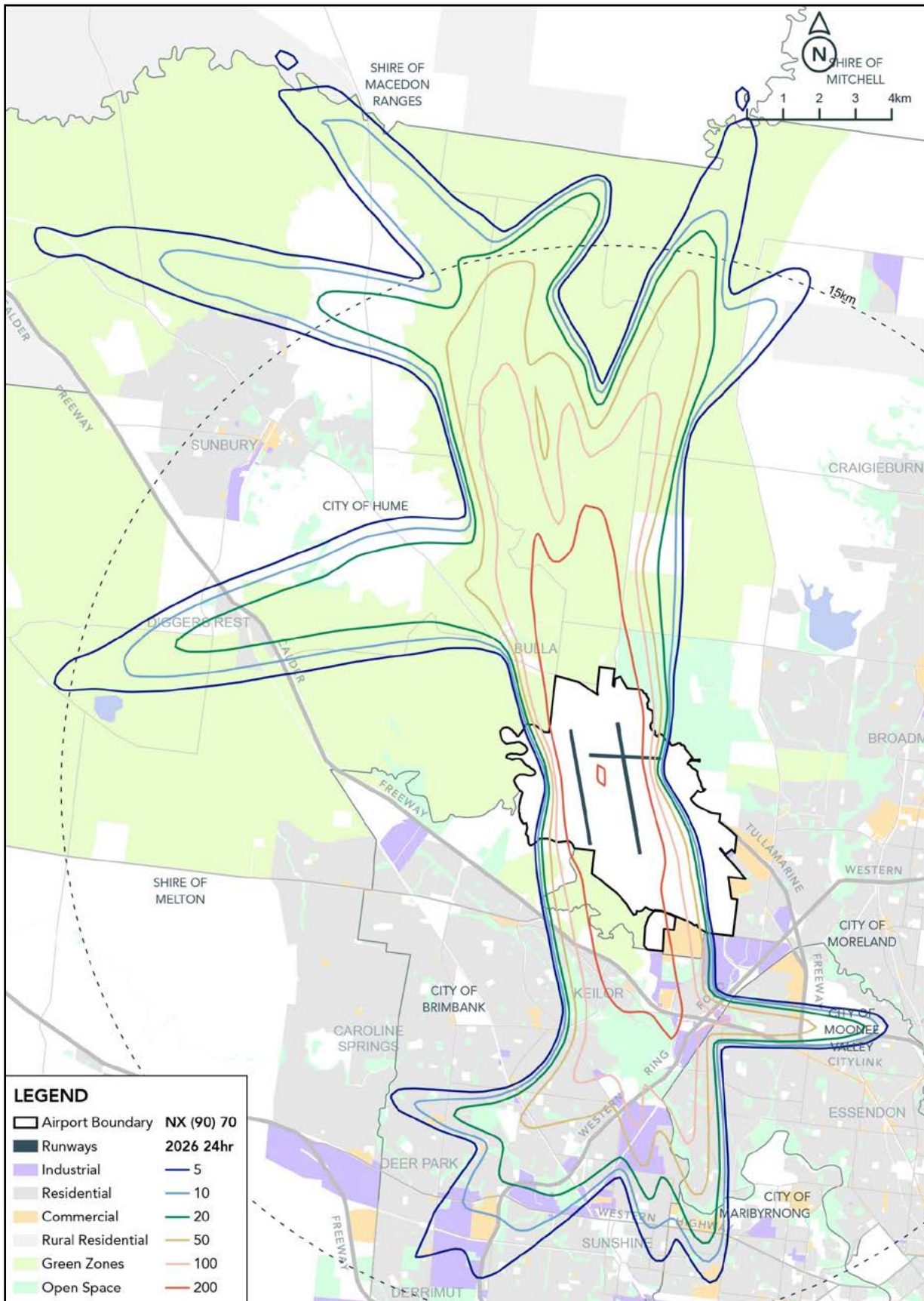


Figure C4.55
M3R Option 1 2026 – NX₍₉₀₎70 annual 24hr



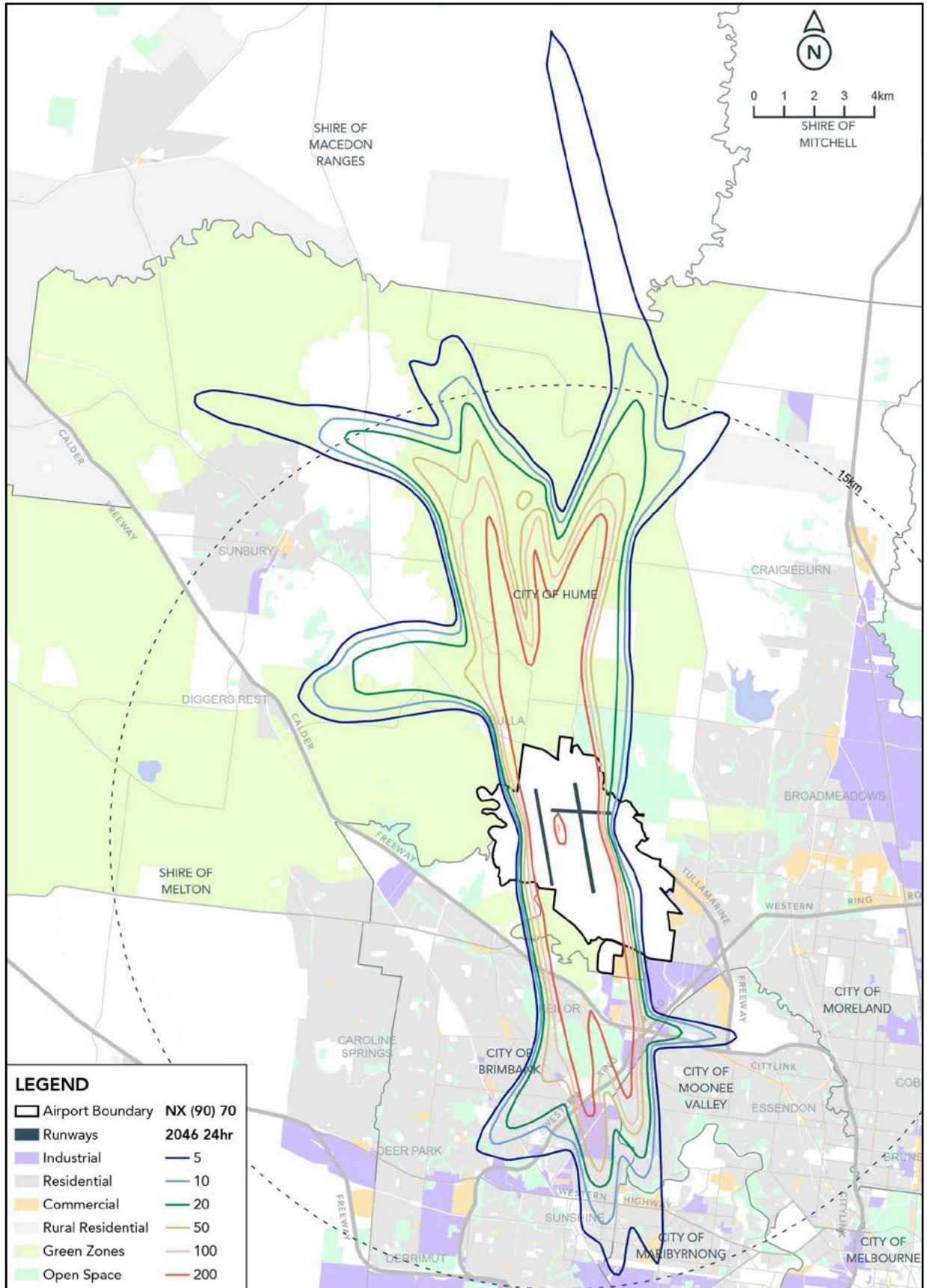
Source: SoundIN, 2020

Figure C4.56
M3R Option 2 2026 – NX₍₉₀₎70 annual 24hr



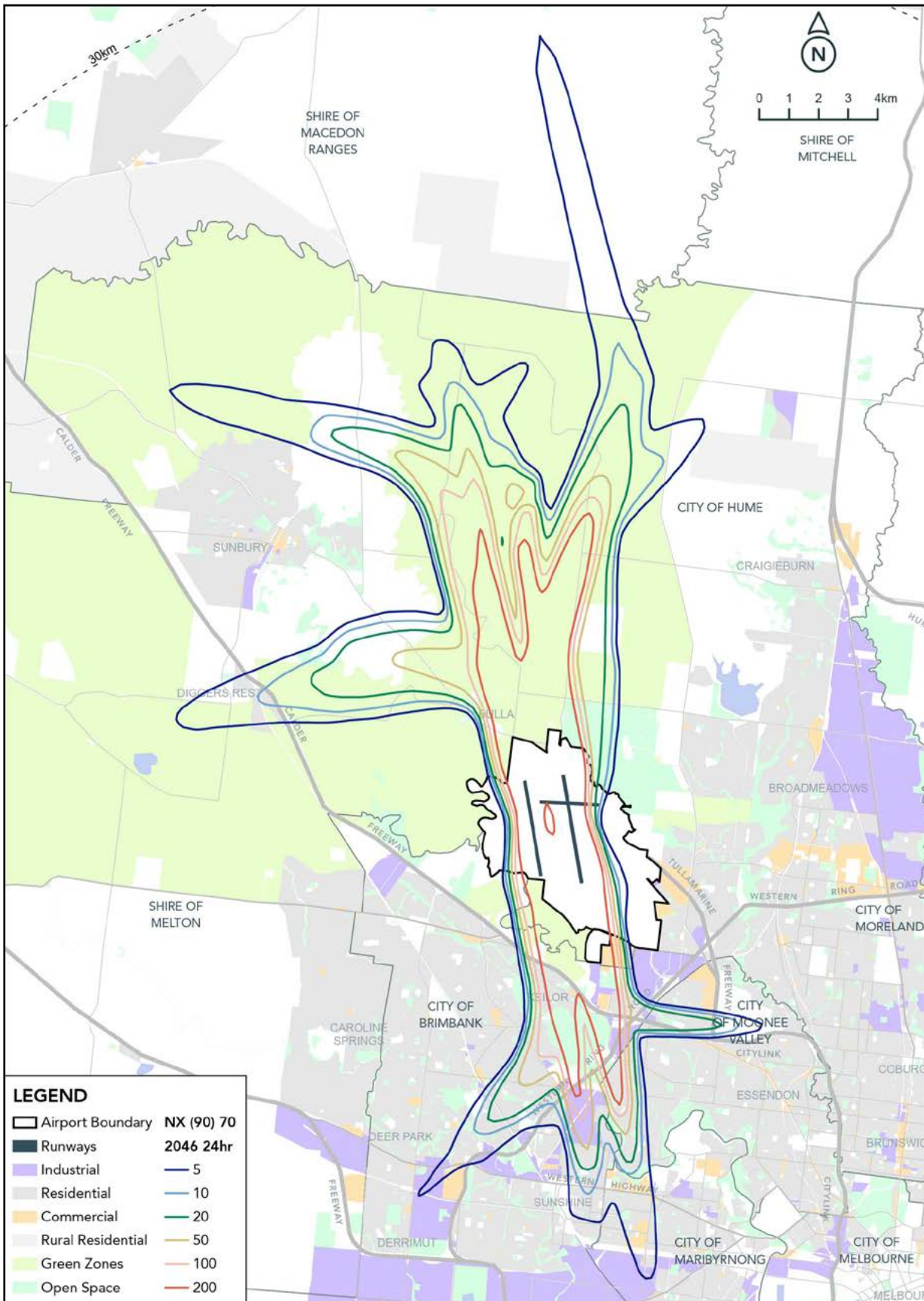
Source: SoundIN, 2020

Figure C4.57
M3R Option 1 2046 – NX₍₉₀₎70 annual 24hr



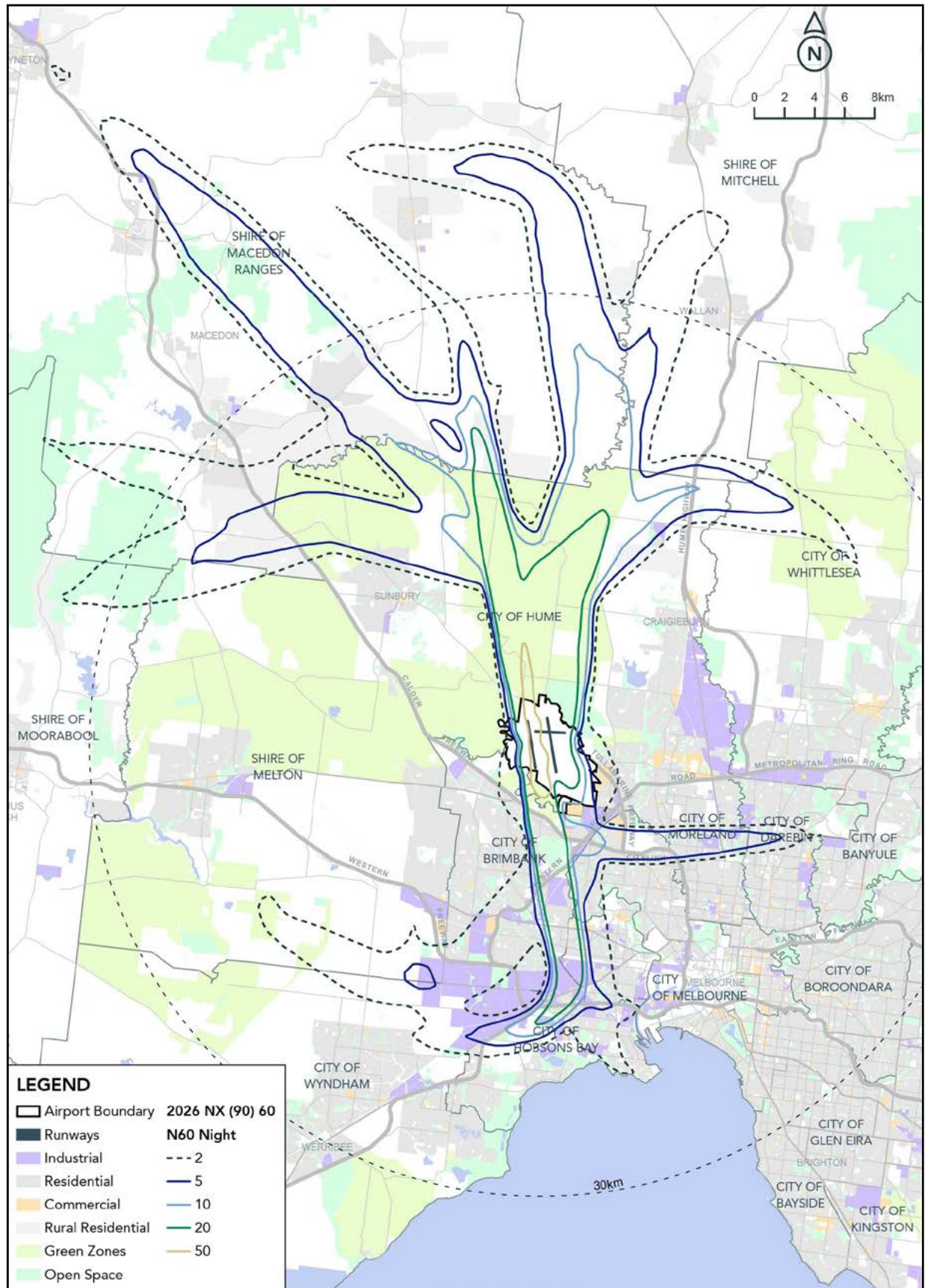
Source: SoundIN, 2020

Figure C4.58
M3R Option 2 2046 – NX₍₉₀₎70 annual 24hr



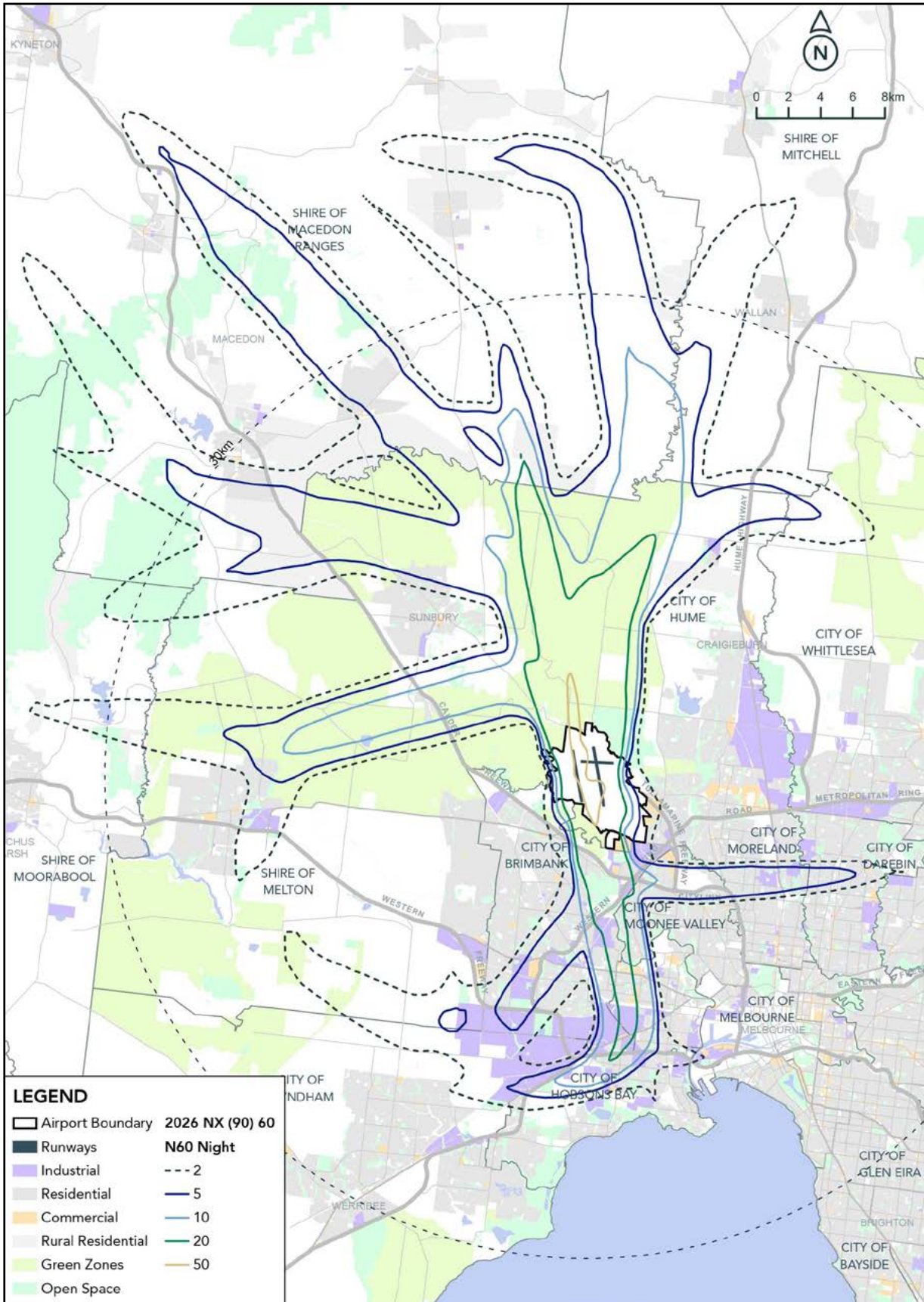
Source: SoundIN, 2020

Figure C4.59
M3R Option 1 2026 – $NX_{(90)}$ 60 annual night (11pm to 6am)



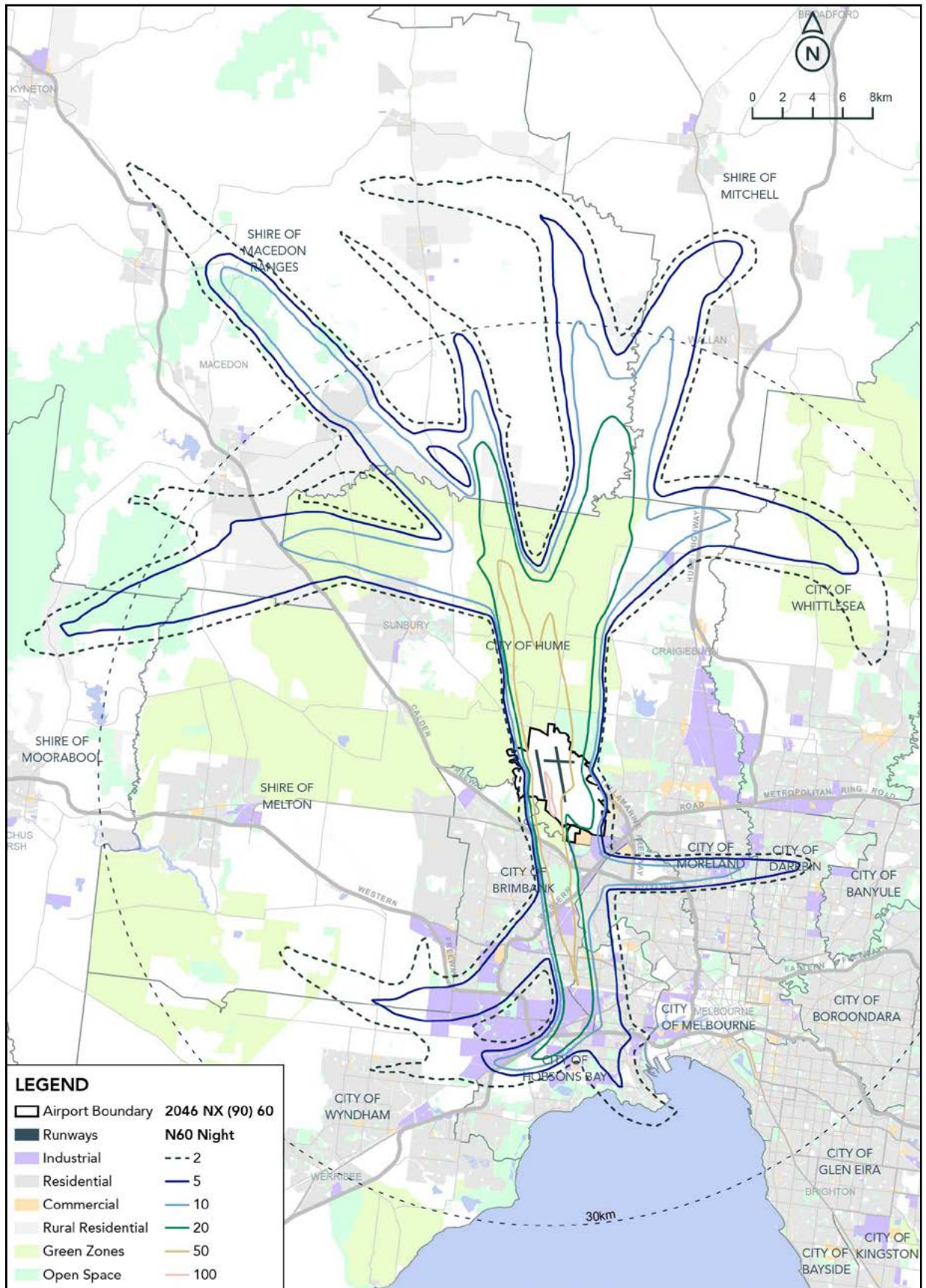
Source: SoundIN, 2020

Figure C4.60
M3R Option 2 2026 – NX₍₉₀₎ 60 annual night (11pm to 6am)



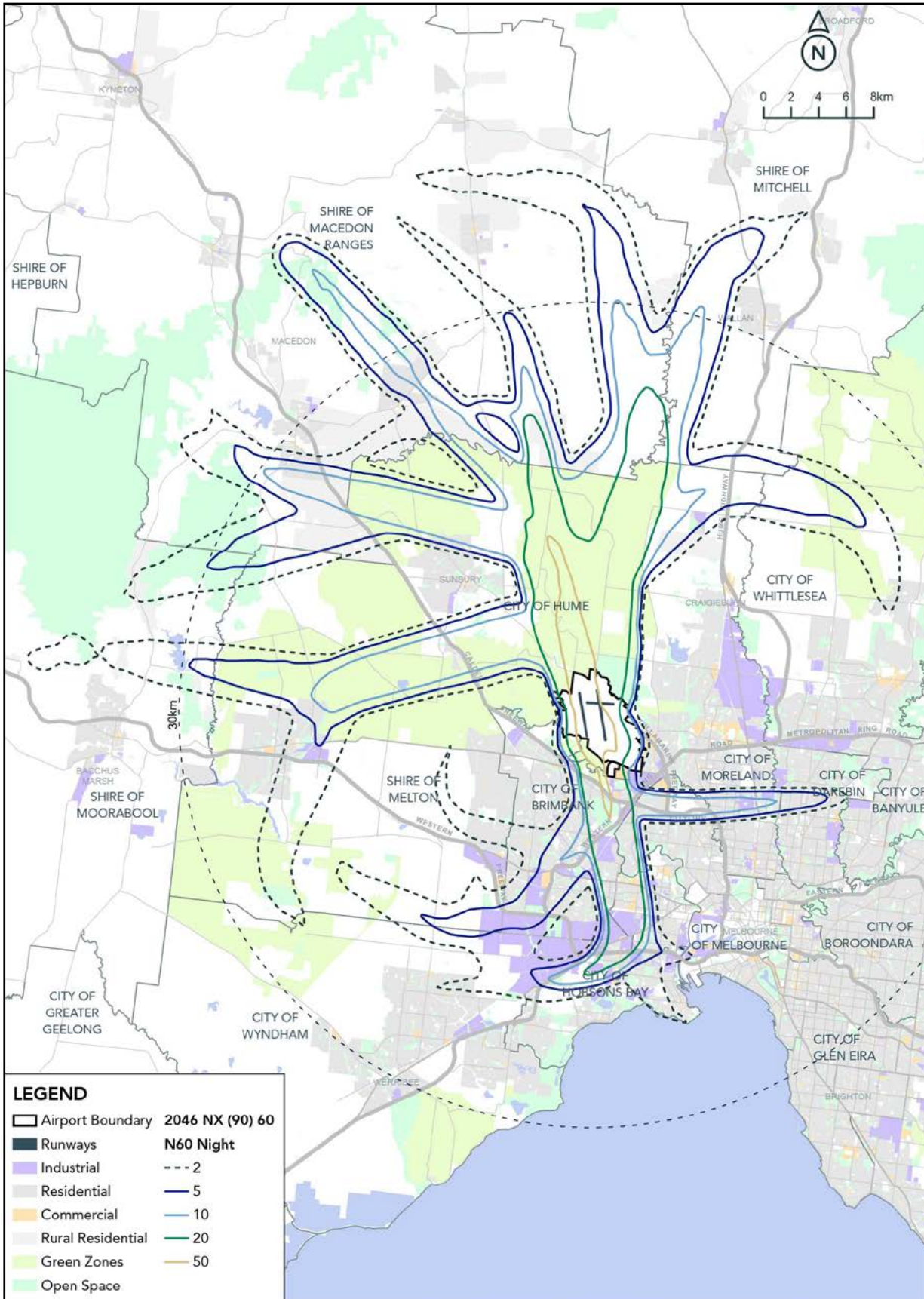
Source: SoundIN, 2020

Figure C4.61
M3R Option 1 2046 – NX₍₉₀₎60 annual night (11pm to 6am)



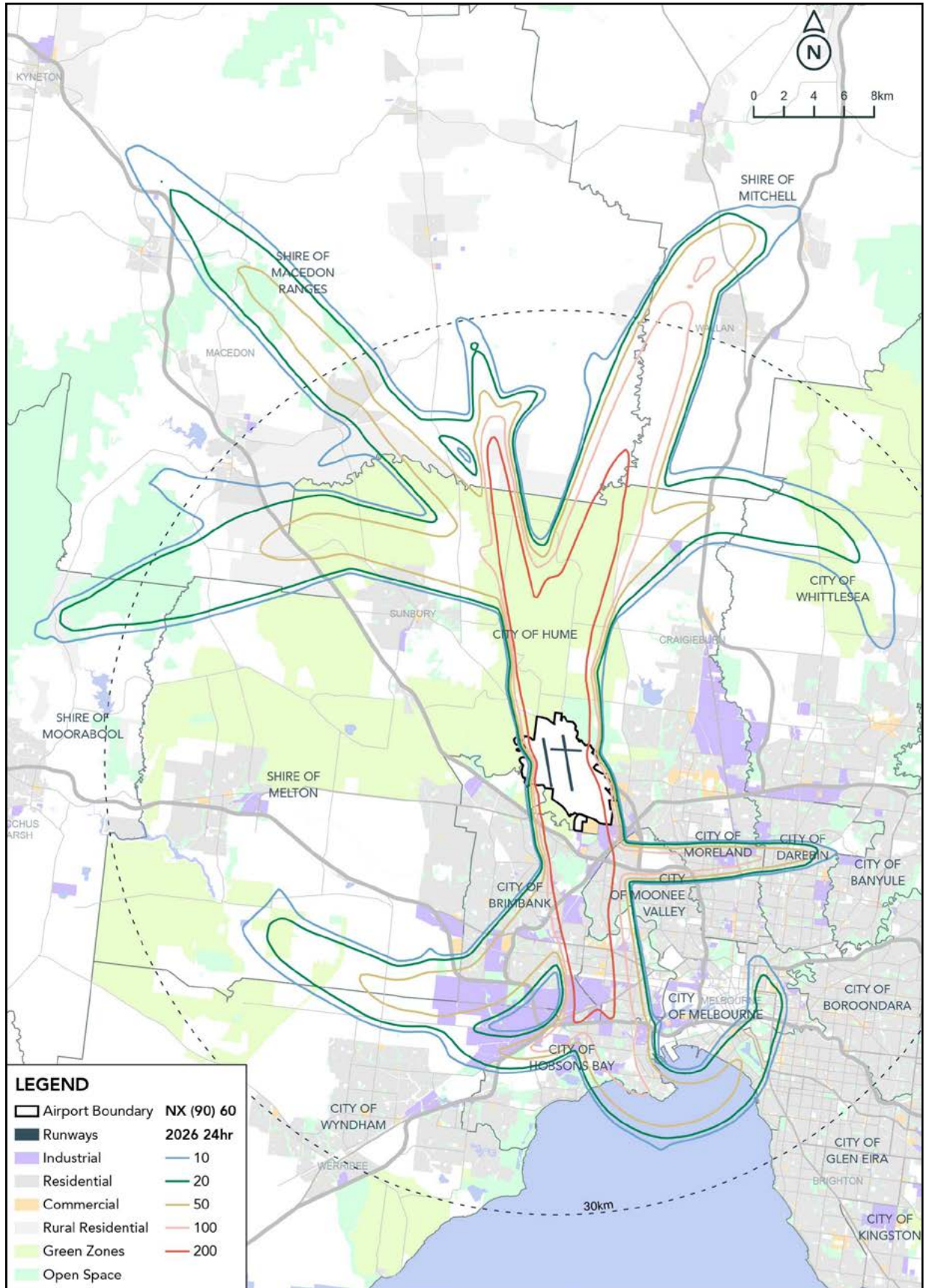
Source: SoundIN, 2020

Figure C4.62
M3R Option 2 2046 – NX₍₉₀₎ 60 annual night (11pm to 6am)



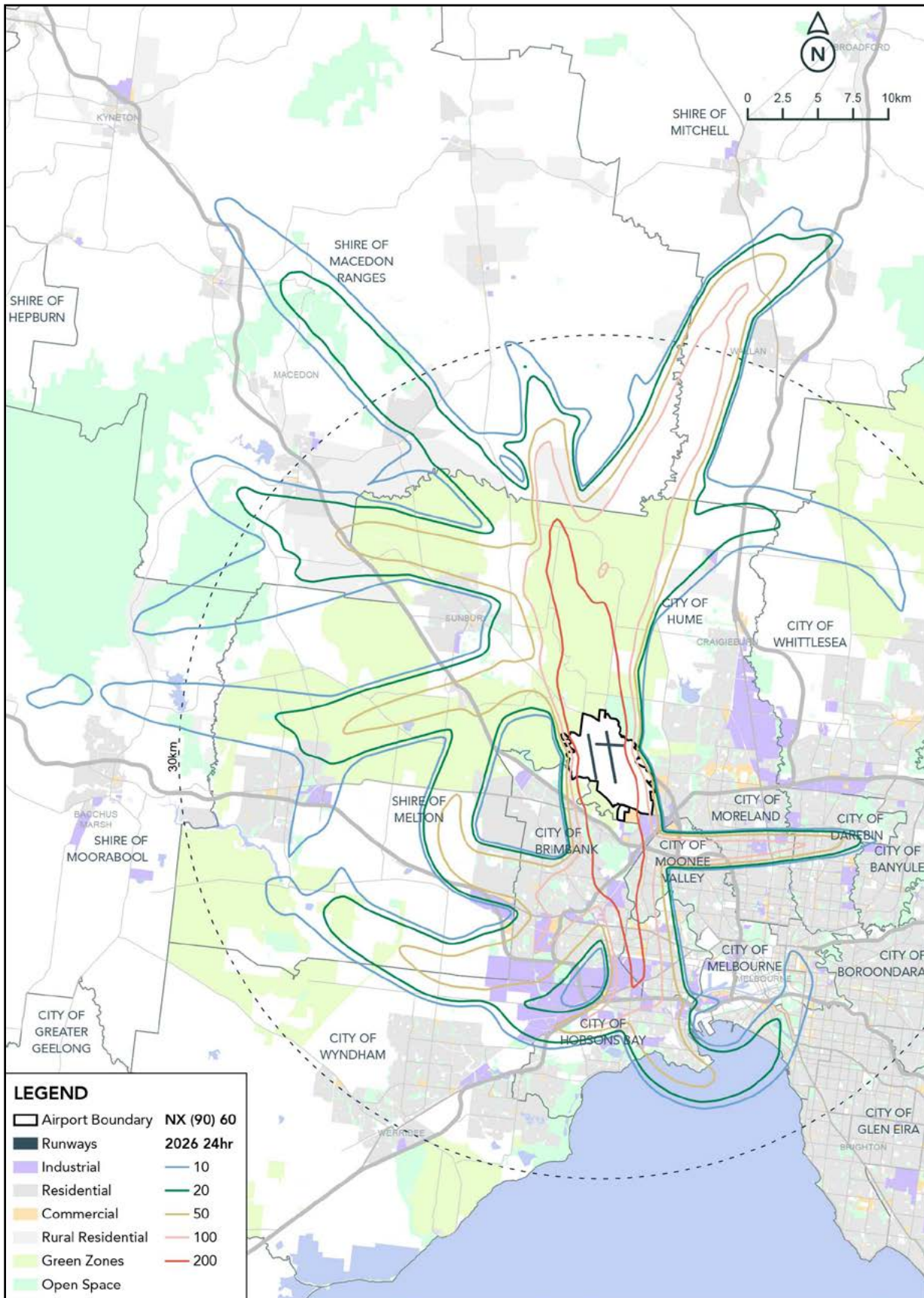
Source: SoundIN, 2020

Figure C4.63
M3R Option 1 2026 – NX₍₉₀₎ 60 annual 24hr



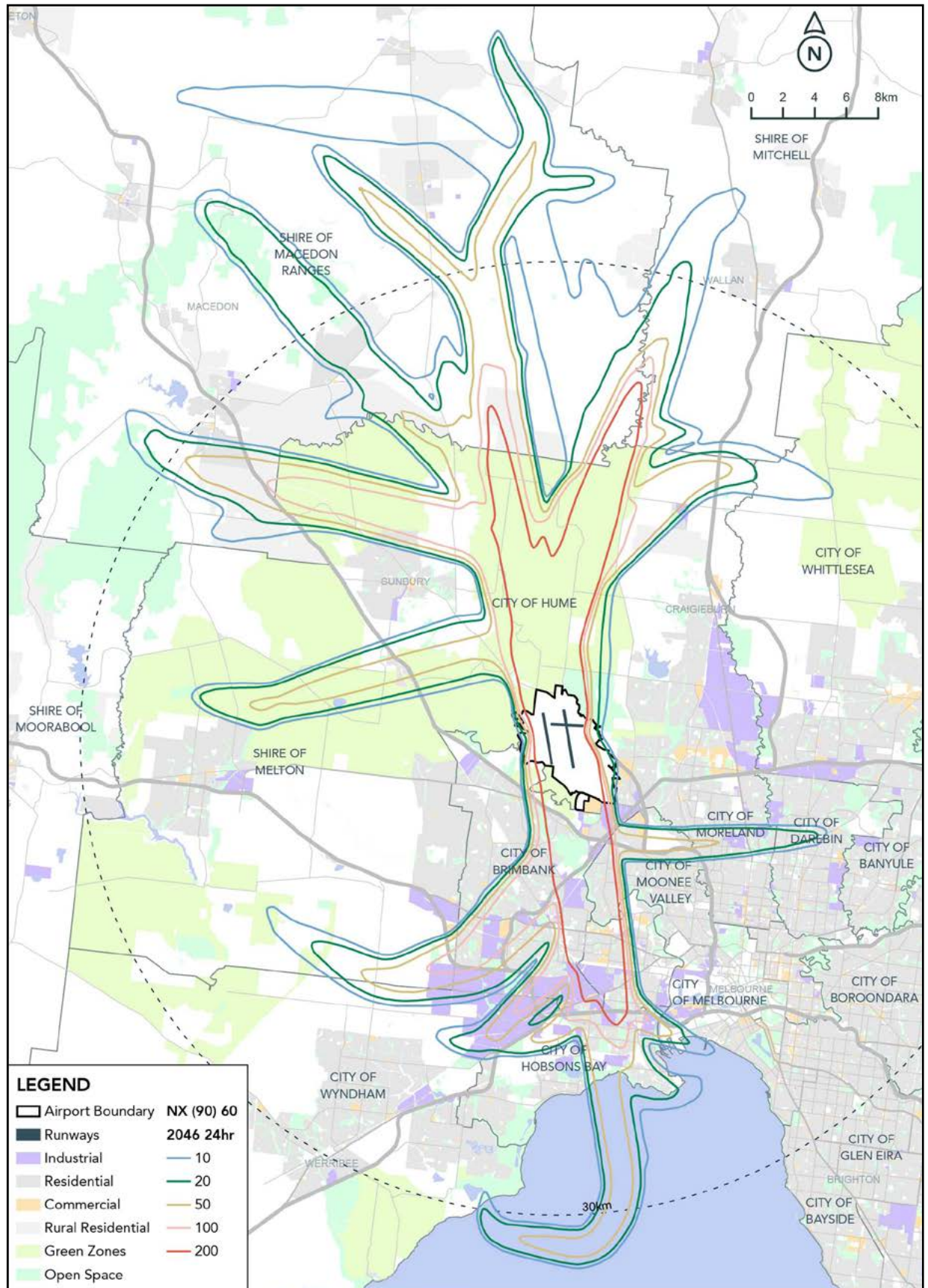
Source: SoundIN, 2020

Figure C4.64
M3R Option 2 2026 – NX₍₉₀₎ 60 annual 24hr



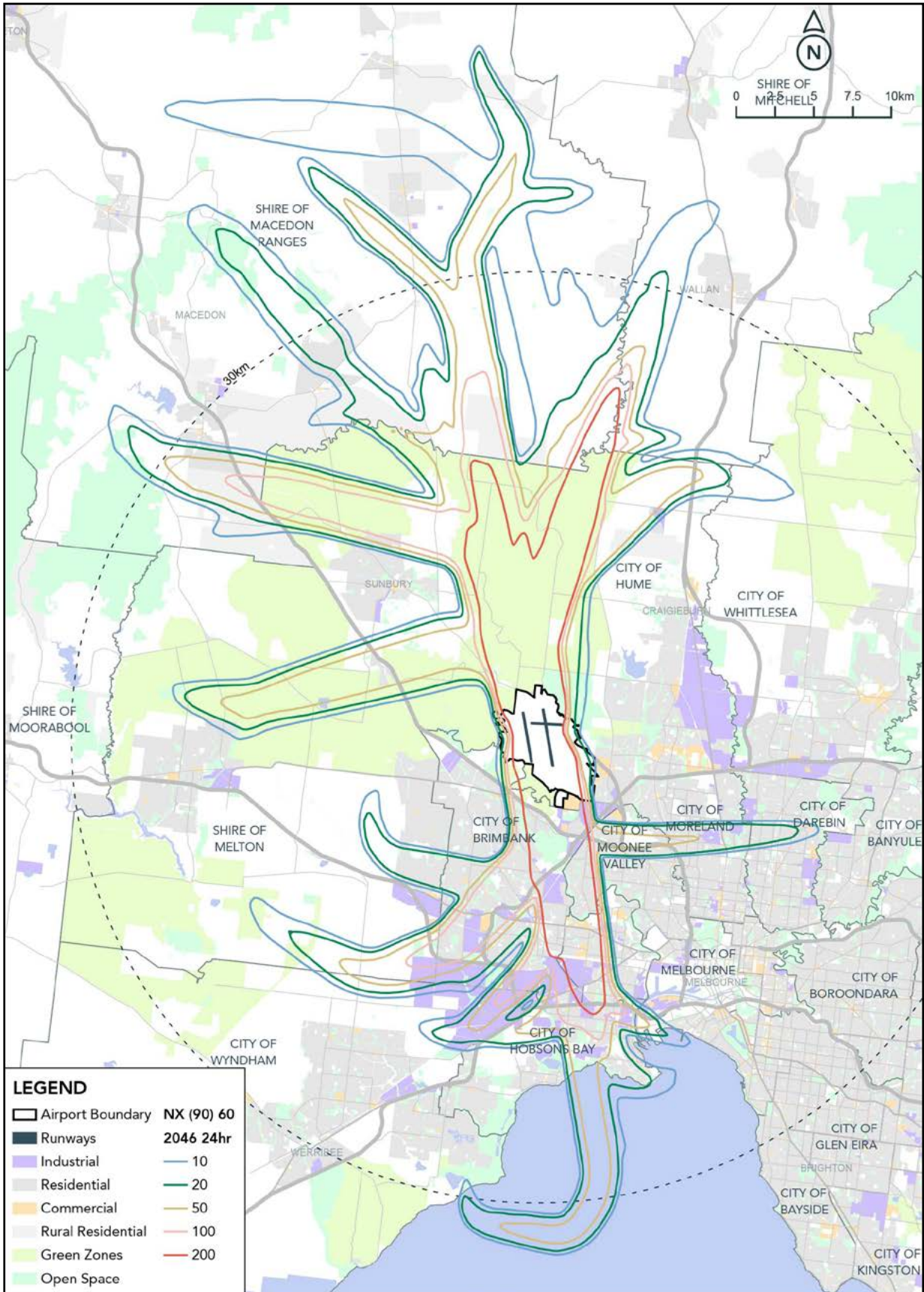
Source: SoundIN, 2020

Figure C4.65
M3R Option 1 2046 – NX₍₉₀₎60 annual 24hr



Source: SoundIN, 2020

Figure C4.66
M3R Option 2 2046 – NX₍₉₀₎ 60 annual 24hr



Source: SoundIN, 2020

C4.6.4

Respite charts

Respite charts demonstrate the percentage of days when few or no aircraft noise events are expected during the nominated time. **Chapter C3: Aircraft Noise Modelling Methodology** further describes the concept of aircraft noise respite.

In this section, 'respite' is described as the absence of operations to or from a particular runway end. For example, respite south of the new runway would describe periods having no arrivals onto runway 34L and no departures from runway 16R.

Some of the operating modes require off-mode operations e.g. an ultra-long-haul departure requiring the existing north-south runway. Respite has therefore been defined as whole periods (either day/evening or night) having fewer than five total operations at that runway end.

The assessment for this MDP has explored an option to deliver respite in seven to nine-hour-long periods, alternating the runway used each period. The periods described in this assessment are: morning (6am to 2pm), afternoon and evening (2pm to 11pm) and night (11pm to 6am).

Mixed mode operations would not be expected to deliver respite, as both runways would be used for arrivals and departures.

C4.6.4.1

2026 predicted respite

Figure C4.67 presents the predicted respite for each of the above periods in 2026 with Option 1 and Option 2.

Respite is predicted south of the airport at night, largely due to the use of SODPROPS. The operating strategy favours departures from the existing runway and arrivals onto the new runway. Given the prevalence of northerly winds as the condition that precludes SODPROPS, this regime results in a greater proportion of operations south of the new runway, as compared to the existing runway. Consequently, respite is predicted more often south of the existing runway than south of the new runway.

Option 1 would only deliver respite during the other periods if a particular segregated mode was able to be used for the entire period. This generally requires that demand is within the capacity of the segregated mode, and that the wind is sustained from a particular direction. Thus Option 1 seldom delivers respite during the morning – when demand often precludes the sustained use of segregated modes. Respite during the afternoon and evening is forecast more than twice as often as the morning. When respite is forecast in the morning or afternoon/evening periods, it is generally predicted to occur south of the existing runway and north of the new runway.

Option 2 aims to provide a predictable and equitable schedule of respite. Respite is predicted to be provided south of both the existing and new runways approximately one quarter of nights.

The combination of operating modes used in Option 2 would permit respite to be achieved irrespective of wind. Respite during the morning is again expected to be limited by demand for mixed mode operations. During the afternoon and evening period, respite is forecast between 18 and 38 per cent of days at each of the four runway ends. The distribution between the new and existing runways is more equitable than Option 1.

C4.6.4.2

2046 predicted respite

In 2046 (**Figure C4.68**), demand requires that full mixed mode is used during peak periods and some shoulder periods. Accordingly, respite is forecast in neither the morning nor afternoon and evening period due to the prevalence of mixed mode operations.

Outside busy periods (e.g. at night and outside peak periods during the day) operating modes that deliver respite could be employed. These strategies may be useful throughout the operation of M3R – from the year of opening through the 20-year planning horizon of this MDP and potentially beyond. However, these have not been exhaustively explored at this stage.

Figure C4.67
M3R 2026 Respite – Option 1 & 2

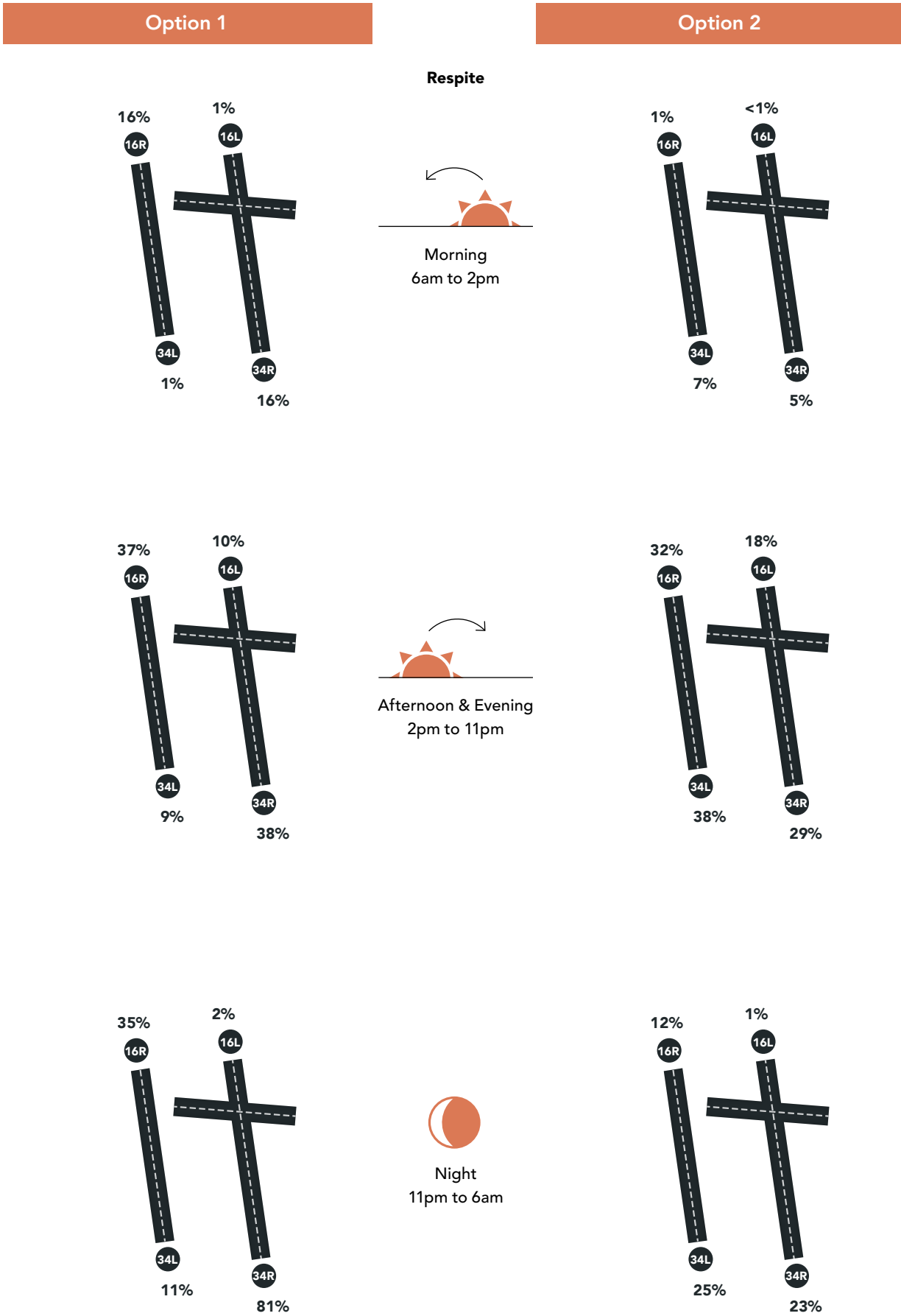
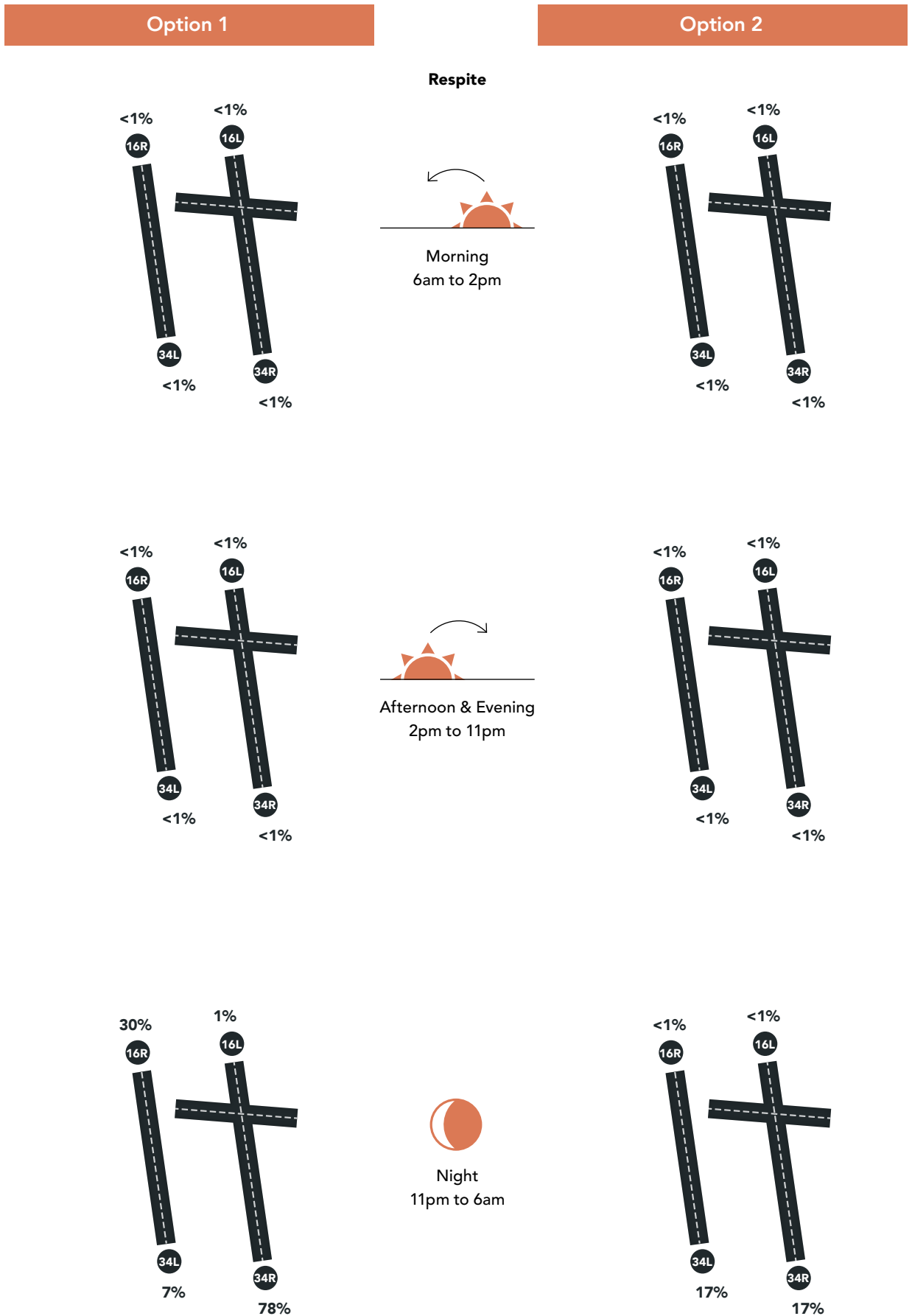


Figure C4.68
M3R 2046 Respite – Options 1 and 2



Source: AI

C4.6.5

N-above difference charts

The differences in N-above values between the M3R Build and No Build scenarios are presented graphically in Figure C4.69 to Figure C4.77. The contours in these figures represent the change in N-above values between the M3R Build and No Build scenarios.

Filled areas indicate a reduction in N-above values for M3R compared with No Build; line contours indicate an increase in N-above values.

N-above differences are presented for 2026 only and describe the change in aircraft noise that is anticipated when the M3R infrastructure opens. N-above difference charts for 2031 and 2046 are very similar to those for 2026.

N70 day and evening

The N70 day and evening difference charts (Figure C4.69 to Figure C4.71) indicate an increase in N70 values along most tracks associated with the north-south parallel runways; the exception being the area directly north of the existing north-south runway (34R/16L) where a reduction in N70 is forecast.

This reduction in noise (north of the existing runway along the extended runway) is due to applying the preliminary airspace design's parallel runway rules. These require a right turn for departures off runway 34R, resulting in fewer N70 events on the extended runway centreline. Currently, departures continue north on runway heading off existing runway 34R.

Significant reductions in N70 are indicated east and west of the airport.

The characteristics of the N70 day-and-evening difference contour shapes are similar for all three operating strategy options although their extent varies.

N70 24hrs

Similar trends are evident in the N70 24hr difference charts (Figure C4.72 and Figure C4.73).

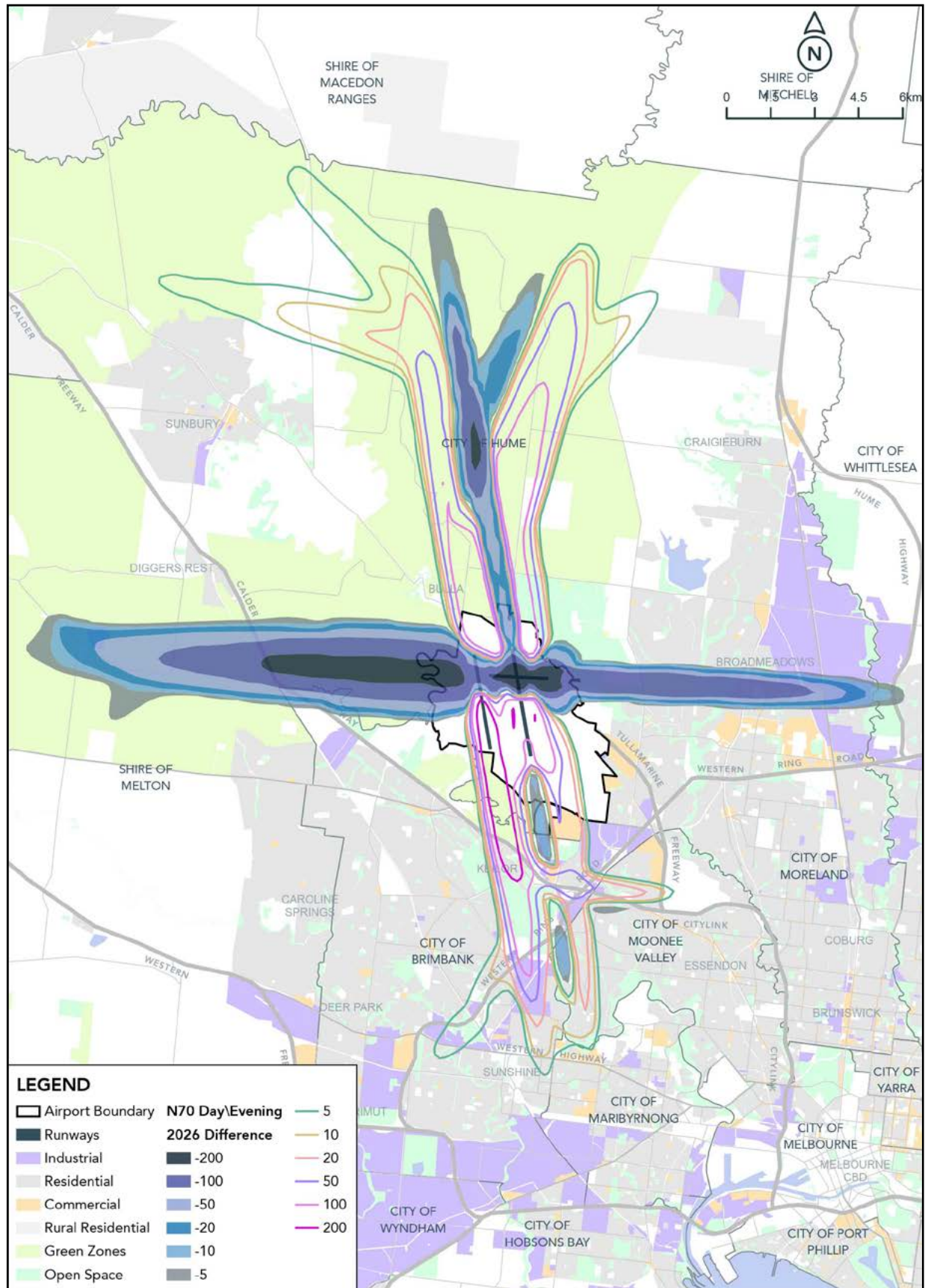
N60 night

Similar trends are evident in the N60 night difference charts (Figure C4.74 and Figure C4.75).

N60 24hrs

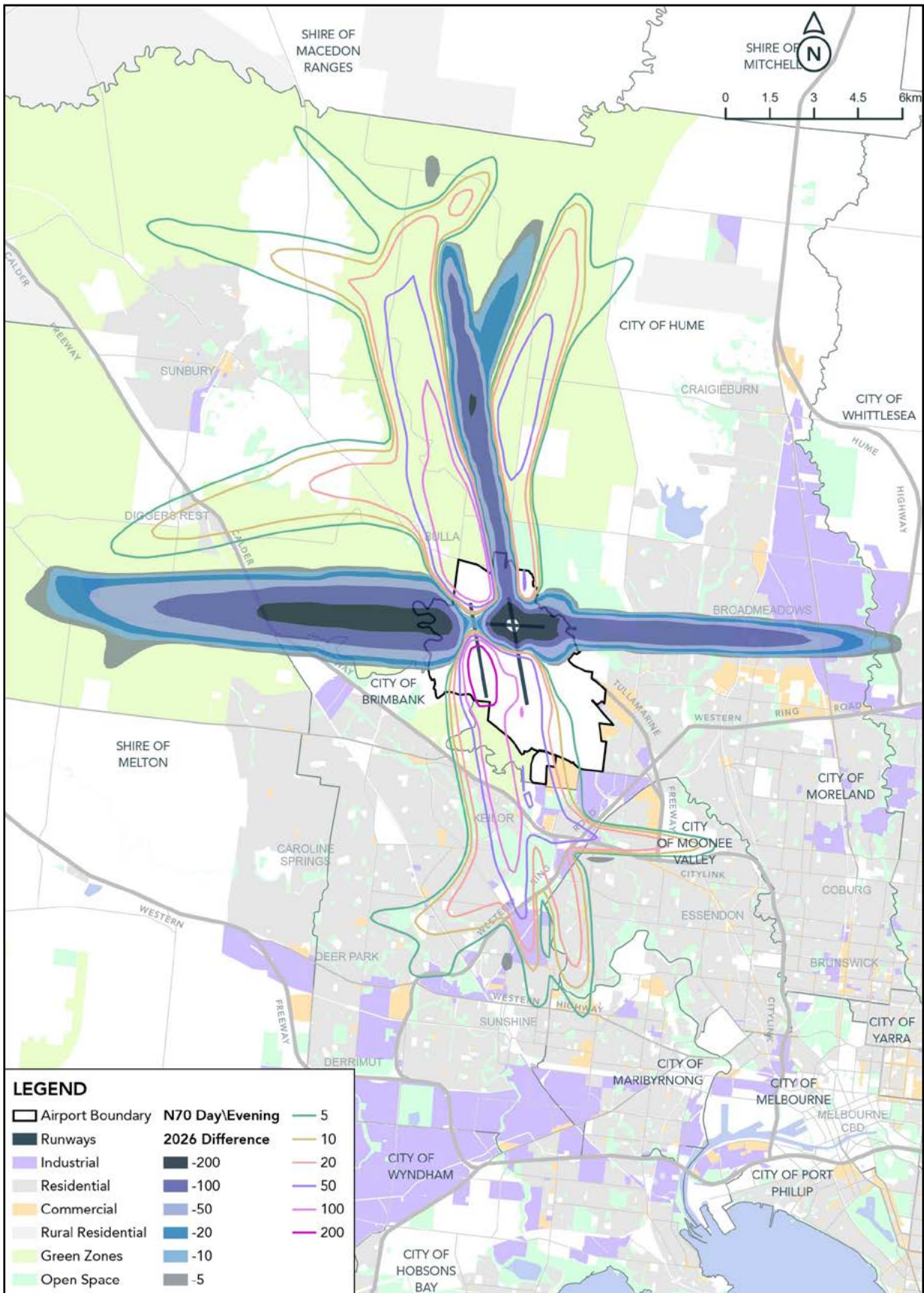
Similar trends are evident in the N60 24hr difference charts (Figure C4.76 and Figure C4.77).

Figure C4.69
N70 day and evening (6am to 11pm)
N-above difference M3R Option 1 versus No Build 2026 – N70 day and evening (6am to 11pm)



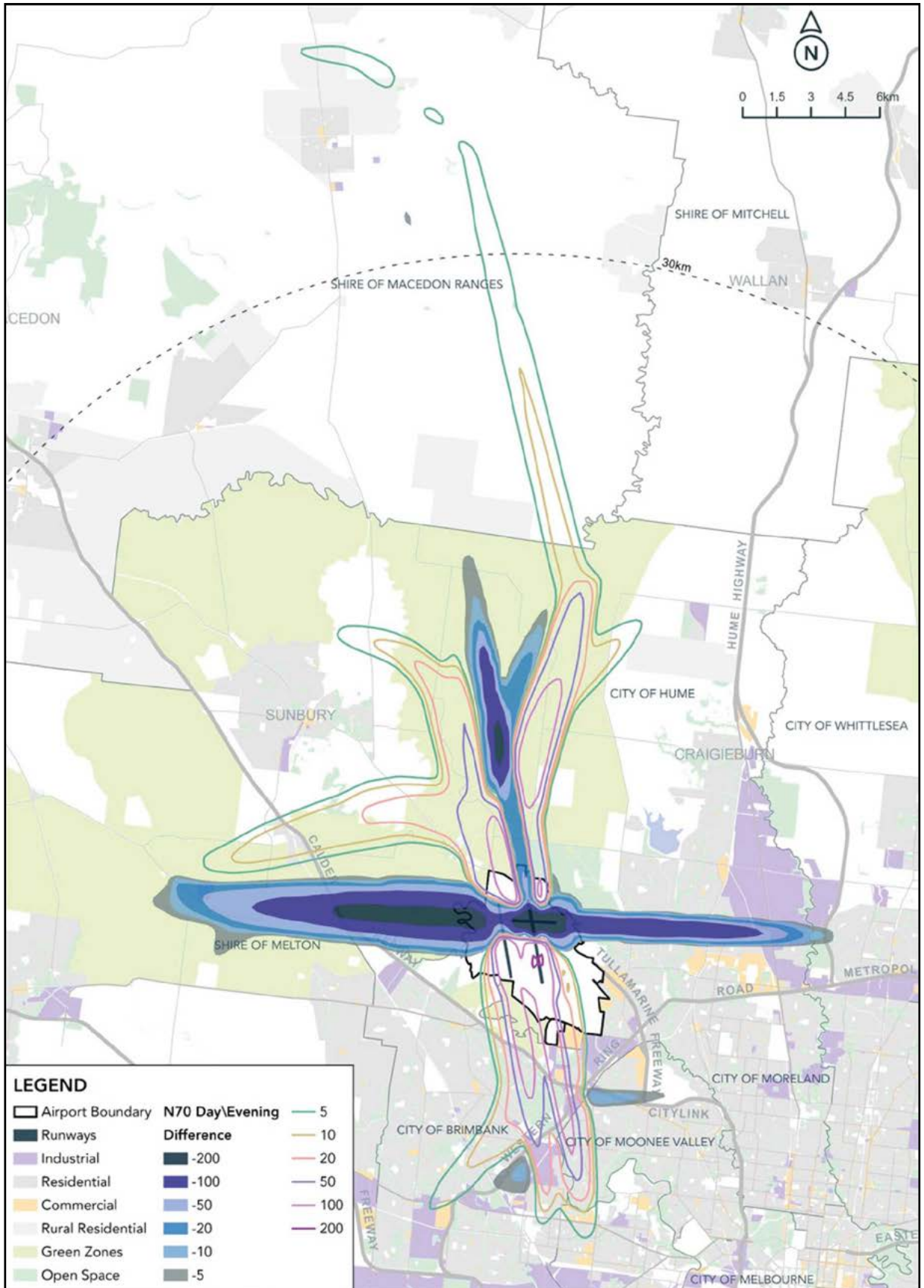
Source: SoundIN, 2020

Figure C4.70
N-above difference M3R Option 2 versus No Build 2026 – N70 day and evening (6am to 11pm)



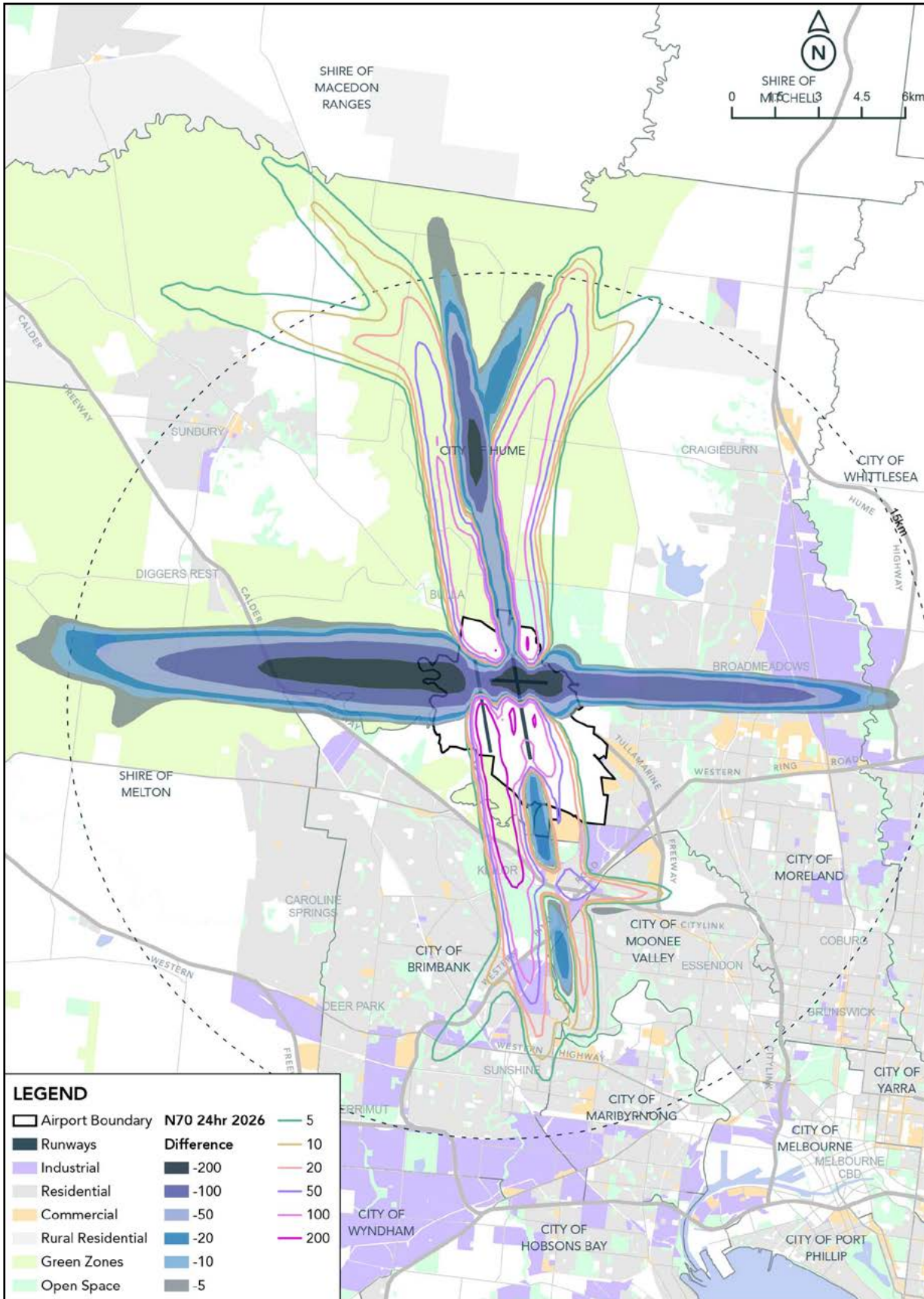
Source: SoundIN, 2020

Figure C4.71
N-above difference M3R Mixed Mode versus No Build 2026 – N70 day and evening (6am-11pm)



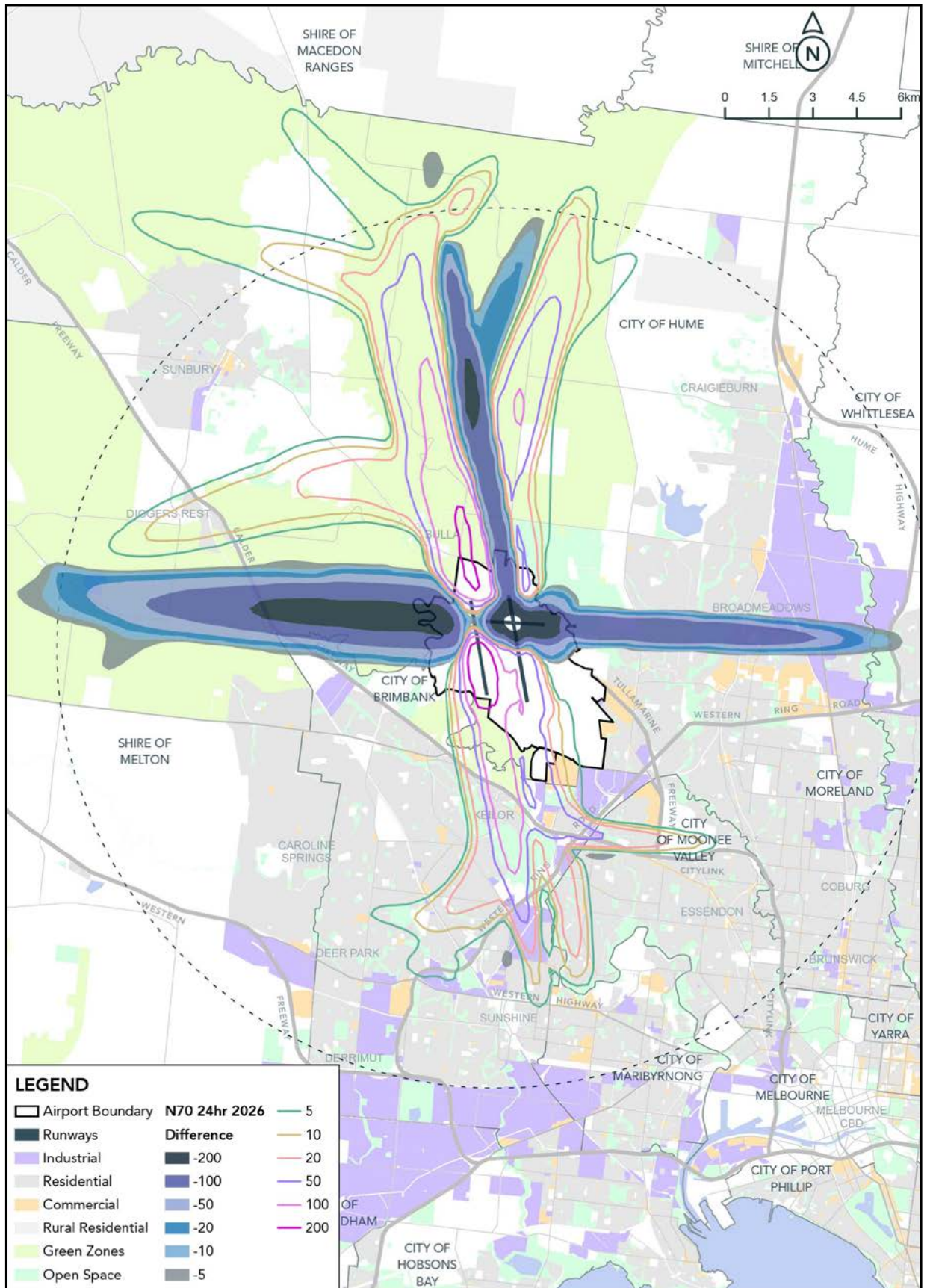
Source: SoundIN, 2020

Figure C4.72
N-above difference M3R Option 1 versus No Build 2026 – N70 24 hours



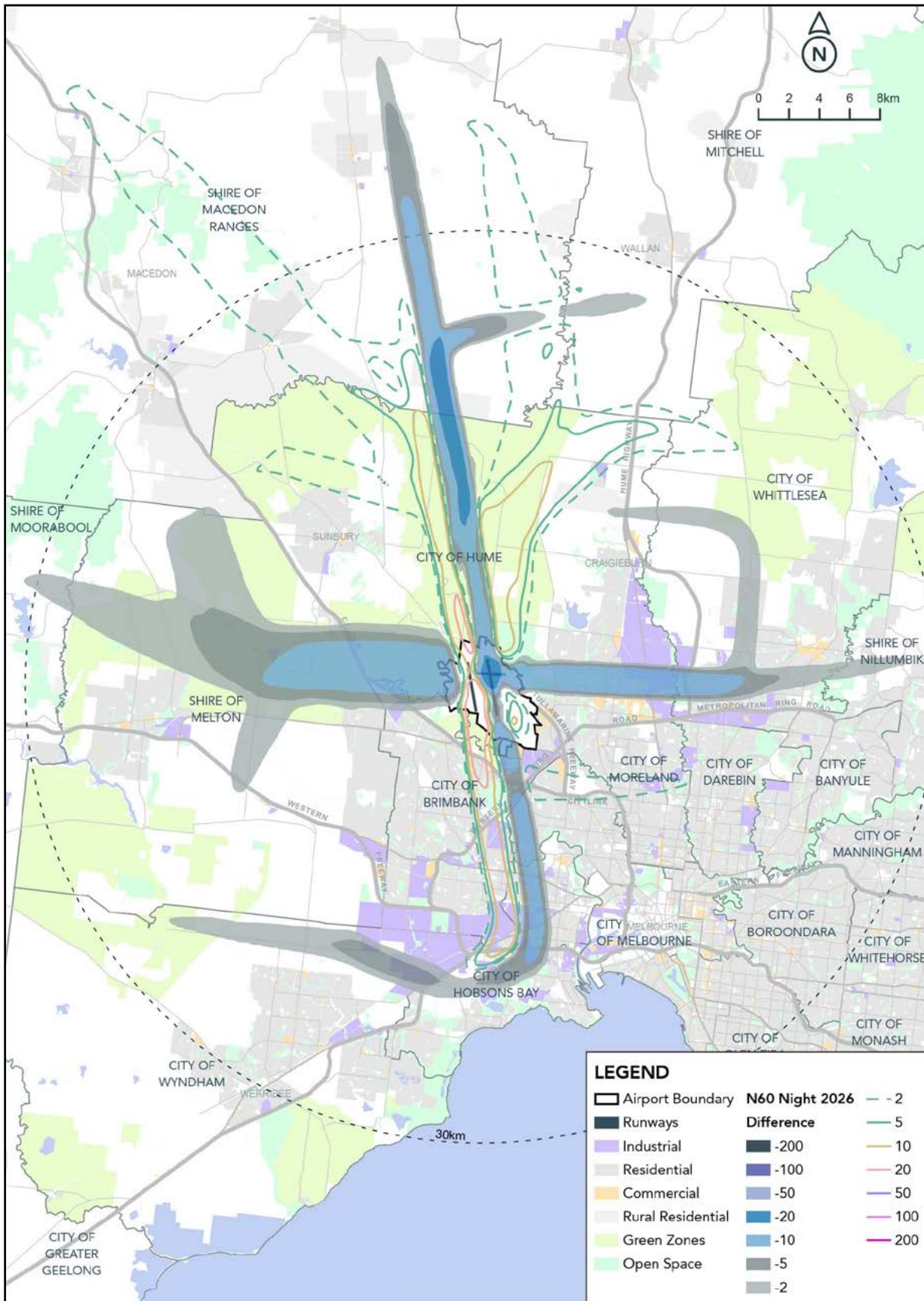
Source: SoundIN, 2020

Figure C4.73
N- above difference M3R Option 2 versus No Build 2026 – N70 24 hours



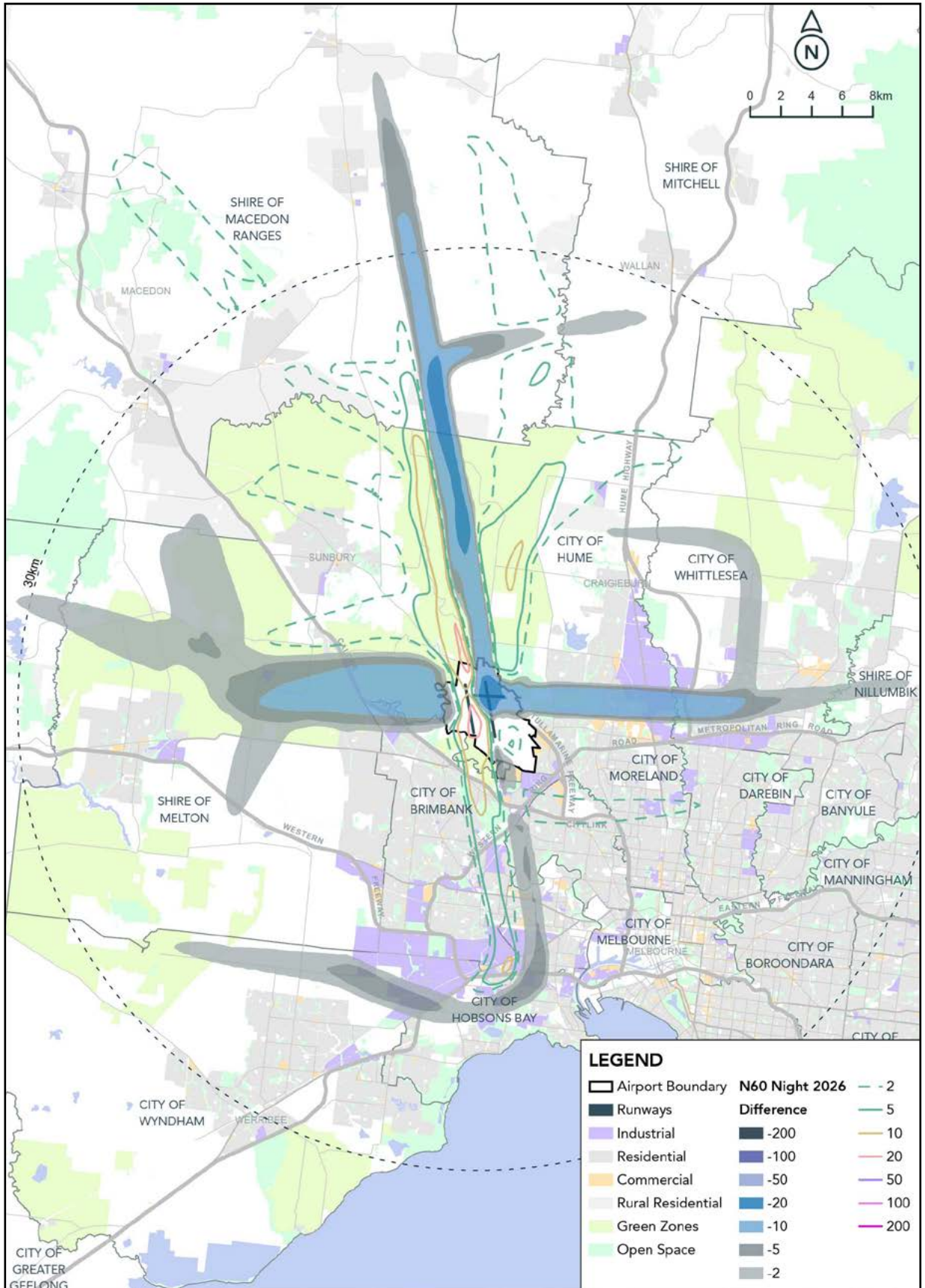
Source: SoundIN, 2020

Figure C4.74
N-above difference M3R Option 1 versus No Build 2026 – N60 night (11pm to 6am)



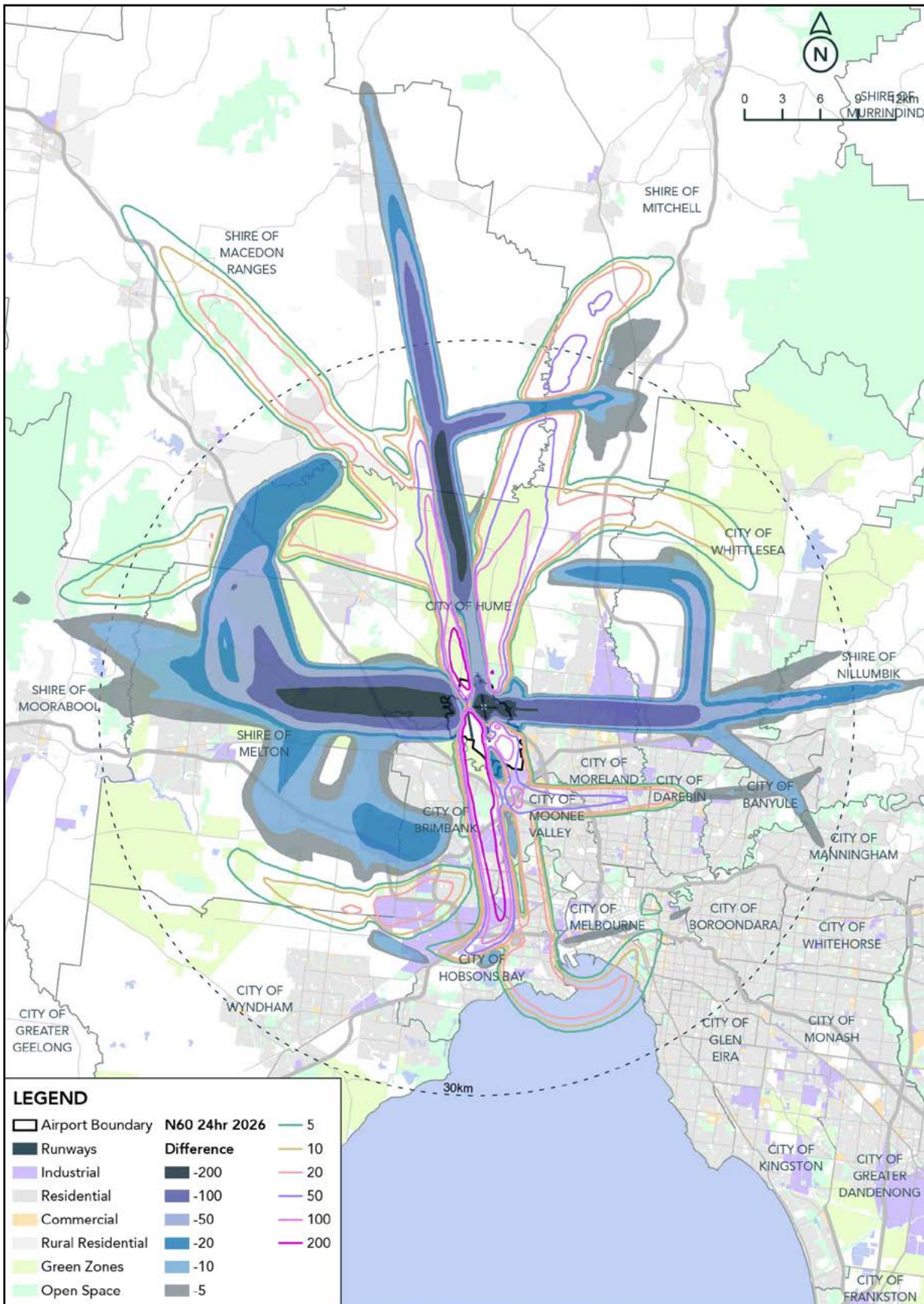
Source: SoundIN, 2020

Figure C4.75
N-above difference M3R Option 2 versus No Build 2026 – N60 night (11pm to 6am)



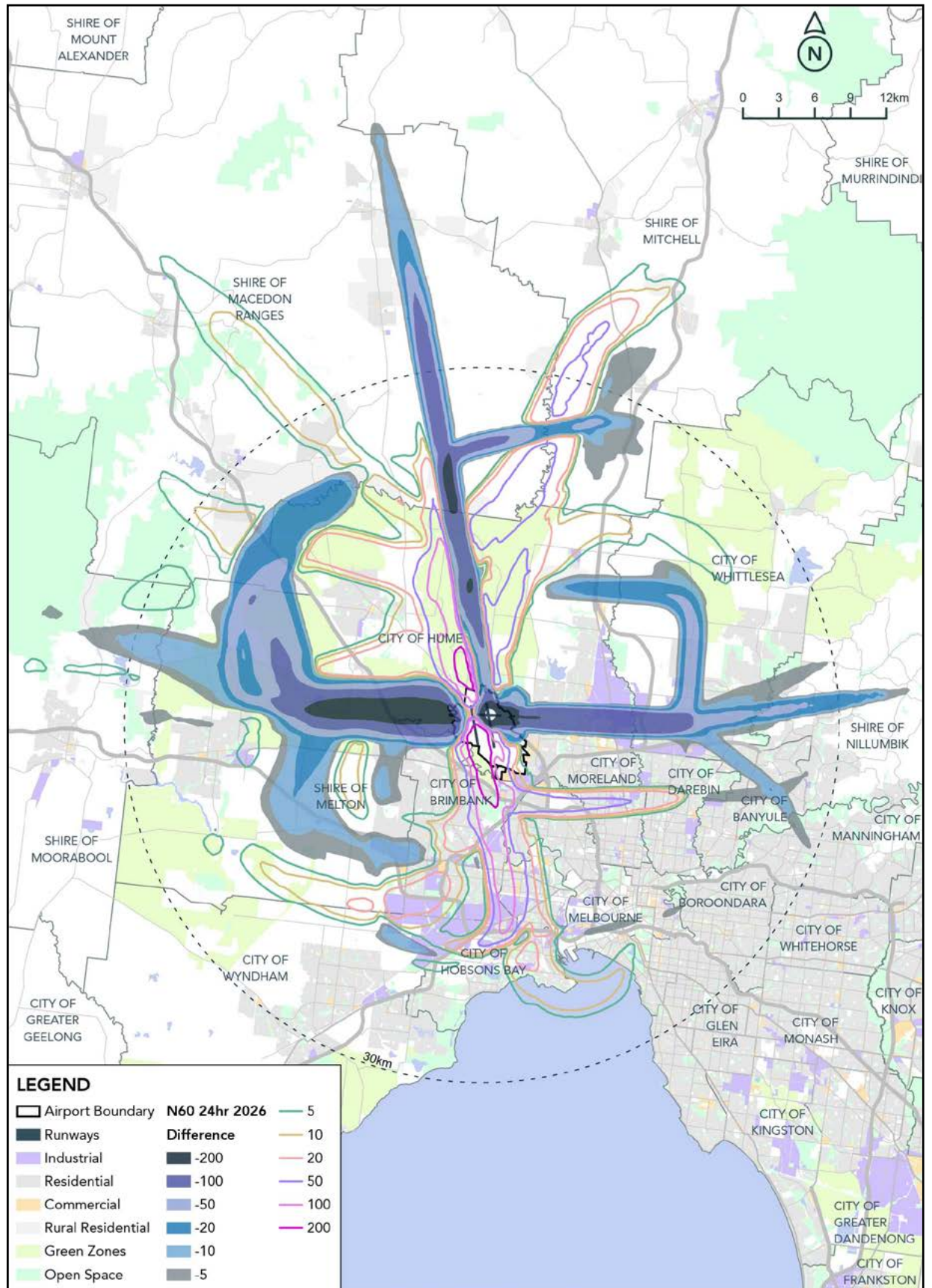
Source: SoundIN, 2020

Figure C4.76
N₆₀-above difference M3R Option 1 versus No Build 2026 – N₆₀ 24 hours



Source: SoundIN, 2020

Figure C4.77
N-above difference M3R Option 2 versus No Build 2026 – N60 24 hours



Source: SoundIN, 2020

C4.6.6

ANEC noise levels

The M3R ANEC for 2046 is presented in **Figure C4.78**. The ANEC is included in the 2022 Master Plan and the ANEF.

The presented ANEC is a composite of mixed mode, Option 1 and Option 2 strategies.

The ANEC extends along the standard instrument arrival and departure routes, up to approximately 11 kilometres from the runways. Extents south of the airport are similar to the airport's previous ANEF.

C4.6.7

Flight zone diagrams

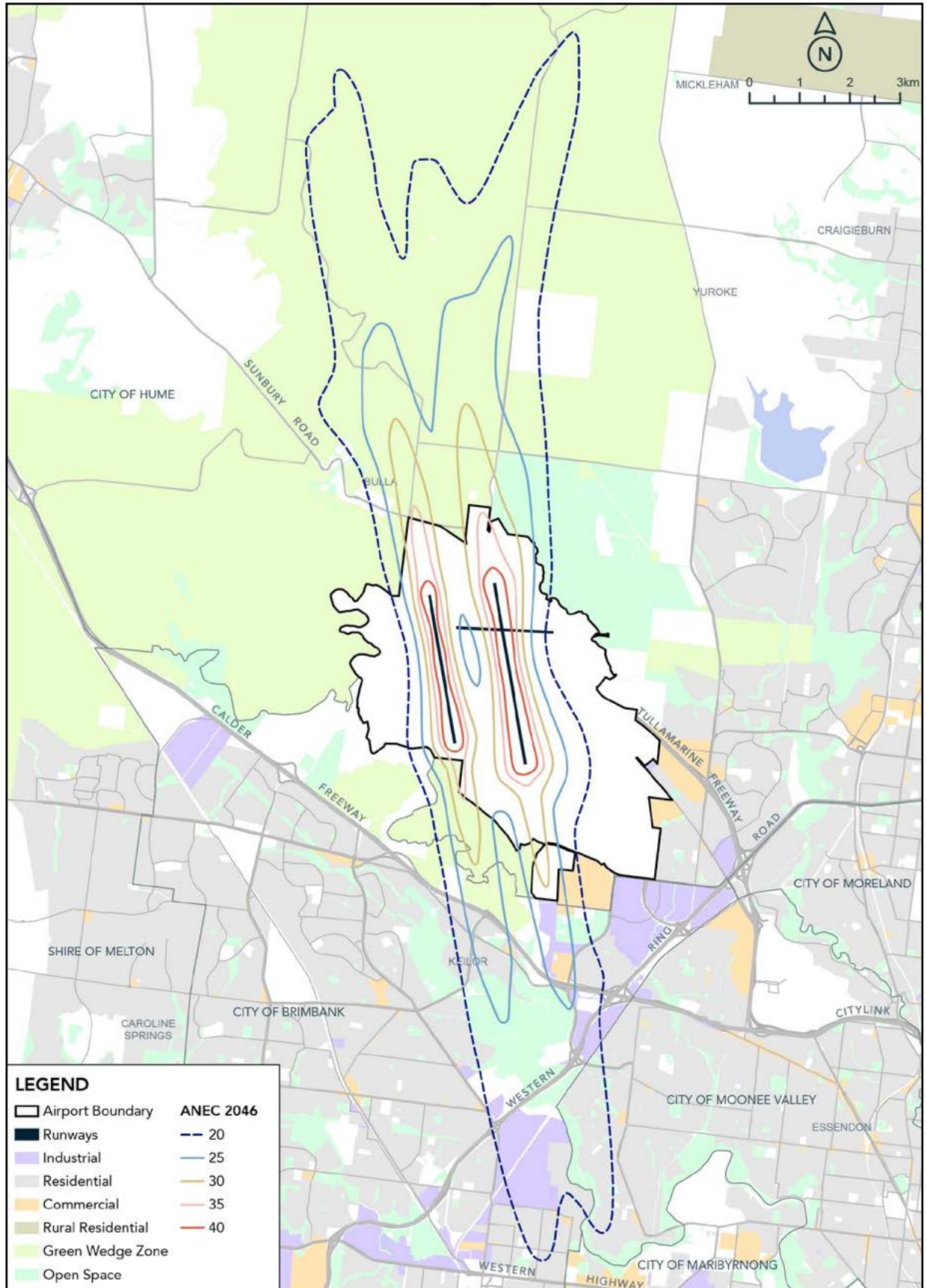
Flight track movement charts for 2026 are presented in **Figure C4.79** through to **Figure C4.84**.

Flight zone diagrams are indicative. The final airspace design may result in concentrated flight paths, most likely within the zones indicated.

In the flight zone diagrams, the typical daily range is defined as from the 20th percentile to the 90th percentile (i.e. excluding the lowest 20 per cent of days with fewest predicted movements and the highest 10 per cent of days with most predicted movements). 'Respite' in the following figures indicates the percentage of days with no flights predicted for the nominated period.

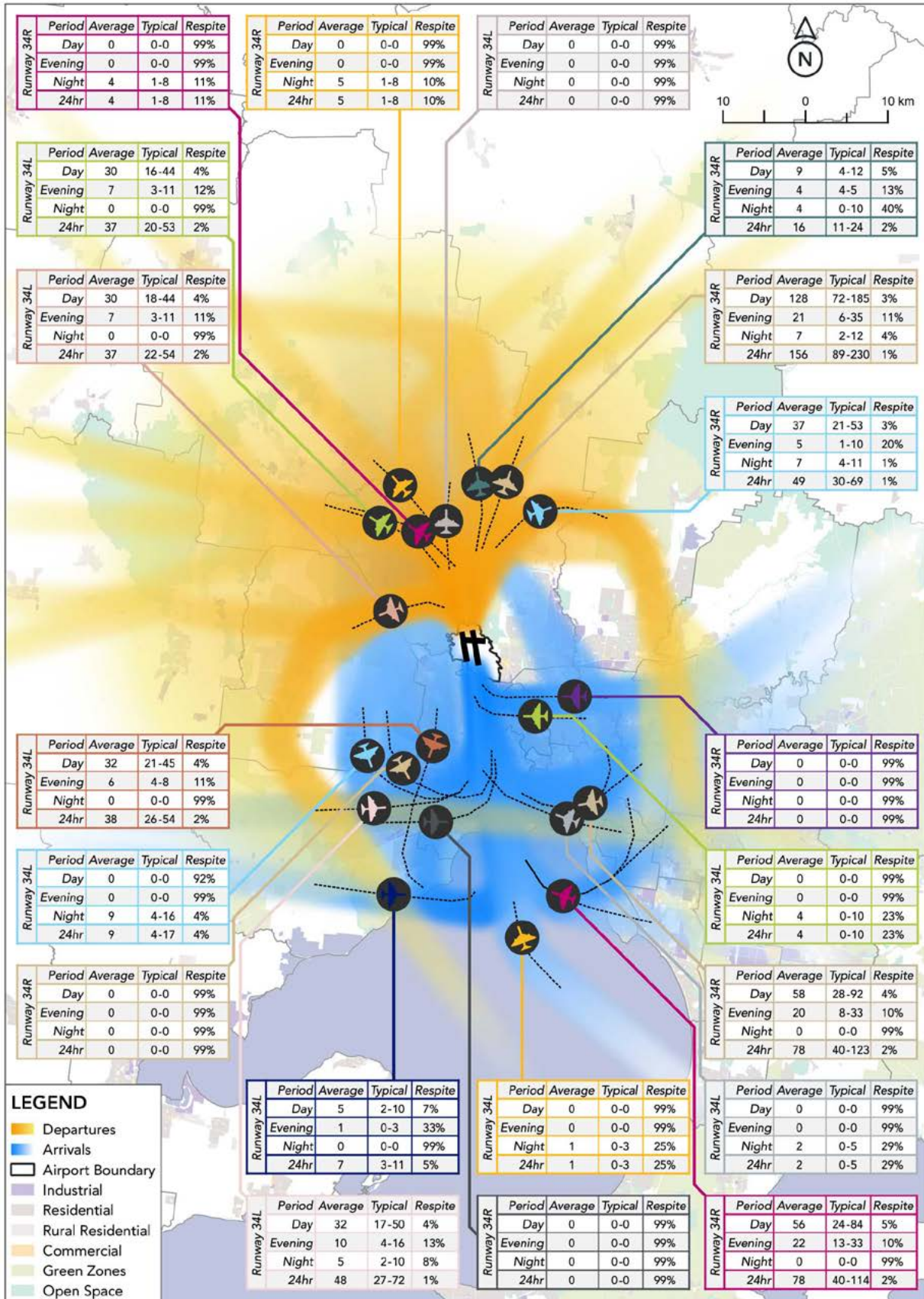
Flight zone diagrams are provided for mixed mode in both the northerly (34 direction) and the southerly direction (16 direction). In addition, flight zone diagrams are provided for segregated mode Option 1 and Option 2 in both the northerly and southerly directions.

Figure C4.78
M3R 2046 ANEC



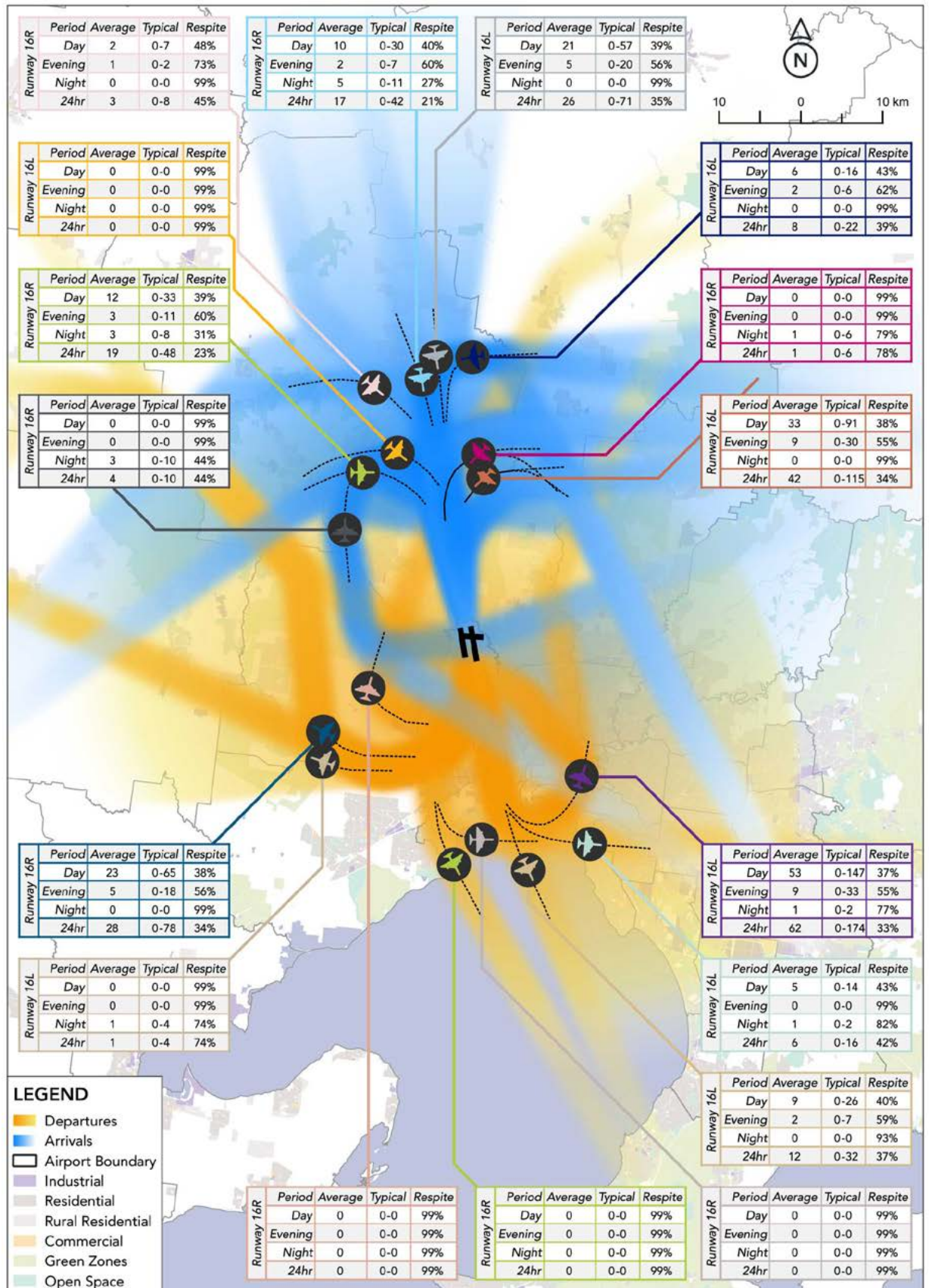
Source: SoundIN, 2020

Figure C4.79
M3R Mixed Mode 2026 – flight track movement chart for 34L & 34R



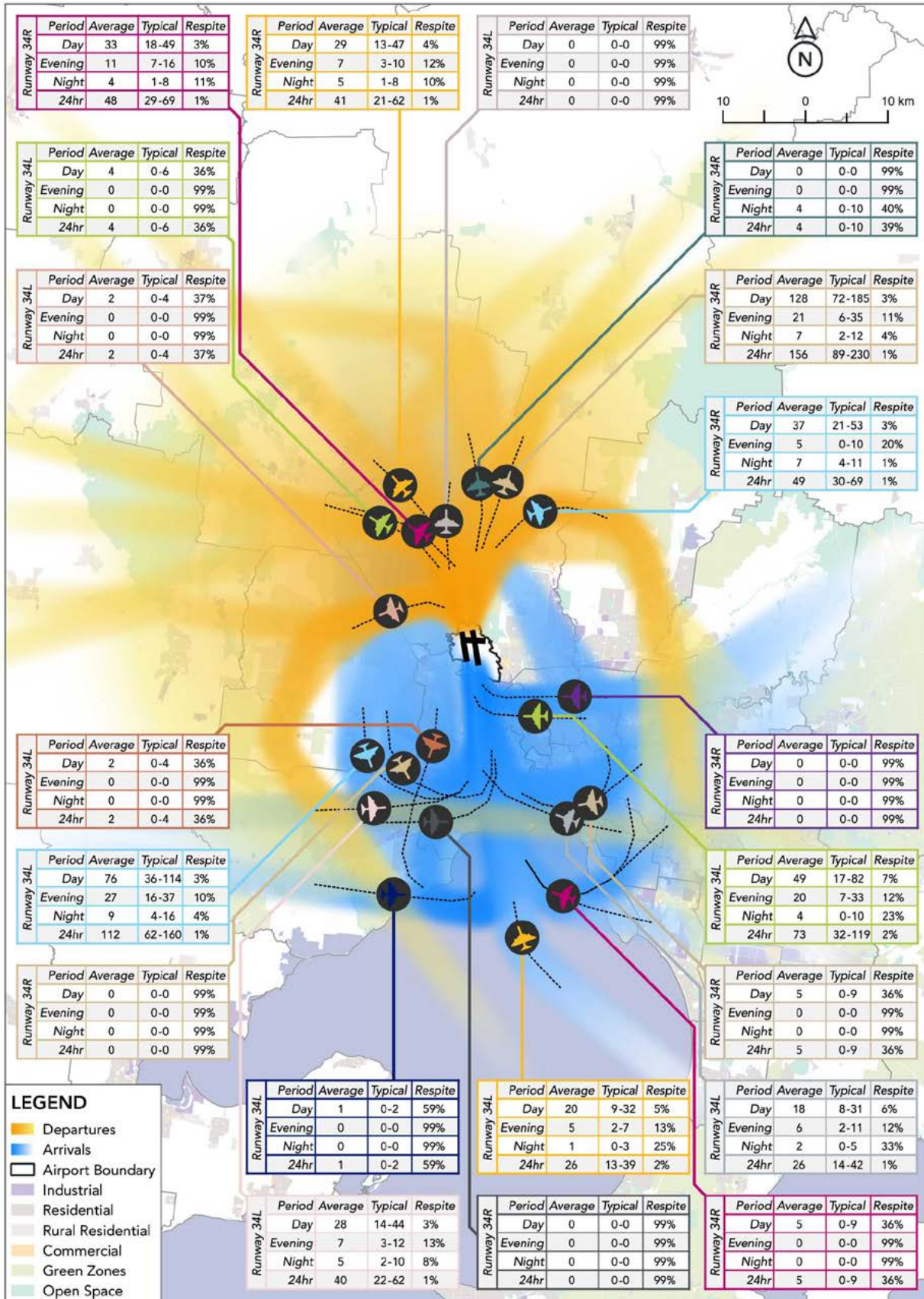
Source: SoundIN, 2020

Figure C4.80
M3R Mixed Mode 2026 – flight track movement chart for 16L & 16R



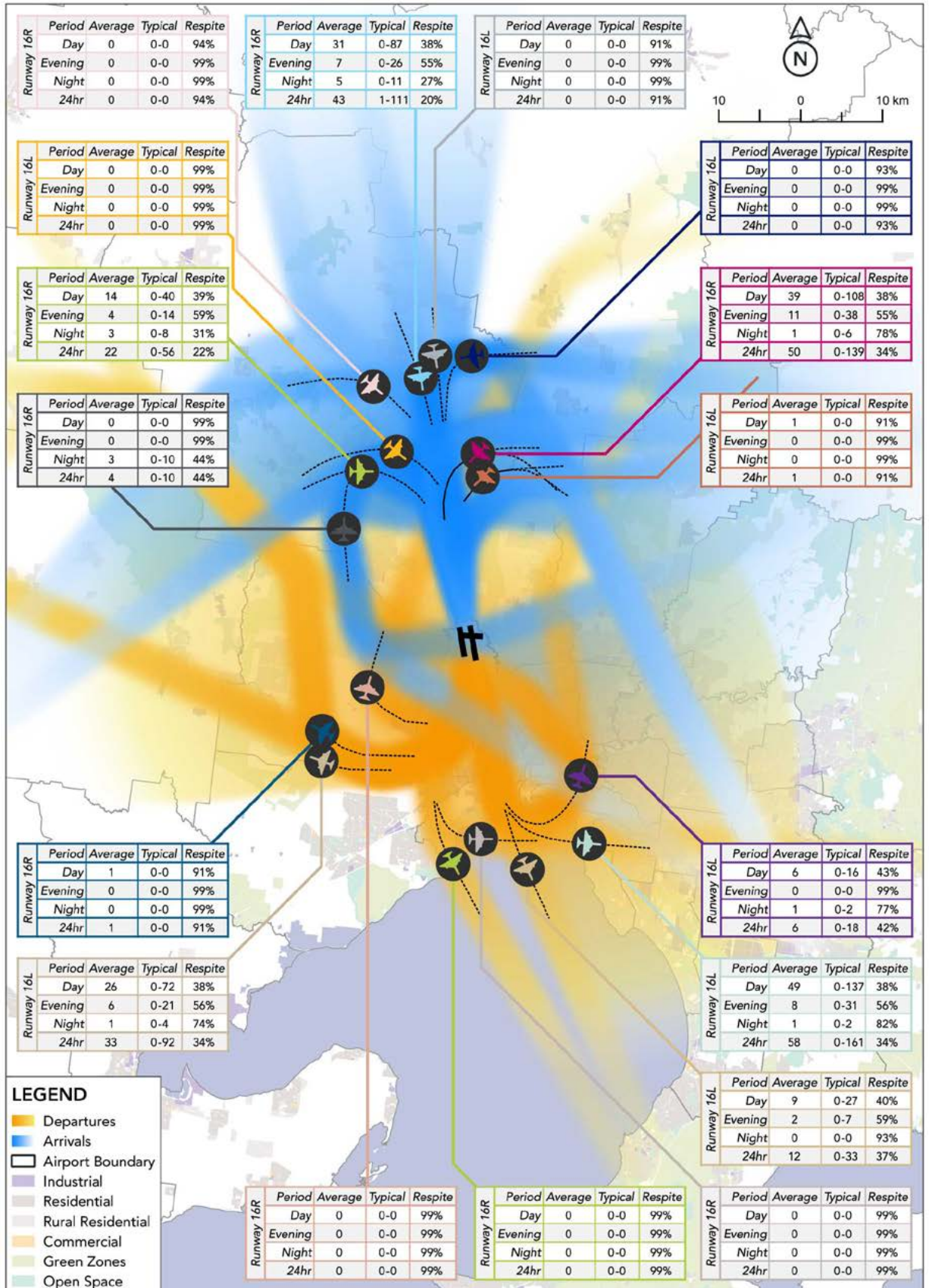
Source: SoundIN, 2020

Figure C4.81
M3R Option 1 2026 – flight track movement chart for 34L & 34R



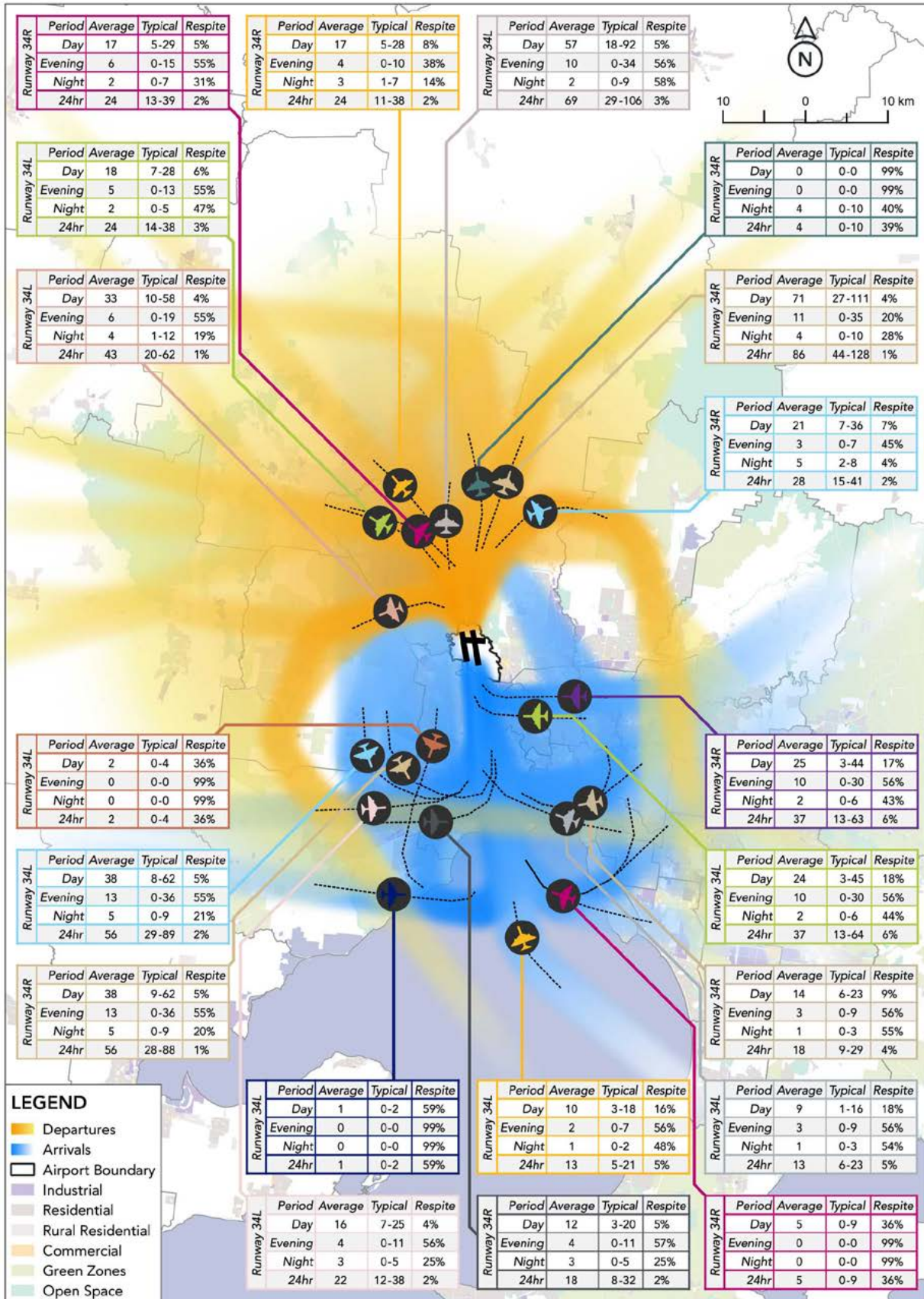
Source: SoundIN, 2020

Figure C4.82
M3R Option 1 2026 – flight track movement chart for 16L & 16R



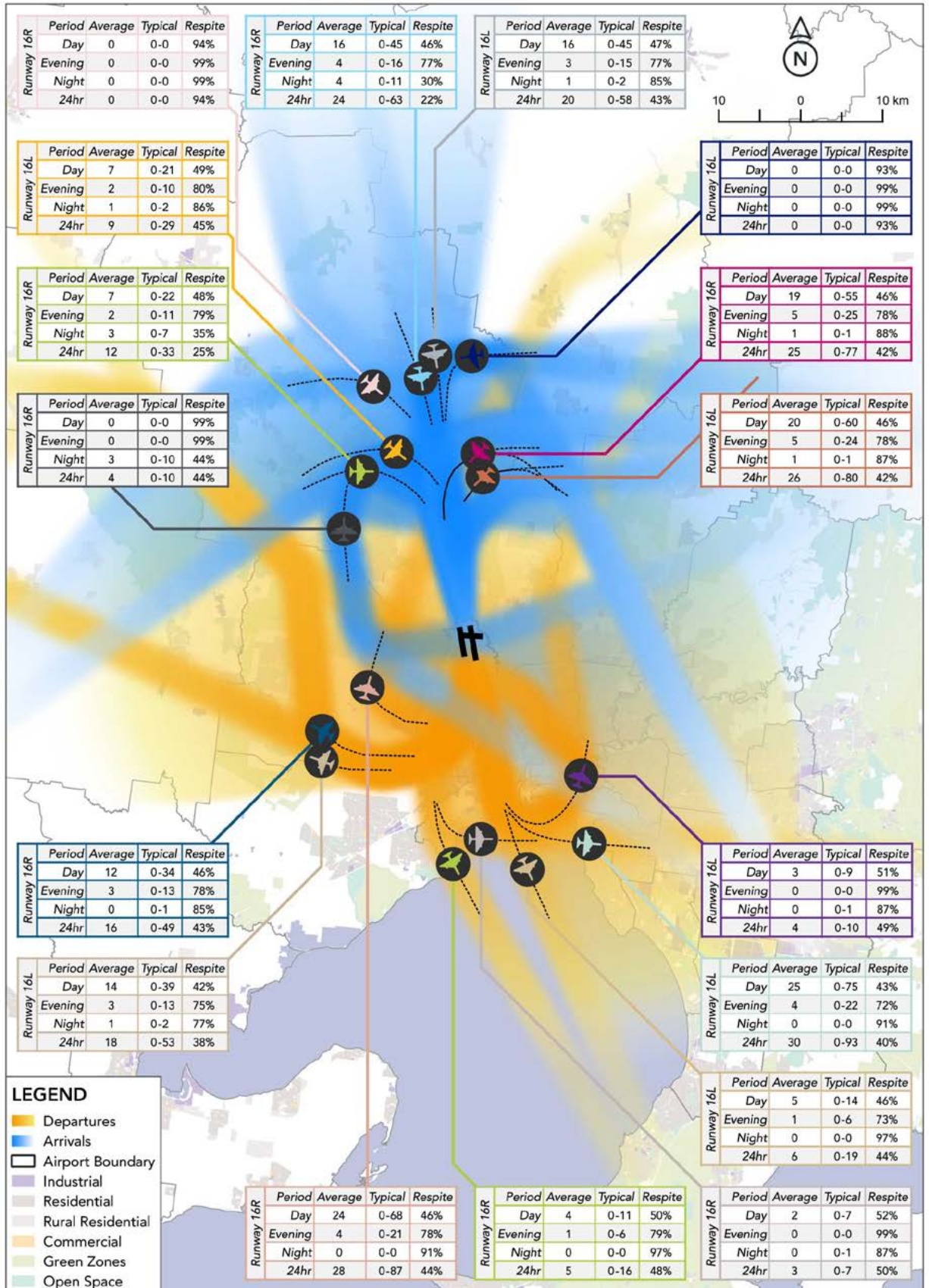
Source: SoundIN, 2020

Figure C4.83
M3R Option 2 2026 – flight track movement chart for 34L & 34R



Source: SoundIN, 2020

Figure C4.84
M3R Option 2 2026 – flight track movement chart for 16L & 16R



Source: SoundIN, 2020

C4.6.8

Indicative noise-altitude distance charts

Indicative noise-altitude distance charts show how aircraft noise levels decrease as altitude increases, moving away from the airport.

Noise levels are indicated by the single-event maximum noise level (L_{Amax}).

Figure C4.85 and Figure C4.86 present the indicative noise-altitude distance charts for arrivals and departures respectively. Three indicative aircraft types are represented, being typical of Melbourne Airport's current fleet.

Chapter C3: Aircraft Noise Modelling Methodology explains that because longer flights generally require aircraft to carry more fuel on departure, they are heavier and so use higher thrust settings with lower climb profiles. Recognising this, Figure C4.86 presents a range of potential distances that would be flown. Example destinations in each classification are:

- Short range: Sydney, Brisbane, Adelaide
- Medium range: west coast of Australia, New Zealand
- Medium-long range: Asia
- Long range: Middle East and the Americas.

Departures of large narrow-body jets on short-range routes are predicted to produce 80 dB(A) at two kilometres, 70 dB(A) at 7.5 kilometres and 60 dB(A) at 22 kilometres.

On medium range flights such as Perth, the additional thrust and lower altitudes are expected to result in slightly higher L_{Amax} noise levels with 80 dB(A) at three kilometres, 70 dB(A) at 10 kilometres and 60 dB(A) at 28 kilometres.

Departures of medium wide-body jets generally produce noise levels similar to those of narrow-bodied jets.

Departures of very large wide-body jets to long-range airports are generally among the loudest operations. They are projected to produce L_{Amax} noise levels of 80 dB(A) at 6.5 kilometres, 70 dB(A) at 15 kilometres and 60 dB(A) at 33 kilometres.

Figure C4.85 indicates that arrivals of larger aircraft are predicted to be generally louder than those of smaller aircraft. All three sizes of jet are predicted to produce 80 dB(A) at a distance of approximately 4.5 kilometres and 70 dB(A) at approximately 11 kilometres from the runway.

The extents of the 60 dB(A) contours do vary between the three aircraft sizes: arrivals of large narrow-body jets are predicted to produce 60 dB(A) approximately 28 kilometres from the runway, whereas medium wide-body and very large wide-body jets are predicted to produce 60 dB(A) at 37 kilometres and 40 kilometres respectively.

C4.7

NOISE-INDUCED VIBRATION

The low-frequency components of extensive aircraft noise can result in vibration of loose elements in buildings, most notably windows. Even at the highest expected noise levels, the intensity of vibration due to low-frequency noise is well below that which may cause structural damage to buildings.

Noise-induced vibration may begin in typical light building structures when the maximum external noise level reaches approximately 90 A-weighted decibels. It is more commonly related to take-offs than landings, as the noise spectrum for take-off has stronger low-frequency components close to the airport.

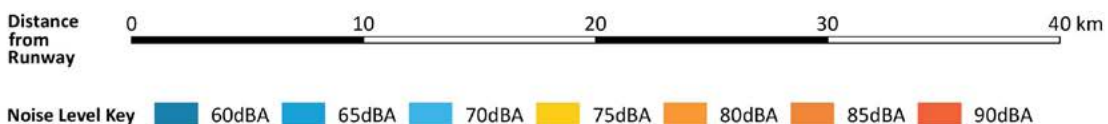
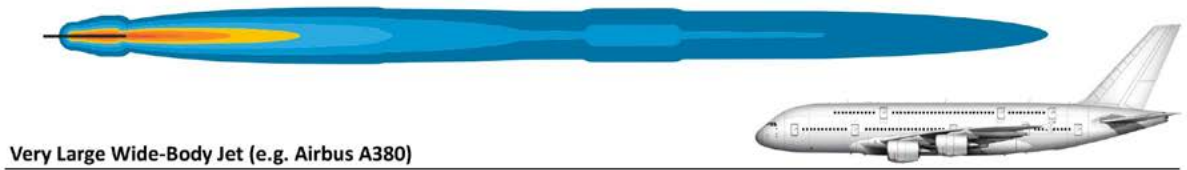
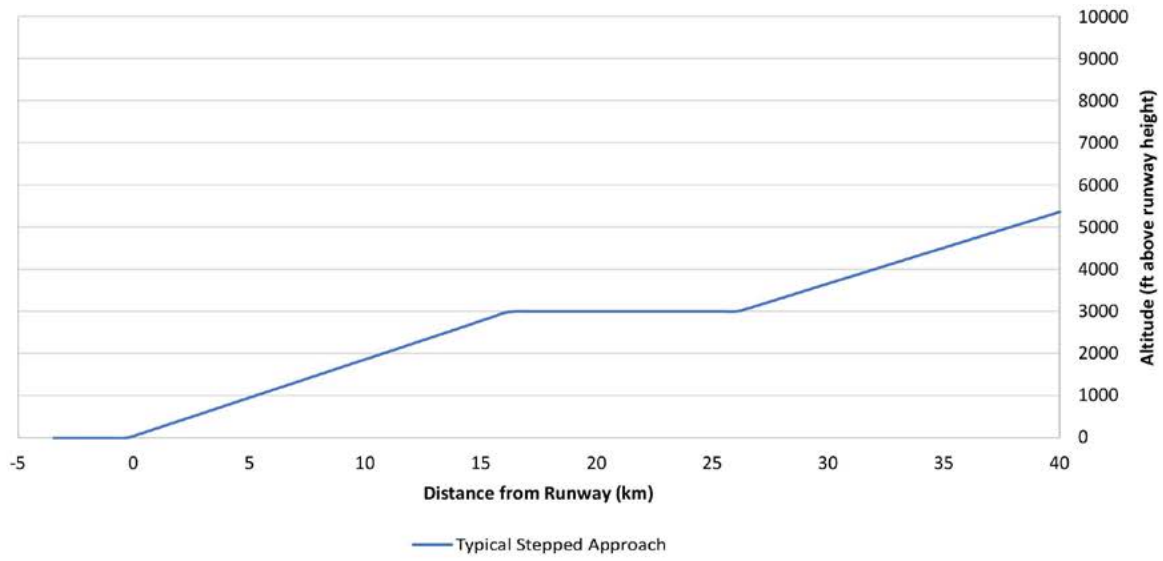
Figure C4.87 shows 90 A-weighted decibels noise-level contours for the loudest regular arrival and departure events at Melbourne Airport.

Only areas within the 90 A-weighted decibels contour could expect to experience any noise-induced vibration of building structures – and then only during the loudest aircraft operations.

It is noted that maximum noise levels north and south of the existing runway are not expected to change as a result of M3R given the loudest operations already depart off the existing runway.

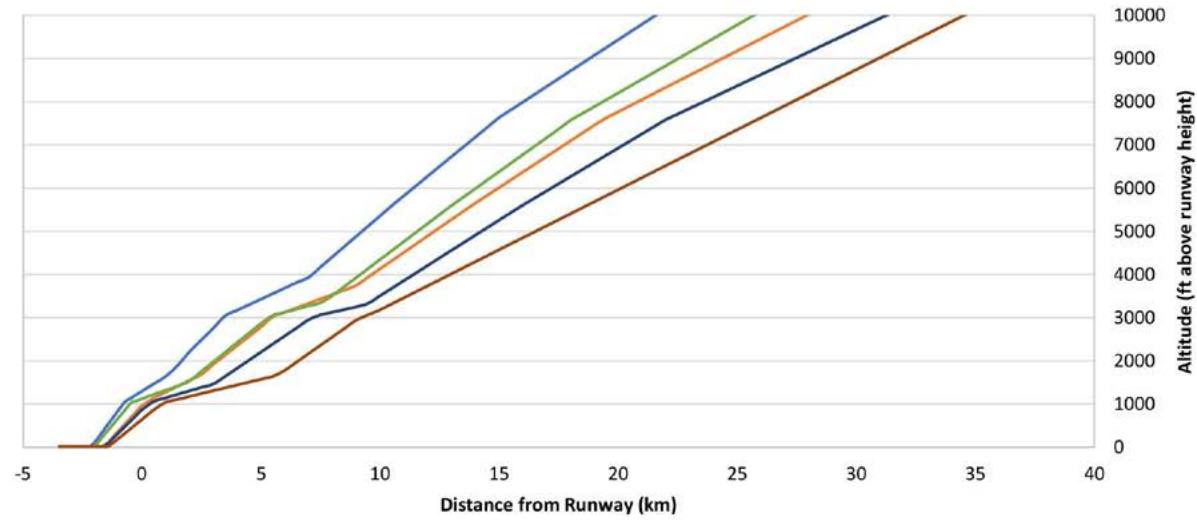
Five dwellings have been identified within the predicted 90 A-weighted decibels contour south of the new runway: numbers 105, 95, 65, 55 and 45 McNabs Road, Keilor. An estimated 37 dwellings have been identified within the predicted 90 A-weighted decibels contour north of the new runway, on the eastern outskirts of Bulla and to the north.

Figure C4.85
Indicative noise altitude distance chart – arrivals

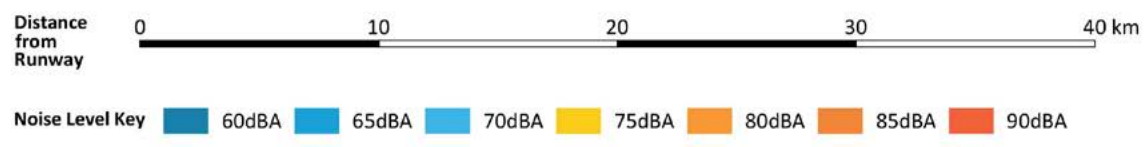
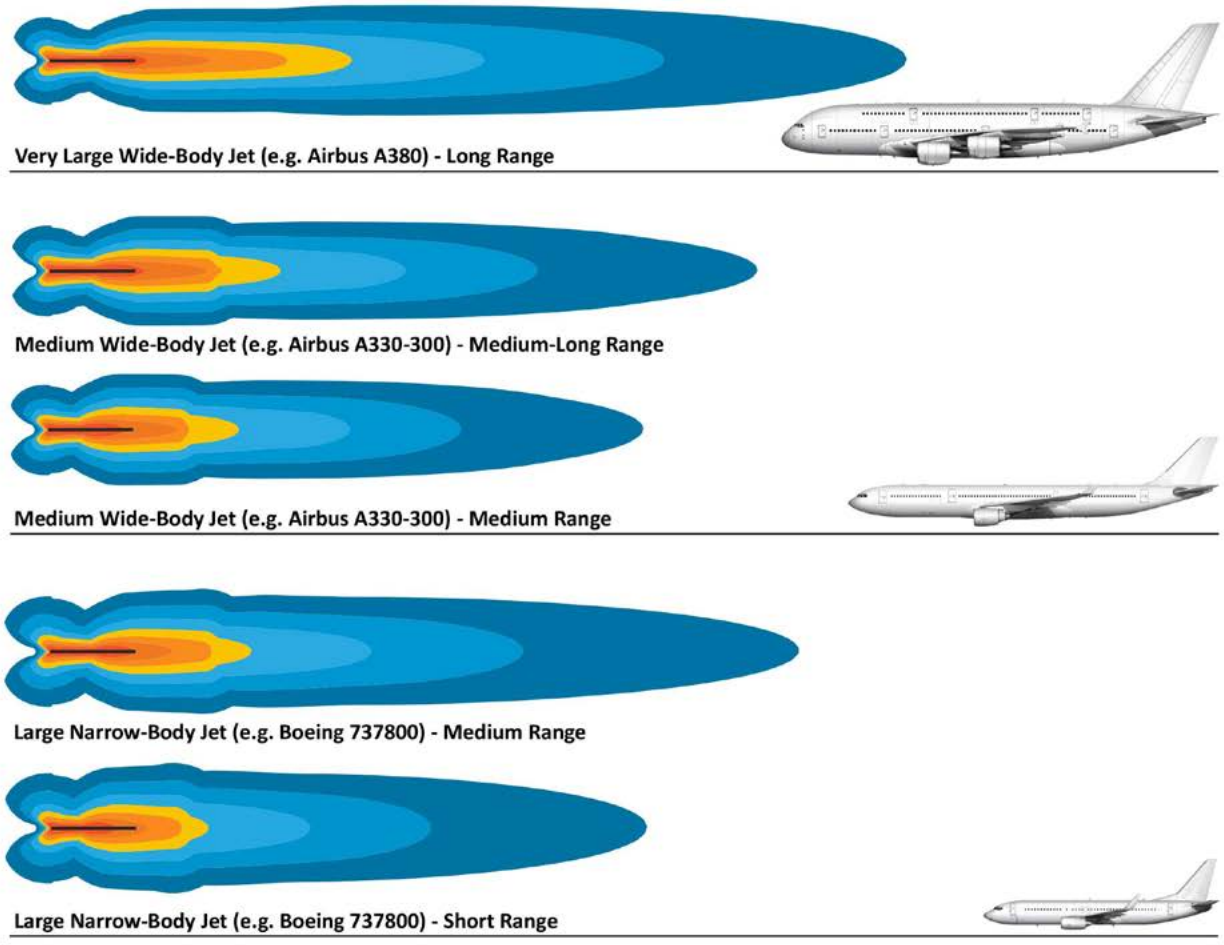


Source: SoundIN, 2020

Figure C4.86
Indicative noise altitude distance chart – departures

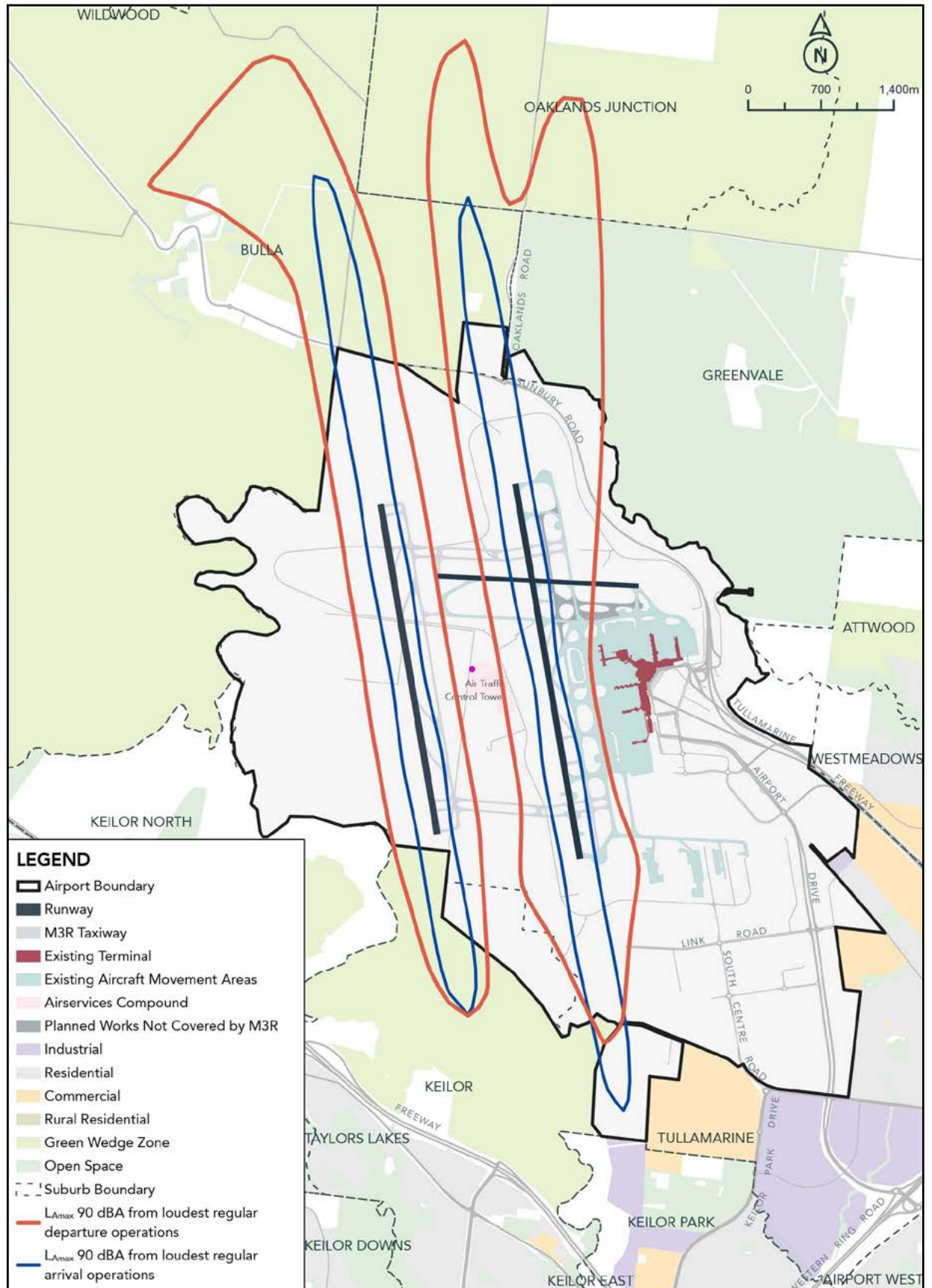


- Large Narrow-Body Jet - Short Range
- Large Narrow-Body Jet - Medium Range
- Medium Wide-Body Jet - Medium Range
- Medium Wide-Body Jet - Medium-Long Range
- Very Large Wide-Body Jet - Long Range



Source: SoundIN, 2020

Figure C4.87
90 A-weighted decibels contours the loudest forecast arrival and departure events L_{Amax}



Source: SoundIN, 2020

C4.8 AIRCRAFT NOISE EVENTS IN VARIOUS RECEIVING NOISE ENVIRONMENTS

The subjective prominence of aircraft noise events is partly dependent on them becoming distinct from the ambient noise environment. There are a variety of noise environments within the nominal study area. Section C4.2 discusses these, along with indicative ambient noise

levels. Table C4.7 describes the subjective noise level for 60 A-weighted decibel and 70 A-weighted decibel aircraft noise events with reference to various ambient noise environments.

Table C4.7
Subjective description of aircraft noise levels relative to the ambient noise level

Ambient noise level (L_{Aeq} dB(A))	Likely environment(s)	Aircraft noise level (L_{Amax} dB(A))	Emergence (dB(A))	Description
40 or less	Area with negligible transportation or industry. Likely described as rural.	60	20 or more	Finite aircraft noise events of 60dB(A) would be prominent above the ambient noise level. Subjectively it is likely to be perceived as more than twice as loud as ambient noise.
		70	30 or more	Finite aircraft noise events of 70dB(A) would be prominent above the ambient noise level. Subjectively it is likely to be perceived as more than twice as loud as ambient noise.
50	Areas with low density transportation and negligible commerce or industry. Likely described as rural, perhaps with rural residential areas. May be representative of quiet suburban areas with limited exposure to transportation noise.	60	10	Finite aircraft noise events of 60dB(A) would be prominent above the ambient noise level. Subjectively it is likely to be perceived as more than twice as loud as ambient noise of 50 dB(A).
		70	20	Finite aircraft noise events of 70dB(A) would be prominent above the ambient noise level. Subjectively it is likely to be perceived as more than twice as loud as ambient noise.
60	Areas with dense transportation or some commerce or industry. Representative of many urban centres. Examples: Airport West Around 200m to Tullamarine Freeway, Calder Freeway or the Western Ring Road Near (~100m) to sub-arterial roads such as Mickleham Road, Melton Highway and Sydney Road	60	Nil	Finite aircraft noise events of 60dB(A) would be heard at a similar level to ambient noise and is likely to be audible.
		70	10	Finite aircraft noise events of 70dB(A) would be prominent above the ambient noise level. Subjectively it is likely to be perceived as more than twice as loud as ambient noise of 60 dB(A).
65	Areas with very dense transportation or in commercial districts or bordering industrial districts. Examples: Near (≈100m) to Tullamarine Freeway, Calder Freeway or the Western Ring Road Very near (≈50m) to sub-arterial roads such as Mickleham Road, Melton Highway and Sydney Road	60	-5	Finite aircraft noise events of 60 dB(A) would be partially masked by the ambient noise but is not likely to be heard by an attentive listener.
		70	5	Finite aircraft noise events of 70 dB(A) would be heard at a slightly louder level than ambient noise.
70	Areas with extremely dense transportation or within predominantly industrial districts. Examples: Very near (≈50m) to Tullamarine Freeway, Calder Freeway or the Western Ring Road	60	-10	Finite aircraft noise events of 60 dB(A) would be largely masked by the ambient noise – likely audible.
		70	Nil	Finite aircraft noise events of 70 dB(A) would be heard at a similar level to ambient noise - likely audible.

C4.9 ASSESSMENT OF CUMULATIVE NOISE: AIRCRAFT AND GROUND-BASED AIRPORT SOURCES

Aircraft noise from flight operations will be experienced both on-airport and off-airport. Noise emissions from on-airport sources will be far more localised. The character of the two noise sources (aircraft and ground based) will also differ. Aircraft noise events will generally be much louder, finite noise events. For locations where ground based noise is audible, this will generally be more steady-state, with occasional increases in noise level due to finite events such as taxiing or ground running.

Ground-based noise will generally be far quieter than aircraft flight operations. The ground-based noise assessment (Chapter B9: Ground-Based Noise and Vibration) concludes that noise impacts are only likely to occur only within 2.5 kilometres of the airport boundary.

Note that further assessment of the cumulative impacts of aircraft and ground-based noise is not warranted here as the impacts are almost exclusively related to aircraft noise, which is described in this chapter and assessed further in Chapter D4: Social Impact.

C4.10 ESTIMATED NUMBER OF AFFECTED DWELLINGS

Estimates of the number of dwellings affected by aircraft noise are provided in this section. Effective interpretation of these tables requires understanding of the following:

- The number of existing dwellings within N-above contours has been counted
- The change in N-above value has been evaluated for each dwelling in the data and is presented for each M3R N-above contour (i.e. the N70=5 row gives the number of dwellings within the M3R N70=5 and would experience an increase or decrease in N70 events corresponding to the relevant column)
- For the purpose of estimating how many dwellings would be newly affected by aircraft noise, a threshold of N-above=1 was assumed. Therefore, the estimated number of newly affected dwellings in the N70=5 row presents the number of dwellings predicted to experience N70 of 5 to 10 with M3R but N70 less than one without M3R
- It is noted that dwellings that would be exposed to N-above greater than the assumed threshold without M3R are not discounted. Predicted N-above increases at such dwellings are reported in the corresponding count of dwellings predicted to receive increased N-above events (e.g. a dwelling exposed to four N70 events without M3R, but nine N70 events with M3R, would be represented by the increase five in the N70=5 row. However, such a receiver would not be considered to be newly affected by aircraft noise).

An example table is presented as Figure C4.88. This analysis has also been undertaken for each sub-burb separately, with the results presented in Appendix C4.A.

Figure C4.88 Worked example of interpreting dwelling count tables

Option	N70	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N70)										Estimated no. of newly affected dwellings		
		M3R	No Build	Increase					Decrease						Unchanged	
				5	10	20	50	100	5	10	20	50	100			
Option 1	None	-	-	-	-	-	-	-	-	5,973	1,749	2,543	-	2	-	-
	5	9,097	9,150	3,922	4,23	9	-	-	414	167	405	3	2	3,752	5,317	
	10	12,986	8,248	1,593	7,896	-	-	-	360	409	1,454	26	2	10,962	9,476	
	20	6,769	5,727	1,741	1,168	1,772	274	80	22	3	908	621	17	163	2,556	
	50	3,774	5,059	52	37	1,309	861	1,488	1	-	2	-	24	-	2,803	
	100	7,408	168	5	2	214	2,803	4,365	1	-	1	2	15	-	4,303	
	200	1	48	-	-	-	-	1	-	-	-	-	-	-	-	

- Dwellings within the M3R Option 1 2026 N70=10-20 zone are counted in this row
- The number of dwellings identified in the M3R Option 1 2026 N70=10-20 zone
- The number of dwellings identified in the "No Build" 2026 N70=10-20 zone
- The number of dwellings in the M3R Option 1 2026 N70=10-20 that are predicted to increase by 10-20 compared to the "No Build"
- The number of dwellings in the M3R Option 1 2026 N70=10-20 that are predicted to decrease by 20-50 compared to the "No Build"
- The number of dwellings in the M3R Option 1 2026 N70=10-20 that are predicted to neither increase or decrease by 5 or more compared to the "No Build"
- The number of dwellings in the M3R Option 1 2026 N70=10-20 that are predicted to be "Newly Affected" (i.e. less than N70=1 in the "No Build")

Source: ARUP, 2015

C4.10.1**Estimated number of affected dwellings for M3R 2026**

This section presents the estimated number of dwellings for the M3R 2026 scenarios. Table C4.8 to Table C4.11 present the N70 day and evening, N70 24hrs, N60 night and N60 24hrs dwelling counts for the various M3R options.

2026 N70 day and evening dwelling counts

Option 1 is predicted to result in the fewest dwellings within the N70=5 contour (approximately 18,070) and the fewest newly-affected dwellings (approximately 5,040). This is due to the bias of arrivals onto the new runway and the subsequently narrower N70 contour south of the airport. It should be recognised that, although providing the fewest number of dwellings within the N70 contours, this operating strategy concentrates noise and is not predicted to regularly provide respite to affected areas (see Section C4.6.4).

Option 2 is predicted to result in the greatest number of dwellings within the N70=5 contour (approximately 25,790) and the greatest number of newly-affected dwellings (approximately 8,560). This increase in dwelling-count is a result of this strategy's distribution of noise impacts over a greater area. The greatest benefit of Option 2 is the predictable schedule of respite it affords to affected communities (see Section C4.6.4).

The areas most impacted by the application of Option 2 in M3R operations are north and south of the parallel runways. Communities that will experience new exposure to aircraft noise due to M3R are concentrated directly north and south of new runway 16R/34L (Sunshine North, St Albans, Keilor, Kealba, Bulla and Sunshine). Communities that will experience increased noise due to M3R are concentrated south of existing runway 16L/34R (Avondale Heights, Keilor East, and Keilor Park).

Table C4.8
Estimated number of affected dwellings – M3R 2026 N70 annual day and evening

Option	N70	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N70)										Estimated no. of newly affected dwellings		
		M3R	No Build	Increase					Decrease						Unchanged	
				5	10	20	50	100	5	10	20	50	100			
Option 1	None	-	-	-	-	-	-	-	-	472	913	538	826	1,485	-	-
	5	4,452	4,270	1,656	-	-	-	-	-	6	14	-	-	-	2,776	2,097
	10	5,249	3,753	1,789	2,177	-	-	-	-	48	25	-	-	-	1,210	1,744
	20	5,402	2,588	163	2,038	2,541	-	-	-	10	192	12	1	-	445	844
	50	1,576	2,284	11	107	687	289	-	-	27	405	49	-	1	-	239
	100	789	1,272	-	2	47	388	349	-	-	-	-	2	1	-	115
	200	600	35	-	-	1	5	575	-	-	-	8	10	1	-	-
Option 2	None	-	-	-	-	-	-	-	-	487	898	538	826	1,485	-	-
	5	6,973	4,270	3,637	-	-	-	-	-	105	37	-	-	-	3,194	2,811
	10	7,203	3,753	1,771	4,411	-	-	-	-	50	-	-	-	-	971	1,924
	20	7,529	2,588	210	1,928	5,249	-	-	-	-	-	-	1	-	141	3,055
	50	2,388	2,284	5	170	1,538	674	-	-	-	-	-	-	1	-	610
	100	1,657	1,272	-	-	407	393	845	-	-	-	-	-	12	-	157
	200	40	35	1	-	1	1	27	-	-	-	-	4	6	-	-
Mixed Mode	None	-	-	-	-	-	-	-	-	1,295	2,541	538	826	1,485	-	-
	5	5,212	4,270	3,094	-	-	-	-	-	7	77	-	-	1	2,033	2,632
	10	8,832	3,753	2,739	5,725	-	-	-	-	24	46	-	-	-	298	3,151
	20	4,169	2,588	142	831	3,126	-	-	-	21	-	-	-	-	49	1,591
	50	1,863	2,284	-	23	986	853	-	-	-	-	-	-	1	-	402
	100	2,176	1,272	-	6	284	833	1,049	-	-	-	-	1	3	-	9
	200	221	35	-	-	2	3	198	-	-	2	13	3	-	-	-

Source: SoundIN, 2020

With full mixed mode operations during the day and evening period, the number of dwellings predicted to experience an average of five or more N70 events is estimated to be 22,475. This represents an increase of approximately 8,270 compared to the No Build scenario, with approximately 7,785 dwellings being newly affected (i.e. experiencing less than one N70 event in the No Build scenario).

2026 N70 24hr dwelling counts

Option 1 is predicted to result in the fewest dwellings within the N70=5 contour (approximately 18,795) and the fewest newly affected dwellings (approximately 5,445). This is owing to the bias of arrivals onto the new runway and the subsequently narrower N70 contour south of the airport. It should be recognised that, although providing the fewest number of dwellings within the N70 contours, this operating strategy concentrates noise and is not predicted to regularly provide respite to affected areas (see Section C4.6.4).

Option 2 is predicted to result in the greatest number of dwellings within the N70=5 contour (approximately 26,360) and the greatest number of newly affected dwellings (approximately 8,545). The larger number of dwellings affected is a consequence of this strategy distributing noise. The greatest benefit of Option 2 is the predictable schedule of respite that is afforded to affected communities (see Section C4.6.4).

The areas most impacted by the application of Option 2 in M3R operations are north and south of the parallel runways. Communities that will experience new exposure to aircraft noise due to M3R are concentrated directly north and south of new runway 16R/34L (Sunshine North, St Albans, Keilor, Kealba, Bulla and Sunshine). Communities that will experience increased noise due to M3R are concentrated south of existing runway 16L/34R (Avondale Heights, Keilor East, and Keilor Park).

Table C4.9
Estimated number of affected dwellings – M3R 2026 N70 annual 24 hours

Option	N70	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N70)										Estimated no. of newly affected dwellings	
		M3R	No Build	Increase					Decrease						Unchanged
				5	10	20	50	100	5	10	20	50	100		
Option 1	None	-	-	-	-	-	-	-	443	848	589	384	1,964	-	-
	5	4,725	4,632	1,865	-	-	-	-	5	13	-	-	-	2,842	2,309
	10	5,263	4,356	1,744	2,072	-	-	-	47	27	-	-	-	1,373	1,832
	20	5,722	2,643	238	2,270	2,486	-	-	283	53	188	-	-	204	907
	50	1,626	2,377	38	143	610	285	-	-	27	475	1	1	46	246
	100	764	1,584	10	19	48	320	366	-	-	-	-	1	-	150
	200	692	40	-	-	1	7	663	-	-	1	15	5	-	-
Option 2	None	-	-	-	-	-	-	-	433	848	589	384	1,964	-	-
	5	6,519	4,632	3,134	-	-	-	-	123	40	-	-	-	3,222	2,631
	10	7,815	4,356	1,858	4,413	-	-	-	67	-	-	-	-	1,477	2,063
	20	7,696	2,643	334	2,017	5,176	-	-	21	-	-	1	-	147	2,980
	50	2,396	2,377	23	241	1,314	817	-	-	-	-	-	1	-	676
	100	1,778	1,584	-	11	552	431	777	-	-	-	-	7	-	194
	200	156	40	-	-	1	-	139	1	-	-	2	13	-	-

Source: SoundIN, 2020

2026 N60 night dwelling counts

Table C4.10 demonstrate that the number of dwellings impacted by night-time noise (described by N60 of five or more) is predicted to be reduced by M3R in 2026 (compared to no-build). The total number of dwellings within N60 equals five (or more) is predicted to reduce from approximately 44,595, to between approximately 19,800 and 29,045.

Option 1 is predicted to result in approximately 19,800 dwellings within the N60=5 contour, with approximately 6,150 dwellings newly affected (i.e. less than one N60 event in the No Build scenario). Option 1 is predicted to result in approximately 35,700 dwellings averaging at least five fewer events above 60 A-weighted decibels (N60) compared to the No Build scenario. The majority of the reduced impacts are in areas east of the airport (i.e. the existing east-west runway) and south of the existing north-south runway, which would be overflowed

far less often with the proposed NAPs using the new infrastructure. This operating strategy concentrates noise and is not predicted to regularly provide respite to affected areas (see Section C4.6.4).

Option 2 is predicted to result in approximately 29,045 dwellings being within the N60=5 contour, with approximately 3,815 dwellings being newly affected (i.e. less than one N60 event in the No Build scenario). Option 2 is predicted to result in approximately 26,270 dwellings averaging at least five fewer events above 60 A-weighted decibels (N60) compared to the No Build scenario. The majority of the reduced impacts are in areas east of the airport (i.e. the existing east-west runway), which would be overflowed far less often with the proposed NAPs utilising the new infrastructure. One of the greatest benefits of Option 2 is the predictable schedule of respite that is afforded to affected communities (see Section C4.6.4).

Table C4.10
Estimated number of affected dwellings – M3R 2026 N60 annual night

Option	N60	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N60)										Estimated no. of newly affected dwellings		
		M3R	No Build	Increase					Decrease						Unchanged	
				5	10	20	50	100	5	10	20	50	100			
Option 1	None	-	-	-	-	-	-	-	-	12,352	20,979	15	-	-	-	-
	5	6,974	16,149	2,891	-	-	-	-	1,270	708	-	-	-	2,105	2,855	
	10	11,222	28,381	1,279	7,606	-	-	-	348	3	-	-	-	1,986	3,170	
	20	1,603	62	205	322	1,036	-	-	4	23	-	-	-	13	124	
Option 2	None	-	-	-	-	-	-	-	9,653	12,079	15	-	-	-	-	
	5	16,154	16,149	5,247	-	-	-	-	4,308	5	-	-	-	6,594	3,073	
	10	12,658	28,381	2,468	1,820	-	-	-	181	1	-	-	-	8,188	740	
	20	232	62	107	71	14	-	-	3	24	-	-	-	13	-	

Source: SoundIN, 2020

2026 N60 24hr dwelling counts

Option 1 is predicted to result in approximately 189,775 dwellings within the N60=5 contour, with approximately 39,690 dwellings newly affected (i.e. less than one N60 event in the No Build scenario). Option 1 is predicted to result in approximately 134,650 dwellings averaging at least five fewer events above 60 A-weighted decibels (N60) compared to the No Build scenario. The majority of the reduced impacts are in areas east of the airport (i.e. the existing east-west runway) and south of the existing north-south runway, which would be overflowed far less often with the proposed NAPs using the new infrastructure. This operating strategy concentrates noise and is not predicted to regularly provide respite to affected areas (see Section C4.6.4).

Option 2 is predicted to result in approximately 191,480 dwellings being within the N60=5 contour, with approximately 17,815 dwellings being newly affected (i.e. less than one N60 event in the No Build scenario). Option 2 is predicted to result in approximately 105,830 dwellings averaging at least five fewer events above 60 A-weighted decibels (N60) compared to the No Build scenario. The majority of the reduced impacts are in areas east of the airport (i.e. the existing east-west runway), which would be overflowed far less often with the proposed NAPs utilising the new infrastructure. One of the greatest benefits of Option 2 is the predictable schedule of respite that is afforded to affected communities (see Section C4.6.4).

Table C4.11
Estimated number of affected dwellings – M3R 2026 N60 annual 24 hours

Option	N60	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N60)										Estimated no. of newly affected dwellings		
		M3R	No Build	Increase					Decrease						Unchanged	
				5	10	20	50	100	5	10	20	50	100			
Option 1	None	-	-	-	-	-	-	-	-	44,655	32,749	22,262	11,772	15,345	-	-
	5	59,946	78,614	36,424	-	-	-	-	-	2,053	384	463	11	5	20,606	33,835
	10	23,734	70,499	6,690	10,920	-	-	-	-	453	725	157	32	2	4,755	4,970
	20	54,033	48,038	3,513	10,868	35,860	-	-	-	324	199	132	36	5	3,096	798
	50	32,198	24,849	1,350	2,292	16,785	8,282	-	-	407	851	1	-	5	2,225	84
	100	11,188	19,179	336	662	1,076	2,391	4,671	-	862	729	-	-	1	460	-
Option 2	None	-	-	-	-	-	-	-	-	39,475	22,546	9,140	11,602	15,283	-	-
	5	33,896	78,614	8,563	-	-	-	-	-	2,104	1,196	81	51	15	21,886	12,486
	10	41,055	70,499	10,720	16,774	-	-	-	-	1,981	1,076	117	110	27	10,250	3,481
	20	61,170	48,038	5,504	18,673	25,488	-	-	-	820	70	65	8	30	10,512	1,782
	50	30,944	24,849	251	1,298	16,619	12,527	-	-	-	-	-	1	4	244	66
	100	21,080	19,179	18	13	5,599	7,605	7,843	-	-	-	-	-	1	1	-
200	3,336	113	-	-	5	356	2,948	-	-	4	4	17	2	-	-	

Source: SoundIN, 2020

C4.10.2**Estimated number of affected dwellings for M3R 2046**

This section presents the estimated number of dwellings affected by the M3R 2046 scenarios. Table C4.12 through Table C4.15 present the N70 day and evening, N70 24 hours, N60 night and N60 24 hours for the various M3R options. Estimated dwellings within the composite ANEC (i.e. all three operating strategies) are presented in Table C4.16.

The data generally reflect similar outcomes to 2026. Many estimates of affected dwellings are predicted to reduce slightly between 2026 and 2046 due to the forecast renewal of the current fleet with quieter new-generation aircraft. In some circumstances, this

reduction at the source is offset by increased numbers of operations; in others the reduction is realised in the extent of the significant N-above contours (see Section C4.6.2 for a discussion of the N-above contours).

Compared to 2026 when demand permits greater use of the segregated modes, predictions for the three scenarios in 2046 converge as the increased use of mixed mode operations greatly influences the contours.

The estimates of newly affected dwellings are presented for 2046. However, it is noted these have diminished value because the of the slow progression towards 2046 noise exposure from 2026. Existing residences would not experience a distinct change in noise exposure in a relatively short period of time, as expected when the new infrastructure is opened in 2026.

Table C4.12
Estimated number of affected dwellings – M3R 2046 N70 annual day and evening

Option	N70	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N70)										Estimated no. of newly affected dwellings		
		M3R	No Build	Increase					Decrease						Unchanged	
				5	10	20	50	100	5	10	20	50	100			
Option 1	None	-	-	-	-	-	-	-	-	2,287	944	621	563	1,189	-	-
	5	4,949	2,893	3,019	-	-	-	-	-	96	16	-	-	-	1,818	3,674
	10	3,460	2,010	686	2,423	-	-	-	-	9	-	1	-	-	341	2,679
	20	2,364	2,038	203	519	1,575	-	-	-	-	-	-	-	-	67	1,335
	50	1,108	1,484	21	129	487	469	-	-	-	-	1	-	1	-	336
	100	1,207	945	-	-	202	603	395	-	-	-	-	-	7	-	302
	200	783	38	-	2	13	34	734	-	-	-	-	-	-	-	245
Option 2	None	-	-	-	-	-	-	-	-	2,103	827	621	563	1,189	-	-
	5	5,166	2,893	3,021	-	-	-	-	-	50	7	1	-	-	2,087	3,764
	10	4,288	2,010	913	2,860	-	-	-	-	18	-	-	-	-	497	3,140
	20	2,771	2,038	193	521	2,009	-	-	-	-	-	-	-	-	48	1,701
	50	1,244	1,484	1	158	349	734	-	-	-	-	1	-	1	-	505
	100	1,448	945	-	-	130	425	886	-	-	-	-	-	7	-	341
	200	753	38	1	-	-	51	687	-	1	-	-	-	-	13	226
Mixed Mode	None	-	-	-	-	-	-	-	-	2,348	1,224	622	563	1,189	-	-
	5	4,798	2,893	2,584	-	-	-	-	-	8	3	-	-	-	2,203	3,208
	10	3,454	2,010	608	2,526	-	-	-	-	-	-	-	-	-	320	2,795
	20	2,696	2,038	254	397	1,957	-	-	-	-	-	-	-	-	88	1,723
	50	1,140	1,484	-	246	261	630	-	-	-	-	1	-	1	1	464
	100	1,383	945	-	6	160	348	862	-	-	-	-	-	7	-	356
	200	840	38	-	6	8	44	781	-	-	-	-	-	-	1	204

Source: SoundIN, 2020

2046 N70 day and evening dwelling counts

Option 1 is predicted to result in the fewest dwellings within the N70=5 contour (approximately 13,870) and the fewest newly affected dwellings (approximately 8,570).

Option 2 is predicted to result in the greatest number of dwellings within the N70=5 (approximately 15,670) and the greatest number of newly affected dwellings (approximately 9,680). The larger number of dwellings affected is a consequence of this strategy which distributes noise. The greatest benefit of Option 2 is the predictable schedule of respite it affords affected communities (see Section C4.6.4).

With full mixed mode operations during the day and evening period, the number of dwellings predicted to experience an average of five or more N70 events is estimated to be 14,315. This represents an increase of approximately 4,905 compared to the No Build scenario, with approximately 8,750 dwellings newly affected (i.e. less than one N70 event in the No Build scenario).

The areas impacted are similar to those described in Section C4.10.1 – north and south of the parallel runways.

2046 N70 24hrs dwelling counts

Option 1 is predicted to result in the fewest dwellings within the N70=5 contour (approximately 15,615) and the fewest newly affected dwellings (approximately 9,135).

Option 2 is predicted to result in the greatest number of dwellings within the N70=5 contour (approximately 18,105) and the greatest number of newly affected dwellings (approximately 9,905). The larger number of dwellings affected is a consequence of this strategy distributing noise. The greatest benefit of Option 2 is the predictable schedule of respite it affords affected communities (see Section C4.6.4).

Table C4.13
Estimated number of affected dwellings – M3R 2046 N70 annual 24hrs

Option	N70	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N70)										Estimated no. of newly affected dwellings		
		M3R	No Build	Increase					Decrease						Unchanged	
				5	10	20	50	100	5	10	20	50	100			
Option 1	None	-	-	-	-	-	-	-	-	2,490	891	359	913	1,189	-	-
	5	6,171	4,417	3,725	-	-	-	-	-	68	28	-	-	-	2,350	4,327
	10	3,730	2,336	470	2,566	-	-	-	-	21	-	1	-	-	672	2,586
	20	2,536	1,993	368	461	1,597	-	-	-	-	-	-	-	-	110	1,371
	50	1,124	1,875	71	98	518	435	-	-	-	-	1	-	1	-	343
	100	1,187	1,129	-	-	188	691	303	-	-	-	-	-	5	-	296
	200	864	40	2	9	2	51	796	-	-	-	-	-	2	2	212
Option 2	None	-	-	-	-	-	-	-	-	2,306	740	359	913	1,189	-	-
	5	6,217	4,417	2,891	-	-	-	-	-	52	66	-	-	-	3,208	3,665
	10	5,167	2,336	1,013	3,101	-	-	-	-	19	-	-	1	-	1,033	3,342
	20	3,077	1,993	282	589	2,106	-	-	-	-	-	-	-	-	100	1,827
	50	1,303	1,875	23	154	413	711	-	-	-	-	1	-	1	-	540
	100	1,448	1,129	-	-	157	479	805	-	-	-	-	-	7	-	345
	200	892	40	-	-	-	64	813	-	9	6	-	-	-	-	186

Source: SoundIN, 2020

2046 N60 night dwelling counts

Table C4.14 demonstrates that the number of dwellings impacted by night-time noise, described by N60 of five or more is predicted to be substantially reduced by M3R in 2026. The total number of dwellings within N60 equals five or more is predicted to reduce from approximately 47,630, to between 23,300 and 33,815.

Option 1 is predicted to result in approximately 23,300 dwellings being within the N60=5 contour, with approximately 5,045 dwellings newly affected (i.e. less than one N60 event in the No Build scenario). Option 1 is predicted to result in approximately 39,310 dwellings averaging at least five fewer events above 60 A-weighted decibels (N60) compared to the No Build scenario. The majority of the reduced impacts are in areas east of the airport (i.e. the existing east-west runway) and south of the existing north-south runway, which would be overflown far less with the proposed NAPs utilising the new infrastructure. It should be noted that the Option 1 operating strategy concentrates noise and is not predicted to regularly provide respite to affected areas (see Section C4.6.4).

Option 2 is predicted to result in approximately 33,815 dwellings being within the N60=5 contour, with approximately 4,605 dwellings newly affected (i.e. less than one N60 event in the No Build scenario). Option 2 is predicted to result in approximately 27,840 dwellings averaging at least five fewer events above 60 A-weighted decibels (N60) compared to the No Build scenario. The majority of the reduced impacts are in areas east of the airport (i.e. the existing east-west runway) which would be overflown far less often with the proposed NAPs utilising M3R. One of the greatest benefits of Option 2 is the predictable schedule of respite it affords affected communities (see Section C4.6.4).

Table C4.14
Estimated number of affected dwellings – M3R 2046 N60 annual night

Option	N60	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N60)										Estimated no. of newly affected dwellings		
		M3R	No Build	Increase					Decrease						Unchanged	
				5	10	20	50	100	5	10	20	50	100			
Option 1	None	-	-	-	-	-	-	-	-	14,775	21,168	15	-	-	-	-
	5	9,189	17,932	3,557	-	-	-	-	-	197	2,134	4	-	-	3,297	2,557
	10	4,059	29,323	347	2,431	-	-	-	-	578	394	1	-	-	308	928
	20	10,027	369	488	1,489	7,535	-	-	-	33	7	-	-	-	475	1,560
	50	23	4	8	4	9	1	-	-	1	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Option 2	None	-	-	-	-	-	-	-	-	13,059	13,042	15	-	-	-	-
	5	9,692	17,932	3,086	-	-	-	-	-	1,046	1	4	-	-	5,555	2,858
	10	19,770	29,323	555	8,253	-	-	-	-	642	2	1	-	-	10,317	1,747
	20	4,340	369	1,592	1,035	123	-	-	-	8	15	1	-	-	1,566	-
	50	13	4	7	3	2	-	-	-	-	-	-	-	-	1	-
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: SoundIN, 2020

2046 N60 24hr dwelling counts

Option 1 is predicted to result in approximately 126,690 dwellings within the N60=5 contour, with approximately 17,560 dwellings newly affected (i.e. less than one N60 event in the No Build scenario). Option 1 is predicted to result in approximately 113,080 dwellings averaging at least five fewer events above 60 A-weighted decibels (N60) compared to the No Build scenario. The majority of the reduced impacts are in areas east of the airport (i.e. the existing east-west runway) and south of the existing north-south runway, which would be overflowed far less with the proposed NAPs using the new infrastructure. This operating strategy concentrates noise and is not predicted to regularly provide respite to affected areas (see Section C4.6.4).

Option 2 is predicted to result in approximately 140,045 dwellings being within the N60=5 contour, with approximately 17,715 dwellings being newly affected (i.e. less than one N60 event in the No Build scenario). Option 2 is predicted to result in approximately 104,475 dwellings averaging at least five fewer events above 60 A-weighted decibels (N60) compared to the No Build scenario. The majority of the reduced impacts are in areas east of the airport (i.e. the existing east-west runway), which would be overflowed far less with the proposed NAPs utilising M3R. One of the greatest benefits of Option 2 is the predictable schedule of respite it affords affected communities (see Section C4.6.4).

Table C4.15
Estimated number of affected dwellings – M3R 2046 N60 annual 24 hours

Option	N60	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R N60)										Estimated no. of newly affected dwellings		
		M3R	No Build	Increase					Decrease						Unchanged	
				5	10	20	50	100	5	10	20	50	100			
Option 1	None	-	-	-	-	-	-	-	-	49,815	23,748	12,276	11,210	13,562	-	-
	5	18,854	71,540	5,671	-	-	-	-	-	816	511	197	8	3	11,648	7,154
	10	21,831	55,730	8,514	6,840	-	-	-	-	185	375	18	7	12	5,880	4,299
	20	35,478	32,428	4,565	13,187	16,826	-	-	-	200	74	1	2	53	570	4,363
	50	20,589	22,033	29	216	8,081	12,256	-	-	-	-	1	-	6	-	1,582
	100	9,496	17,289	-	-	106	3,930	5,458	-	-	-	-	-	1	1	162
	200	20,690	114	-	4	6	160	20,520	-	-	-	-	-	-	-	-
Option 2	None	-	-	-	-	-	-	-	-	44,614	17,296	10,141	11,209	13,555	-	-
	5	23,825	71,540	6,989	-	-	-	-	-	2,466	766	97	4	8	13,495	7,518
	10	27,568	55,730	9,973	4,969	-	-	-	-	1,973	2,070	4	8	13	8,558	3,738
	20	32,277	32,428	3,911	13,549	13,859	-	-	-	111	68	4	3	50	722	4,329
	50	26,022	22,033	7	109	9,986	15,892	-	-	-	1	1	-	10	16	2,013
	100	10,576	17,289	-	-	100	4,548	5,927	-	-	-	-	-	1	-	114
	200	19,777	114	-	-	7	264	19,502	1	2	-	-	-	-	1	-

Source: SoundIN, 2020

Table C4.16
Estimated number of affected dwellings – M3R 2046 ANEC

ANEC	Estimated no. of dwellings		Change from No Build estimated no. of dwellings (rows represent M3R ANEC)									
	M3R	No Build	Increase				Decrease				Unchanged	
			< 20	20	25	30	20	25	30	35		
<20	-	-	-	-	-	-	-	1330	15	-	-	-
20	4,477	1418	4,421	-	-	-	-	-	7	-	-	49
25	708	30	664	39	-	-	-	-	-	-	-	5
30	27	8	16	-	3	-	-	-	-	-	-	8

Source: SoundIN, 2020

2046 ANEC dwelling counts

Table C4.16 presents the estimated dwellings within the composite 2046 ANEC with M3R, comprising the three operating strategies discussed in the MDP. Approximately 5,212 dwellings are predicted to be within the ANEC 20 contour with M3R, compared to approximately 1,456 for the No Build scenario. The majority of dwellings within the M3R ANEC 20 are south of the airport.

This result can be expected because most of the area underneath the No Build ANEC 20 has been subject to planning controls for decades, dating back to the introduction of the ANEF system. Notably the M3R ANEC is predicted to have similar extents to the Master Plan 2018 ANEF in the area south of the airport (see Chapter B2: Land Use and Planning for details of current and historic land-use planning around the airport).

C4.11 CONCLUSION

When combined, Chapter C3: Aircraft Noise Modelling Methodology and Chapter C4: Aircraft Noise and Vibration present the methodology and results of the study into aircraft noise for M3R.

Chapter C3: Aircraft Noise Modelling Methodology explains the methodology for the prediction, assessment and communication of aircraft noise that represents industry best practice.

Flight data was analysed to determine existing aircraft-noise exposure, flight tracks, statistical geometric dispersion about those tracks, and Air Traffic Control behaviour. This analysis was applied to forecast schedules for three assessment years, together with 10 years of historic meteorological data to predict, to the extent possible, future operations and their associated aircraft noise exposure.

Predictions were included for three scenarios: the No Build option (the airport continues to operate with the existing infrastructure); the proposed M3R infrastructure with continuation of existing NAPs; and the proposed M3R infrastructure with a proposed NAP (applying improvements facilitated by the new infrastructure and systems).

The noise model used in the assessment was validated extensively by using historic measured noise levels for almost 167,641 flights in 2019 (calibration was necessary for some operations and undertaken).

A suite of aircraft noise metrics and supplementary information is included in **Chapter C3: Aircraft Noise Modelling Methodology** and **Chapter C4: Aircraft Noise and Vibration** that presents the calculated and predicted aircraft noise levels. It includes ANEC/ANEF, N-above, typical busy day N-above, threshold respite, single-event maximum noise levels and flight path diagrams.

With this information, stakeholders are able to consider land-use planning implications, the level and occurrence of aircraft noise events, the potential daily variation in the number of events, and the proportion of days with little or no significant aircraft noise in an area.

Aircraft noise exposure is predicted to increase north and south of the airport, corresponding with use of the parallel north-south runways. By 2026, upon the opening of the new and extended runways, between approximately 5,040 and 8,560 dwellings are predicted to be newly affected by aircraft noise (as described by N70 day and evening of five or more). Importantly however, the number of dwellings exposed to night-time noise (described by N60 of five or more) is predicted to significantly decrease in 2026 with operation of M3R – by between approximately 15,550 and 24,795 dwellings.

Through the MDP process, many measures have been identified to mitigate and manage aircraft noise impacts (see **Section C4.5**).

Figure C4.92 presents a summary of the noise exposure predicted in this report. This figure is a composite of the operating scenarios available. They include mixed mode, segregated mode Option 1 and segregated mode Option 2. It therefore presents a summary of the noise exposure predictions upon which approval for this MDP is sought. **Figure C4.89** through to **Figure C4.91** separately show each operating scenario to help the reader to draw comparisons.

The M3R MDP has identified several options for how the airport might be operated and presented the predicted impacts of each of the options. The final operating plan and airspace design will be the subject of further consultation before the opening of the runway.

Further discussion of aircraft-noise impacts is included in **Chapter D4: Social Impact**.

REFERENCES

- Airservices Australia 2013, *Airservices Commitment to Aircraft Noise Management*, accessed March 2017, http://www.airservicesaustralia.com/wp-content/uploads/Aircraft_Noise_Management_WEB.pdf
- Airservices Australia 2020, *Flight Path Design Principles*, <https://engage.airservicesaustralia.com/flight-path-design-principles>
- APAM 2013, *Melbourne Airport Master Plan*, Melbourne: Australia Pacific Airports (Melbourne).
- APAM 2018, *Melbourne Airport Master Plan*, Melbourne: Australia Pacific Airports (Melbourne).

Figure C4.89
Summary of outer noise envelopes for N-above and ANEC – M3R Option 1 2046

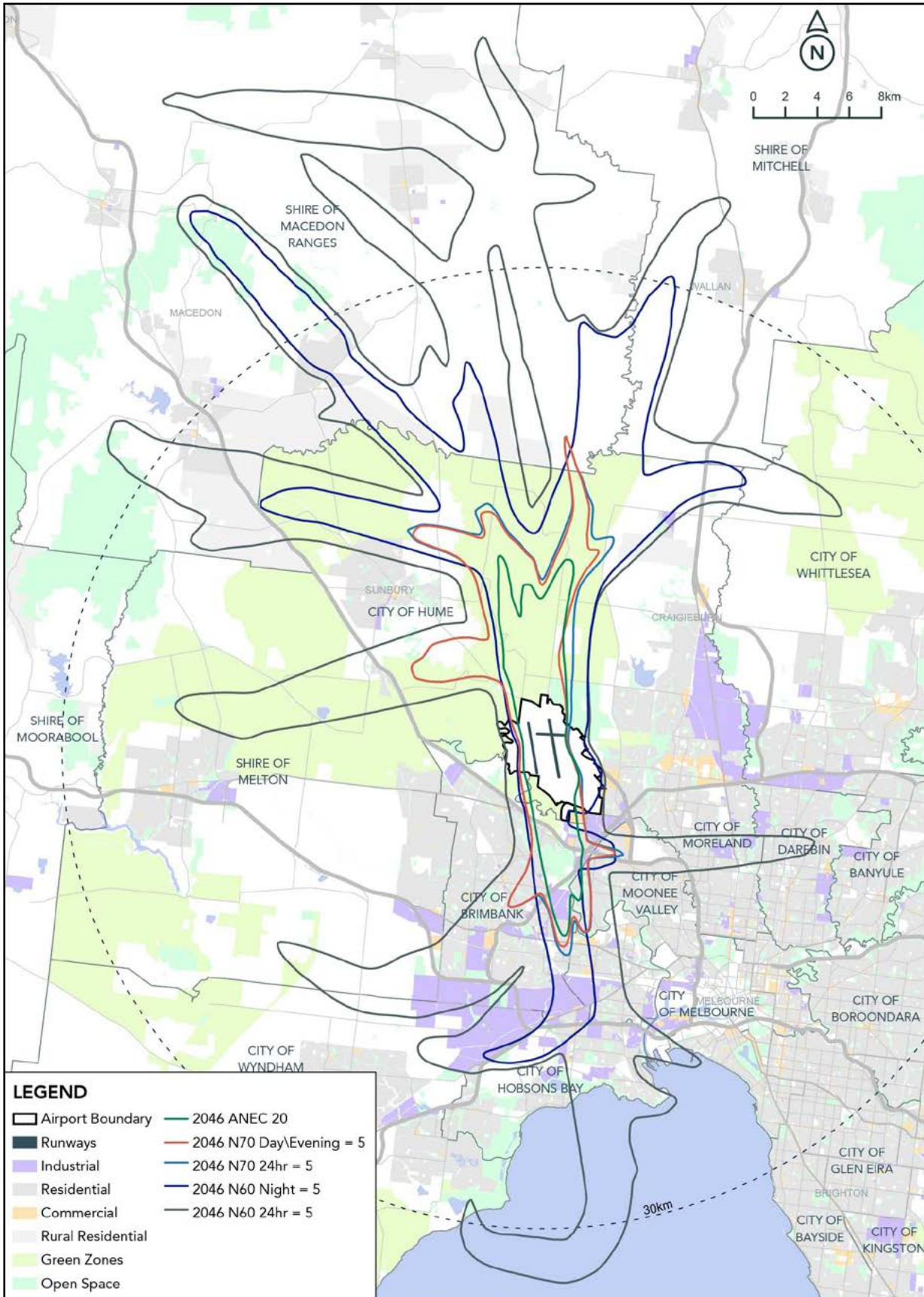
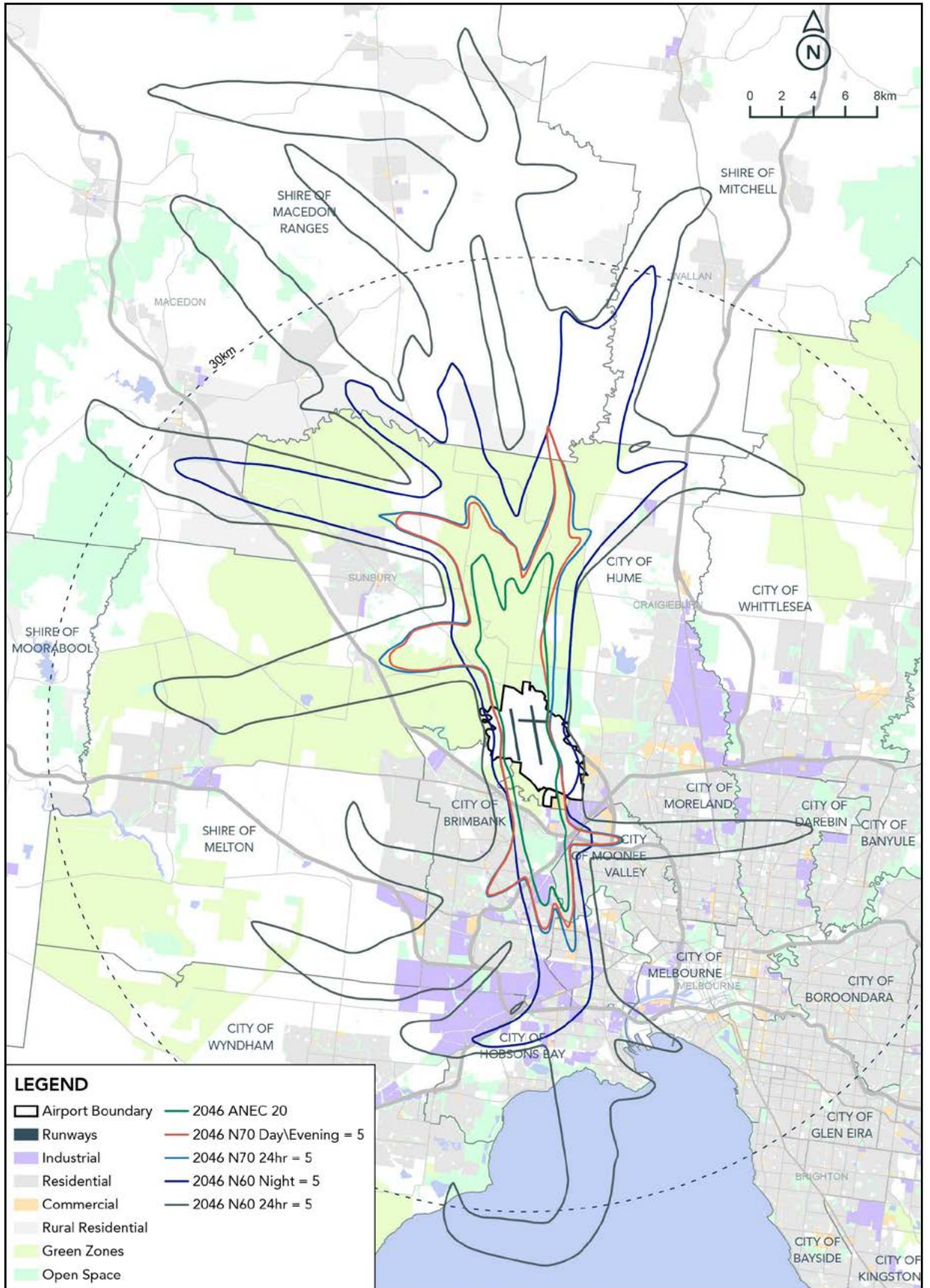


Figure C4.90
Summary of outer noise envelopes for N-above and ANEC – M3R Option 2 2046



Source: SoundIN, 2020

Figure C4.91
Summary of outer noise envelopes for N-above and ANEC – M3R Mixed Mode 2046

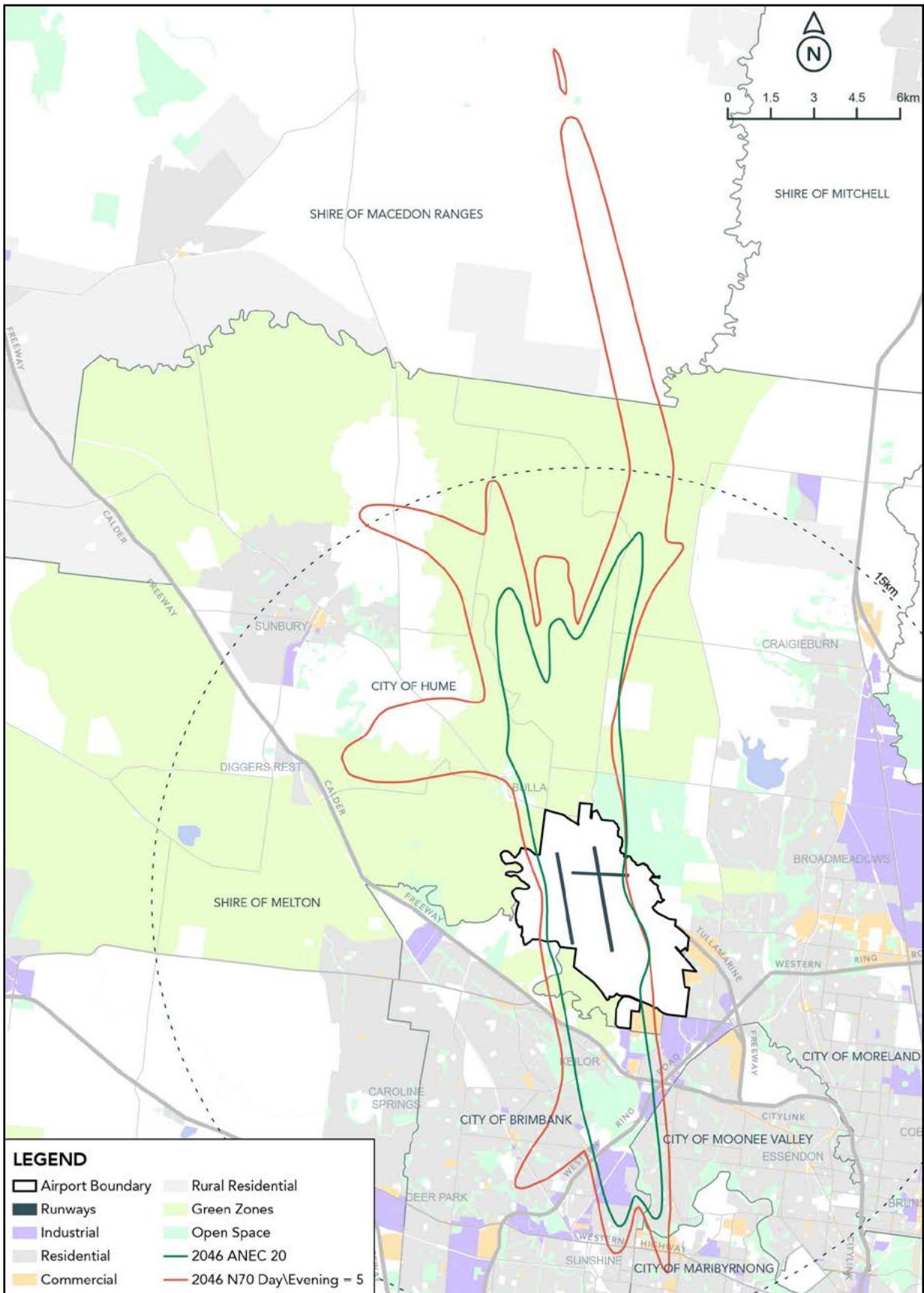
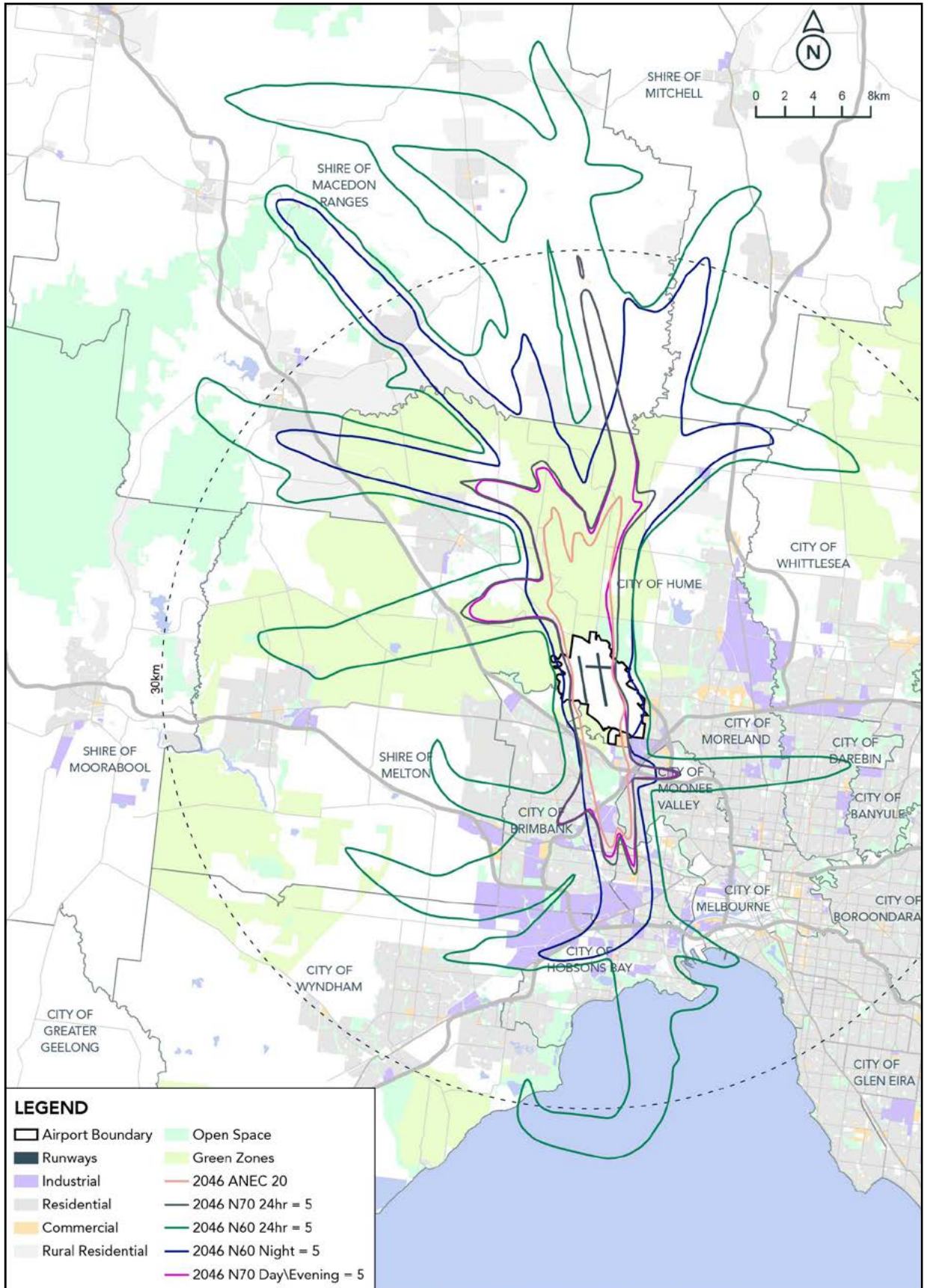


Figure C4.92
Summary of outer noise envelopes for N-above and ANEC – M3R Composite 2046



Source: SoundIN, 2020

APPENDIX C4.A ESTIMATED NUMBER OF AFFECTED DWELLINGS BY SUBURB

The section presents the estimated number of dwellings within noise contours for each suburb. Refer to Section C4.10 for a description of the tables and for commentary on the overall results.

Please note that if a suburb is not listed then no dwellings are predicted to be within the minimum contour (N-above equals 5, ANEC 20) for both the No Build and M3R scenarios. *Eles experuptatem a quat ut eossus et omnihitatem quid qui re latusandunto et il ium autem sundero cusament idis illatus descient minci blaborro es magnam raestibusam quis auta di*

C4.A.1

Estimated number of dwellings by suburb – M3R 2026 N70 Annual Day and Evening

Suburb	Option	Estimated no. of dwellings			
		N70	M3R	No Build	
Airport West	Option 1	5	309	587	
		10	695	281	
		20	901		
	Option 2	5	184	587	
		10	407	281	
		20	1,413		
		50	37		
	Mixed Mode	None			
		5		587	
		10		281	
	Albion	Option 1	5	34	
	Ardeer	Option 1	5	317	
Attwood	Option 1	None			
		5		60	
		10		107	
		20		115	
		50		111	
		100		16	
	Option 2	None			
		5		60	
		10		107	
		20		115	
		50		111	
		100		16	
	Mixed Mode	None			
		5		60	
		10		107	
20			115		
50			111		
100			16		

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Avondale Heights	Option 1	5	398	607	
		10	686	710	
		20	2,199	598	
		50		148	
	Option 2	5	379	607	
		10	692	710	
		20	1,242	598	
		50	694	148	
	Mixed Mode	5	393	607	
		10	483	710	
		20	1,353	598	
		50	664	148	
		100	505		
	Braybrook	Option 1	5	768	233
			10	135	
Option 2		5	803	233	
		10	174		
Mixed Mode		5	667	233	
		10	690		
Broadmeadows	Option 1	None			
		5		55	
		10		35	
		20		21	
		50		40	
		100		199	
	Option 2	None			
		5		55	
		10		35	
		20		21	
		50		40	
		100		199	
	Mixed Mode	None			
		5		55	
		10		35	
		20		21	
		50		40	
			100		199

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Bulla	Option 1	None		
		5	19	1
		10	19	3
		20	15	9
		50	8	15
		100	12	11
		200	31	15
	Option 2	None		
		5	17	1
		10	16	3
		20	15	9
		50	43	15
		100	71	11
		200	34	15
	Mixed Mode	None		
		5	14	1
		10	21	3
		20	37	9
		50	76	15
		100	19	11
		200	24	15
Cairnlea	Option 2	5	938	
	Mixed Mode	5	582	
	Mixed Mode	10	245	
Campbellfield	Option 1	None		
		5		99
		10		36
		20		110
		50		275
		100		59
	Option 2	None		
		5		99
		10		36
		20		110
		50		275
		100		59
	Mixed Mode	None		
		5		99
		10		36
		20		110
		50		275
		100		59

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Chintin	Mixed Mode	5	4		
Clarkefield	Mixed Mode	5	1		
Coolaroo	Option 1	None			
		5		41	
		10		56	
		20		154	
		50		226	
	Option 2	None			
		5		41	
		10		56	
		20		154	
		50		226	
	Mixed Mode	None			
		5		41	
		10		56	
		20		154	
		50		226	
	Dallas	Option 1	None		
			5		83
			10		184
			20		273
			50		297
Option 2		None			
		5		83	
		10		184	
		20		273	
		50		297	
Mixed Mode		None			
		5		83	
		10		184	
		20		273	
		50		297	
Darraweit Guim		Mixed Mode	5	3	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)												Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)								
5	10	20	50	100	5	10	20	50	100				
4												4	
1												1	
					62	41	161	60	10				
					62	41	161	60	10				
					62	41	161	60	10				
					21	336	77	382	843				
					21	336	77	382	843				
					21	336	77	382	843				
2											1	3	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Diggers Rest	Option 1	None		
		5		5
		10		1
		20		5
		50		14
		100		12
		200		9
	Option 2	None		
		5	355	5
		10	662	1
		20		5
		50		14
		100		12
		200		9
	Mixed Mode	None		
		5	256	5
		10	824	1
		20	1	5
		50		14
		100		12
		200		9
Greenvale	Option 1	None		
		5		19
		10		31
		20		62
		50		36
		100		1
	Option 2	None		
		5		19
		10		31
		20		62
		50		36
	Mixed Mode	None		
		5		19
		10		31
20			62	
		50	36	
		100	1	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Kealba	Option 1	5	112		
		10	87		
		20	72		
		50	58		
		100	17		
	Option 2	5	40		
		10	146		
		20	915		
		50	128		
	Mixed Mode	5	55		
		10	274		
		20	824		
		50	76		
	Keilor	Option 1	5	91	117
			10	87	222
20			190	222	
50			164	1	
100			352		
200			557		
Option 2		5	97	117	
		10	102	222	
		20	433	222	
		50	386	1	
		100	885		
		200	1		
Mixed Mode		5	135	117	
		10	186	222	
		20	442	222	
	50	367	1		
	100	732			
Keilor Downs	Option 2	5	42		
		10	3		
	Mixed Mode	5	40		

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
87											25	112
16	71											87
	7	65										72
			58									34
				17								7
40												40
5	141											146
		915										915
		5	123									94
55												55
1	273											274
	3	821										824
			76									42
53											38	91
11	72										4	87
8	22	160										190
		2	162									162
			41	311								108
			5	552								
96											1	97
	102											102
		433										433
		35	351									369
		4	106	775								100
				1								
135												135
	186											186
	5	437										442
		16	351									287
		6	157	569								9
42												42
	3											3
40												40

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Keilor East	Option 1	None			
		5	266	413	
		10	441	856	
		20	1,085	379	
		50	942	696	
		100	3		
	Option 2	None			
		5	348	413	
		10	491	856	
		20	734	379	
		50	632	696	
		100	370		
	Mixed Mode	None			
		5	306	413	
		10	353	856	
		20	602	379	
		50	330	696	
		100	741		
	Keilor North	Option 1	None		
			50		1
			100		1
Option 2		None			
		5	1		
		50		1	
Mixed Mode		None			
		50		1	
		100		1	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					25	142						
24					2	14					226	189
81	66				48	25					221	201
70	277	614			5	22					97	
8	79	374			27	405	49					
			3									
					41	127						
15					5	37					291	218
248	8				50						185	12
29	395	265									45	
	103	529										
		367	3									
					22	498						
24						77					205	206
174	16				24	46					93	229
26	323	193			21						39	25
	5	324	1									
		105	301	335								
				150								
								1	1			
								1	1			
1												1
								1	1			

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Keilor Park	Option 1	5	18	114	
		10	57	173	
		20	234	392	
		50	380	200	
		100	396	33	
	Option 2	5		114	
		10	52	173	
		20	267	392	
		50	451	200	
		100	315	33	
	Mixed Mode	5	58	114	
		10	114	173	
		20	314	392	
		50	319	200	
		100	168	33	
		200	37		
	Meadow Heights	Option 1	None		
			5		68
			10		86
			20		155
50				138	
Option 2		None			
		5		68	
		10		86	
		20		155	
		50		138	
Mixed Mode		None			
		5		68	
		10		86	
		20		155	
		50		138	
Melbourne Airport		Option 1	100		1
			200	1	
		Option 2	100		1
			200	1	
		Mixed Mode	100		1
	200		1		

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Mickleham	Option 1	5	10	6
		10	21	2
		20	17	
		50	17	
	Option 2	5	19	6
		10	11	2
		20	26	
	Mixed Mode	5	6	6
		10	21	2
		20	14	
		50	25	
	Monegeetta	Option 1	None	
Option 2		None		
Niddrie	Option 1	None		
		5	52	146
		10	59	121
	Option 2	20	3	
		None		
		5	114	146
	Option 2	10	65	121
		20	34	
		None		
	Mixed Mode	None		
		5		146
		10		121
Oaklands Junction	Option 1	None		
		5	1	16
		10		8
		20		1
		50	4	8
		100	9	2
		200	11	11
	Option 2	None		
		5		16
		10		8
		20	3	1
		50	6	8
		100	11	2
		200	4	11
	Mixed Mode	None		
		5	4	16
		10	2	8
		20	1	1
		50	3	8
		100	11	2
		200	9	11

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Plumpton	Option 1	None		
		5		1
		50		2
	Option 2	None		
		5		1
		50		2
	Mixed Mode	None		
		5		1
		50		2
Romsey	Mixed Mode	5	3	
St Albans	Option 1	5	808	535
		10	988	
		20	43	
	Option 2	5	1,664	535
		10	3,495	
		20	2,356	
	Mixed Mode	None		
		5	1,663	535
		10	4,881	
		20	126	
Sunbury	Option 1	5	120	
		10	5	
	Option 2	5	126	
		10	3	
	Mixed Mode	5	10	
		10	2	
Sunshine	Option 1	5	421	
	Mixed Mode	5	146	
Sunshine North	Option 1	None		
		5	704	1,037
		10	1,967	807
		20	638	
	Option 2	None		
		5	1,843	1,037
		10	881	807
		20	80	
	Mixed Mode	None		
		5	860	1,037
		10	731	807
		20	437	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
						1			2			
						1			2			
						1			2			
2											1	3
270											538	
408	565										15	
	9	34										
1,328											336	388
769	2,668										58	469
	158	2,198										888
						29						
950											713	410
1,095	3,785										1	950
	13	113										114
112											8	78
1	4											
117											9	82
1	2											
8											2	3
1	1											1
344											77	421
141											5	146
						5						
322						3					379	167
606	853										508	443
6	300	332										
						155						
663						59					1,121	489
277	295										309	1
3	74	3										
						736	606					
519						7					334	391
184	505										42	111
4	103	330										

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Westmeadows	Option 1	None		
		5		27
		10		34
		20		92
		50		75
		100		31
	Option 2	None		
		5		27
		10		34
		20		92
		50		75
		100		31
	Mixed Mode	None		
		5		27
		10		34
		20		92
		50		75
		100		31
Wildwood	Option 1	5	3	
		10	1	
		20	5	
		50	3	1
	Option 2	5	2	
		10	3	
		20	11	
		50	11	1
	Mixed Mode	5	5	
		10	4	
		20	18	
		50	3	1
Yuroke	Option 1	5	1	
		10	1	
	Option 2	5	1	
		10	1	

C4.A.2**Estimated number of dwellings by suburb – M3R 2026 N70 annual 24hrs**

Suburb	Option	N70	Estimated no. of dwellings	
			M3R	No Build
Airport West	Option 1	5	299	501
		10	631	412
		20	999	
	Option 2	5	176	501
		10	380	412
		20	1,438	
		50	65	
	Albion	Option 1	5	45
Ardeer	Option 1	5	461	
	Option 2	5	23	
Attwood	Option 1	None		
		5		62
		10		101
		20		115
		50		117
	Option 2	100		20
		None		
		5		62
		10		101
		20		115
		50		117
Avondale Heights	Option 1	5	399	336
		10	676	896
		20	2,216	697
		50		337
	Option 2	5	377	336
		10	638	896
		20	1,247	697
		50	778	337
		100	2	
Braybrook	Option 1	5	869	969
		10	152	156
	Option 2	5	719	969
		10	400	156

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Broadmeadows	Option 1	None			
		5		53	
		10		39	
		20		21	
		50		30	
		100		212	
	Option 2	None			
		5		53	
		10		39	
		20		21	
		50		30	
		100		212	
	Bulla	Option 1	None		
			5	19	1
			10	17	2
20			18	10	
50			6	14	
100			13	7	
Option 2		None			
		5	17	1	
		10	14	2	
		20	17	10	
		50	33	14	
		100	74	7	
Cairnlea		Option 2	5	982	
			10	2	
Campbellfield		Option 1	None		
	5			107	
	10			33	
	20			107	
	50			219	
	100			123	
	Option 2	None			
		5		107	
		10		33	
		20		107	
		50		219	
		100		123	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Coolaroo	Option 1	None		
		5		41
		10		53
		20		148
		50		184
		100		127
	Option 2	None		
		5		41
		10		53
		20		148
		50		184
		100		127
Dallas	Option 1	None		
		5		93
		10		159
		20		281
		50		271
		100		850
	Option 2	None		
		5		93
		10		159
		20		281
		50		271
		100		850
Diggers Rest	Option 1	None		
		5		6
		10		3
		20		5
		50		14
		100		12
	Option 2	200		9
		None		
		5	279	6
		10	773	3
		20		5
		50		14
100		12		
200		9		

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)			
			M3R (cont.)	No Build (cont.)		
Greenvale	Option 1	None				
		5		18		
		10		30		
		20		61		
		50		41		
		100		1		
	Option 2	None				
		5		18		
		10		30		
		20		61		
		50		41		
		100		1		
		Kealba	Option 1	5	104	
				10	102	
20	79					
50	56					
100	27					
Option 2	5		37			
	10		143			
	20		879			
	50		170			
Keilor	Option 1	5	95	113		
		10	86	220		
		20	182	235		
		50	161	1		
		100	296			
		200	645			
	Option 2	5	98	113		
		10	101	220		
		20	409	235		
		50	382	1		
		100	807			
		200	109			
Keilor Downs	Option 2	5	46			
		10	4			

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Keilor East	Option 1	None			
		5	255	384	
		10	445	865	
		20	1,037	342	
		50	1,005	732	
	Option 2	100	3	71	
		None			
		5	353	384	
		10	467	865	
		20	727	342	
	Option 2	50	522	732	
		100	524	71	
		Option 1	None		
			50		1
100				1	
Option 2	None				
	5	1			
	50		1		
	100		1		
	Keilor Park	Option 1	5	15	117
10			55	170	
20			225	362	
50			371	204	
100			419	67	
Option 2		5		117	
		10	39	170	
		20	264	362	
		50	431	204	
		100	351	67	
Lalor	Option 1	5		5	
	Option 2	5		5	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					25	141						
22					1	13					219	185
83	55				47	27					233	210
37	279	584			26		1				110	
35	120	302				27	475				46	
		1	2									
					23	142						
16					6	39					292	216
206	1				67						193	18
45	385	238			21						38	
18	158	304	42									
	11	510	3									
										2		
										2		
1												1
											15	15
3											52	55
44	82	61									38	119
3	23	293	52									42
10	19	47	289	54								
5											34	34
105	28	57									74	129
5	58	209	159									68
		30	321									

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Meadow Heights	Option 1	None		
		5		73
		10		71
		20		160
		50		130
	Option 2	None		
		5		73
		10		71
		20		160
		50		130
Melbourne Airport	Option 1	100		1
		200	1	
	Option 2	100		1
		200	1	
Mickleham	Option 1	5	13	7
		10	19	3
		20	18	
		50	19	
	Option 2	5	17	7
		10	13	3
Monegeetta	Option 1	None		
	Option 2	None		
Niddrie	Option 1	None		
		5	51	130
		10	64	148
		20	5	
	Option 2	None		
		5	125	130
		10	62	148
		20	41	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Oaklands Junction	Option 1	None		
		5	2	15
		10		12
		20		2
		50	4	8
		100	6	2
	200	14	11	
	Option 2	None		
		5	1	15
		10		12
		20	1	2
		50	4	8
100		14	2	
Plumpton	Option 1	None		
		5		1
		50		2
	Option 2	None		
		5		1
		50		2
St Albans	Option 1	5	775	611
		10	1,067	
		20	61	
	Option 2	5	1,450	611
		10	3,559	
		20	2,526	
Sunbury	Option 1	5	123	
		10	10	
	Option 2	5	137	
		10	17	
Sunshine	Option 1	5	614	
		10	13	
	Option 2	5	14	
Sunshine North	Option 1	5	582	961
		10	1,924	951
		20	878	2
	Option 2	None		
		5	1,664	961
		10	1,200	951
		20	106	2

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Westmeadows	Option 1	None		
		5		28
		10		32
		20		95
		50		71
		100		38
	Option 2	None		
		5		28
		10		32
		20		95
		50		71
		100		38
Wildwood	Option 1	5	3	
		10	1	
		20	4	
		50	4	1
		100	6	
	Option 2	5	2	
		10	3	
		20	10	
		50	11	1
		100	6	
Yuroke	Option 1	5	1	
		10	1	
	Option 2	5	1	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
						25	109		120			
						25	109		120			
2										1	2	
1											1	
		4									4	
			3					1			2	
2											2	
	3										3	
		9						1			9	
			11								10	
				6							5	
1											1	
	1										1	
1											1	

C4.A.3**Estimated number of dwellings by suburb – M3R 2026 N60 annual night**

Suburb	Option	Estimated no. of dwellings		
		N70	M3R	No Build
Airport West	Option 1	5	354	
	Option 2	5	97	
Altona North	Option 1	None		
		5	429	2,042
		10	644	2,003
	Option 2	None		
		5	1,633	2,042
		10	769	2,003
Attwood	Option 1	None		
		5		342
		10		610
	Option 2	None		
		5		342
		10		610
Avondale Heights	Option 1	None		
		5	490	488
		10	74	3,549
	Option 2	5	2,185	488
		10	1,554	3,549
Bolinda	Option 1	None		
		5		2
		10		4
	Option 2	None		
		5		2
		10		4
Braybrook	Option 1	None		
		5	547	372
		10	2,212	3,051
	Option 2	5	344	372
		10	3,136	3,051
Broadmeadows	Option 1	None		
		5		248
		10		624
	Option 2	None		
		5		248
		10		624
Brooklyn	Option 1	10	957	
	Option 2	5	271	
		10	686	

Change from No Build -estimated no. of dwellings (rows represent M3R N70)											Unchanged	Estimated no. of newly affected buildings
Increase					Decrease							
5	10	20	50	100	5	10	20	50	100			
											354	31
											97	
					3,007	190						
35					23						371	
361	262										21	61
					1,973							
143					290						1,200	55
587	1										181	6
					79	924						
					79	924						
					428	2,621						
					196	294						
					56						18	
					1,203						982	
					34						1,520	
					1	4						
					1	4						
					1	720						
					393	154						
335	188				204						1,485	
											344	
78											3,058	
					111	808						
					111	808						
74	883											536
271												271
135	551											265

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Bulla	Option 1	None		
		5	15	89
		10	49	32
	Option 2	20	83	23
		None		
		5	47	89
		10	52	32
		20	101	23
Campbellfield	Option 1	None		
		5		387
		10		883
	Option 2	None		
		5		387
		10		883
Clarkefield	Option 1	None		
		5	18	1
		10	2	6
	Option 2	20		19
		None		
		5	15	1
		10		6
		20		19
Coolaroo	Option 1	None		
		5		205
		10		632
	Option 2	None		
		5		205
		10		632
Dallas	Option 1	None		
		5		281
		10		1,904
	Option 2	None		
		5		281
		10		1,904
Diggers Rest	Option 1	None		
		5		27
		10		48
	Option 2	None		
		5		27
		10		48

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
							11					
5												10
5	43											1
2	41	17			1	12						10
							11					
44												3
17	35											
2	64	12			2	11						10
					359	1,037						
					359	1,037						
					2	2	15					
1					1	5						11
2												
					2	2	15					
1					1	5						8
					153	606						
					153	606						
					33	2,177						
					33	2,177						
					18	45						
					18	38						

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Greenvale	Option 1	None		
		5		164
		10	1	199
	Option 2	None		
		5		164
		10	1	199
Hillside	Option 1	None		
		5		1
	Option 2	None		
		5		1
Kealba	Option 1	5	183	
		10	831	
	Option 2	5	523	
		10	404	
Keilor	Option 1	5	33	172
		10	192	207
		20	1,490	1
	Option 2	5	89	172
		10	1,497	207
		20	107	1
Keilor East	Option 1	None		
		5	1,041	677
		10	98	2,072
	Option 2	20	3	
		5	1,437	677
		10	1,390	2,072
Keilor North	Option 1	None		
		10		2
	Option 2	None		
Keilor Park	Option 1	10		2
		None		
		5	1,019	247
	Option 2	10		719
		20	2	
		5	360	247
		10	723	719
		20	2	
		20	2	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					120	169						
1					120	169						
1					9							
					9							
183												183
	831											668
516											7	523
297	107											241
14											19	33
	192											181
199	272	1,019										124
89												88
347	1,115										35	228
101	4	2										
					218	1,240						
					118	168					755	
					40	2					56	
2											1	
					165						1,272	
					147						1,243	
2											1	
						2						
					8							
					539	69					411	
2												
											360	
											723	
2												

Suburb (cont.)	Option (cont.)	Estimated no. of dwellings (cont.)		
		N70 (cont.)	M3R (cont.)	No Build (cont.)
Kingsville	Option 1	None		
		5		306
		10		61
	Option 2	None		
		5	29	306
		10		61
Lalor	Option 1	None		
		5		3,726
		10		3,197
	Option 2	None		
		5		3,726
		10		3,197
Laverton	Option 1	None		
		5		102
	Option 2	5		102
Maidstone	Option 1	None		
		5		623
		10		751
	Option 2	5	912	623
		10		751
Meadow Heights	Option 1	None		
		5		338
		10		706
	Option 2	None		
		5		338
		10		706
Melbourne Airport	Option 1	20	1	1
	Option 2	20	1	1
Mickleham	Option 1	5	1,876	9
		10	72	
	Option 2	5	236	9
		10	43	
Mill Park	Option 1	None		
		5		522
	Option 2	None		
		5		522

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					121	37						
						8						
					29							
					3,371	2,973						
					3,371	2,973						
						3						
					391	416						
					259					653		
					74	711						
					74	711						
						1						
						1						
1,851											25	1,863
24	48											4
55											181	200
43												
					473							
					473							

Suburb (cont.)	Option (cont.)	Estimated no. of dwellings (cont.)		
		N70 (cont.)	M3R (cont.)	No Build (cont.)
Monegeetta	Option 1	None		
		5		11
		10		27
	Option 2	None		
		5		11
		10		27
Newport	Option 1	None		
		5		192
	Option 2	None		
		5		192
Oaklands Junction	Option 1	5	70	3
		10	3	6
		20	22	17
	Option 2	5	70	3
		10	10	6
		20	15	17
Plumpton	Option 1	None		
		5		2
		10		2
	Option 2	None		
		5		2
		10		2
Riddells Creek	Option 1	5	5	
Romsey	Option 1	None		
		5		6
	Option 2	None		
		5		6
South Kingsville	Option 1	None		
		5		465
		10		283
	Option 2	None		
		5		465
		10		283
Spotswood	Option 1	None		
		5		228
		10		68
	Option 2	None		
		5		228
		10		68

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)					Unchanged (cont.)	
5	10	20	50	100	5	10	20	50	100		
					13	24					
					13	24					
					115						
					115						
											70
1	2										
	7				3	10					2
											70
9											1
					1	12					2
					2	2					
					1	2					
											5
					6						
					6						
					424	88					
					587						
					126						
					126						

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
St Albans	Option 1	5	434	
		10	442	
	Option 2	5	565	
		10	54	
Sunbury	Option 1	5	21	
	Option 2	5	9	
Sunshine	Option 1	5	76	248
		10	2,396	23
	Option 2	5	1,886	248
		10	512	23
Sunshine North	Option 1	5	336	463
		10	3,235	553
	Option 2	5	1,697	463
		10	1,637	553
Thomastown	Option 1	None		
		5		1,220
		10		1,667
	Option 2	None		
		5		1,220
		10		1,667
Toolern Vale	Option 1	None		
		5		7
	Option 2	None		
		5		7
Truganina	Option 1	None		
		5		412
	Option 2	None		
		5		412
West Footscray	Option 1	None		
		5	18	784
		10		2,987
	Option 2	5	2,918	784
		10	177	2,987
Westmeadows	Option 1	None		
		5		228
		10		377
	Option 2	None		
		5		228
		10		377

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
396											38	434
1	441											181
561											4	358
54												
											21	
											9	
76												76
124	2,272											1,086
1,886												1,088
289											223	
322											14	230
348	2,434				48						405	452
1,673											24	486
610											1,027	
					1,350	1,979						
					1,350	1,979						
					7							
					1							
					192							
					232							
					580	2,697						
						18						
					1,730						1,188	
											177	
					80	612						
					80	612						

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Wildwood	Option 1	5	5	10
		10	12	
		20	2	1
	Option 2	5	12	10
		10	13	
		20	3	1
Yarraville	Option 1	None		
		5		499
		10		1,128
	Option 2	None		
		5	815	499
		10		1,128
Yuroke	Option 1	5	4	
		10	2	
	Option 2	5	4	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)												Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)					Unchanged (cont.)		
5	10	20	50	100	5	10	20	50	100			
											1	
4												
3	8					1						
	2											
4											8	
1	11					1						
	3											
					477	884						
						358						
						631					184	
4												4
	2											1
4												3

C4.A.4**Estimated number of dwellings by suburb – M3R 2026 N60 annual 24hrs**

Suburb	Option	Estimated no. of dwellings		
		N60	M3R	No Build
Abbotsford	Option 1	None		
		5	80	1,861
	Option 2	None		
		5		1,861
Aintree	Option 1	None		
		10		343
	Option 2	None		
		10		343
Airport West	Option 1	5	184	262
		10	151	1,741
		20	487	604
		50	2,176	5
		100	525	
	Option 2	5	180	262
		10	165	1,741
		20	470	604
		50	2,416	5
		100	232	
Albanvale	Option 1	None		
		10		465
		20		1,458
	Option 2	10		465
		20	1,923	1,458
Albert Park	Option 1	5	1,714	
		10	1,472	
	Option 2	5	1,737	
Albion	Option 1	10	574	1,327
		20	1,437	684
	Option 2	5	3	
		10	1,486	1,327
		20	522	684

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Altona North	Option 1	5		584
		10	112	1,232
		20	1,890	3,246
		50	2,614	43
		100	605	
	Option 2	5		584
		10	204	1,232
		20	2,393	3,246
		50	2,162	43
		100	462	
Ardeer	Option 1	10		456
		20	1,245	789
	Option 2	10		456
		20	1,245	789
Attwood	Option 1	None		
		10		8
		20		98
		50		215
		100		759
	Option 2	None		
		10		8
		20		98
		50		215
		100		759
Avondale Heights	Option 1	5		125
		10	1	372
		20	285	650
		50	3,158	1,894
		100	1,273	1,674
	Option 2	5	1	125
		10	62	372
		20	579	650
		50	650	1,894
		100	3,411	1,674
		200	14	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
	16				28	66					2	
332	458	766			18	102					214	
264	914	1,064	371								1	
			79	526								
134	64										6	
711	965	101									616	
22	298	888	942								12	
		2	248	212								
576	413										256	
511	710										24	
							77	56	947			
							77	56	947			
	1											
	1	284										
103	241	1,301			407	851					255	
122	127	52	43		154	521					254	
1												
32	30											
106	366	107										
	118	532										
		2,243	1,168									
			14									

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Broadmeadows	Option 1	None		
		5		25
		10		45
		20		54
		50		85
		100		801
	Option 2	None		
		5		25
		10		45
		20		54
		50		85
		100		801
Brooklyn	Option 1	5	2	365
		10		5
		50	2	
		100	955	
	Option 2	5	2	365
		10		5
		20	2	
		50	246	
		100	709	
Bulla	Option 1	None		
		5	1	
		10	1	2
		20	35	30
		50	16	60
		100	38	87
	200	108	33	
	Option 2	None		
		10	7	2
		20	1	30
		50	3	60
		100	55	87
200		143	33	
Bullengarook	Option 1	5	28	23
	Option 2	5	66	23
		10	9	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Bundoora	Option 1	None		
		5		1,682
		10		3,781
	Option 2	None		
		5		1,682
		10		3,781
Burnside	Option 1	None		
		10		48
		20		1,721
	Option 2	10	424	48
		20	1,345	1,721
Burnside Heights	Option 1	None		
		5		678
		10		766
		20		151
	Option 2	None		
		5	418	678
		10	711	766
		20	260	151
Bylands	Option 1	5	3	
		10	7	
		20	15	
	Option 2	5	4	
		10	9	
		20	14	
Cairnlea	Option 1	None		
		5	419	
		10	685	
		20	234	2,821
	Option 2	20	2,430	2,821
		50	391	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					1,867		3,908					
					1,955		3,820					
						13	35	1,721				
						160	231				33	
						128					1,217	
					689	662	95					
						1						
						4					414	
34											677	
78											182	
2											1	3
	7											3
	3	12										
1											3	4
	9											4
	5	9										
							33	1,450				
							27	392				
						1	536	148				
					153	65					16	
940	1,154	98									238	
	62	329										

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Campbellfield	Option 1	None		
		5		2
		10		51
		20		77
		50		236
		100		1,144
	Option 2	None		
		5		2
		10		51
		20		77
		50		236
		100		1,144
Carlsruhe	Option 1	5	1	
Caroline Springs	Option 1	None		
		5		143
		10		3,213
		20		4,690
	Option 2	None		
		5	774	143
		10	1,856	3,213
		20	3,836	4,690
Cherokee	Option 1	5		12
		10	3	
		20	21	
	Option 2	5		12
		10	15	
		20	9	
Clarkefield	Option 1	None		
		5	4	12
		10	10	11
		20	22	3
		50	10	1
		100	2	7
	Option 2	200		18
		5	8	12
		10	16	11
		20	30	3
		50	10	1
		100		7
Cobblebank	Option 2	200		18
		5	213	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Coburg	Option 1	5	826	946
		10	1,027	1,015
		20	1,187	
		50	363	
	Option 2	5	696	946
		10	952	1,015
		20	1,475	
		50	497	
Coburg North	Option 1	5	136	593
		10	384	2,391
		20	1,407	
		50	1,566	
	Option 2	5	68	593
		10	339	2,391
		20	1,218	
		50	1,868	
Coimadai	Option 1	None		
		5	11	40
		10		17
	Option 2	None		
		5	13	40
		10		17
Collingwood	Option 1	5	2,930	
Coolaroo	Option 1	None		
		5		51
		10		32
		20		95
		50		125
		100		762
	Option 2	None		
		5		51
		10		32
		20		95
		50		125
		100		762

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Craigieburn	Option 1	None		
		5	56	1,435
		10	4	2,001
	Option 2	20		577
		None		
		5	6	1,435
		10		2,001
		20		577
Cremorne	Option 1	5	641	
Dallas	Option 1	None		
		20		7
		50		80
		100		2,123
	Option 2	None		
		20		7
		50		80
		100		2,123
Darley	Option 2	5	9	
Darraweit Guim	Option 1	5	30	
		10	11	
		50		1
	Option 2	5	25	
		10	8	
		50		1
Deanside	Option 1	None		
		20		4
	Option 2	20	4	4
Deer Park	Option 1	None		
		5	720	709
		10	357	1,652
	Option 2	20		4,132
		None		
		5	1,020	709
		10	2,362	1,652
		20	3,071	4,132

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					1,434	1,949	892					
					22	32					2	
					1						3	
					1,430	2,007	892					
					4	1					1	
358											283	442
								33	2,177			
								33	2,177			
4											5	4
25							1				4	29
4	7											11
19							1				5	24
2	6											8
							4					
											4	
					615	851	3,946					
					178	308	61				173	
73					53	9					222	
						40						
					199	743					78	
386	19				411	743					803	
131	332				584	33					1,991	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Derrimut	Option 1	None		
		5	331	520
		10	808	
	Option 2	20	1,186	
		5		520
		10	283	
Diamond Creek	Option 1	20	2,138	
		50		
		None		
	Option 2	5		129
		10		99
		20		435
Diggers Rest	Option 1	50		1
		None		
		5		129
	Option 2	10		99
		20		435
		50		1
Docklands	Option 1	None		
		5		166
		10		36
		20		35
		50		36
		100		19
	Option 2	200		39
		None		
		5	10	166
		10	36	36
		20	1,541	35
		50		36
Donnybrook	Option 1	100		19
		200		39
East Melbourne	Option 1	5	2	3
		10	2	
	Option 2	5	1	3
		10	1	
East Melbourne	Option 1	5	3,266	1,707
	Option 2	5		1,707

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					11							
5											326	
279	461										68	
	463	723										
103	180											
	505	1,633										
					95	58	502	3				
					95	58	502	3				
					44	21	19	31	56			
							1	5	7	13		
										9	1	
	9							1		26		
1	60	1,436			1	13	8	5	6		11	
					1,291							
					1,291							
											2	
	2											
1												
1												
1,445											1,821	1,050

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Eden Park	Option 1	5	1	
Eltham	Option 1	None		
		5		128
	Option 2	None		
		5		128
Epping	Option 1	None		
		5		742
		10		1,149
		20		1,686
	Option 2	50		2,955
		None		
		5		742
		10		1,149
		20		1,686
		50		2,955
Essendon	Option 1	5	292	217
		10	170	116
		20	179	
	Option 2	5	287	217
		10	169	116
		20	188	
Essendon North	Option 1	5	413	199
		10	125	749
		20	434	
		50	427	
	Option 2	5	250	199
		10	250	749
		20	441	
		50	461	
Essendon West	Option 1	5	57	
		10	13	
	Option 2	5	15	
Eynesbury	Option 2	5	2	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
1												1
					130							
					130							
					971	1,145	1,265	2,992				
					971	1,145	1,265	2,992				
89											203	
40	130											
	10	169										
81											206	
38	131											
	17	171										
208											205	
119	6											
2	1	431										
		197	230									
42											208	
	250											
	41	400										
		231	230									
9											48	
10											3	
											15	
											2	2

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Grangefields	Option 1	None		
		5		1
	Option 2	None		
		5		1
Greensborough	Option 1	None		
		5		567
		10		1,038
	Option 2	None		
		5		567
		10		1,038
Greenvale	Option 1	None		
		5		111
		10		104
		20		115
		50		139
		100	1	259
	Option 2	None		
		5		111
		10		104
		20		115
		50	1	139
		100		259
Harkness	Option 1	None		
		5		43
		10		76
	Option 2	None		
		5	93	43
		10		76
Heidelberg Heights	Option 1	None		
		5		78
		10		20
	Option 2	None		
		5		78
		10		20

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
						1						
						1						
						421	729					
						421	729					
						7	172	2	108	181		
		1				7	172	2	108	181		
	1											
						146	24					
						49					93	
						100	4					
						66						

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Hesket	Option 1	5	1	
		10	7	
		20	14	
	Option 2	5	5	
		10	16	
Hillside	Option 1	None		
		5		2,011
		10		2,718
		20		184
	Option 2	50		51
		None		
		5	796	2,011
		10	306	2,718
		20		184
		50		51
Hurstbridge	Option 1	None		
		5		14
		10		12
		20		17
	Option 2	None		
		5		14
		10		12
		20		17
Kalkallo	Option 1	5	201	
		10	424	
		20	13	
	Option 2	5	301	
		10	224	
Kangaroo Ground	Option 1	None		
	Option 2	None		
Kealba	Option 1	5	24	99
		10	53	334
		20	126	680
		50	139	
		100	358	
		200	529	
	Option 2	5		99
		10		334
		20	2	680
		50	325	
		100	848	
		200	56	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)								
5	10	20	50	100	5	10	20	50	100				
												1	1
2	5												5
	9	5											
5													5
1	15												
					1,723	2,790	46	146					
					1,918	1,683	1	1					
					430	76	69	16				205	
					26		55	50				175	
					17	5	19						
					17	5	19						
172												29	
125	299												
	10	3											
88												213	
187	37												
					2								
					2								
24													
19	34												
		126											
			139										
			11	347									
				529									
		2											
		15	310										
			24	824									
				56									

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Keilor	Option 1	5	140	134	
		10	157	167	
		20	158	1,227	
		50	51	336	
		100	52	117	
		200	1,640	1	
	Option 2	5		134	
		10	4	167	
		20	323	1,227	
		50	277	336	
		100	292	117	
		200	1,400	1	
	Keilor Downs	Option 1	5	147	5
			10	57	
20			6		
Option 2		5	265	5	
		10	285		
		20	990		
		50	78		
Keilor East	Option 1	5	24	350	
		10	167	540	
		20	936	1,628	
		50	1,745	1,426	
		100	2,884	1,667	
		200	52		
	Option 2	5	145	350	
		10	605	540	
		20	1,133	1,628	
		50	1,147	1,426	
		100	2,631	1,667	
		200	141		
Keilor Lodge	Option 1	5	8		
	Option 2	5	122		
		10	165		
		20	112		

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
96											44	
11	146											
	29	129										
		7	44									
				52								
				1,640								
	4											4
		323										31
		57	220									
				292								
				1,400								
141											6	
23	34											
		6										
259											6	265
	285											285
		990										587
		5	73									
											24	
153	12										2	
62	311	563										
3	14	1,545	180								3	
124	178	294	688	490	708	208					194	
	2		48	2								
											145	
448	4										153	
652	315	36									130	
70	429	270	245								133	
18	13	1,568	1,032									
			138	3								
											8	
122												122
	165											165
		112										92

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Keilor North	Option 1	None		
		5	4	1
		10	1	1
		20	1	
		200		2
	Option 2	None		
		5		1
		10	1	1
		20	10	
		50	5	
		100	1	
		200		2
Keilor Park	Option 1	20		22
		50		441
		100	1,083	622
		200	2	
	Option 2	20		22
		50		441
		100	447	622
		200	638	
Kerrie	Option 1	5	2	1
		10	2	
		20	2	
	Option 2	5	3	1
		10	1	
		20	1	
Kew	Option 1	None		
	5		311	
	Option 2	None		
	5		311	
Kilmore	Option 2	5	6	
Kings Park	Option 1	None		
		5		768
		10		1,011
	Option 2	5	434	768
		10	865	1,011
	20	686		

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
										2		
2											2	
	1											
	1											
										2		
	1										1	
		10									4	
			5									
				1								
	3	247	477	356								
				2								
		15	425	7								
			49	589								
2											2	
1	1										2	
	1	1										
1										2	3	
	1											
	1											
					183							
						164						
6											6	
					789	805						
											434	
329											536	
577	101										8	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Kingsville	Option 1	5		501
		10		305
		20	1,379	253
		50	430	30
	Option 2	5		501
		10	399	305
		20	1,082	253
		50	328	30
Kurunjang	Option 1	None		
		5		1,576
		10		713
		20		18
		50		3
	Option 2	None		
		5	1,489	1,576
		10	1,272	713
		20	27	18
		50		3
Lalor	Option 1	None		
		5		82
		10		145
		20		623
		50		2,454
	Option 2	100		5,183
		None		
		5		82
		10		145
		20		623
Lancefield	Option 1	50		2,454
		100		5,183
		None		
		5		39
		10		46
	Option 2	20		5
		None		
		5		39
		10		46
		20		5

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Laverton	Option 1	5	266	166
		10	272	150
		20	11	2
	Option 2	5	344	166
		10	318	150
		20	60	2
Long Forest	Option 1	None		
		5		91
	Option 2	None		
		5	48	91
		10	2	
Lower Plenty	Option 1	None		
		5		384
		10		715
	Option 2	None		
		5		384
10		715		
Macleod	Option 1	None		
		5		915
		10		1,327
	Option 2	None		
		5		915
10		1,327		
Maidstone	Option 1	5		633
		10	44	867
		20	1,825	625
		50	1,965	581
	Option 2	5	34	633
		10	939	867
		20	1,480	625
		50	812	581
		100	569	
Maribymong	Option 1	5	311	52
		10	480	10
		20	1,240	
		50	8	
	Option 2	5	278	52
		10	1,326	10
		20	146	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)								
5	10	20	50	100	5	10	20	50	100				
6												260	
37												235	
												11	
309												35	14
318													
39												21	
						95							
												28	
												48	
												2	
						374	590						
						374	590						
						1,586	312						
						1,636	209						
	44												
	115	1,710											
11	179	1,607										168	
34													
226	713												
	701	779											
		812											
		281	288										
83												228	311
184	283											13	142
	397	843											
		8											
59												219	164
621	705												
	139	7											

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Meadow Heights	Option 1	None		
		5		195
		10		148
		20		221
		50		221
	Option 2	100		894
		None		
		5		195
		10		148
		20		221
Melbourne	Option 1	50		221
		100		894
	Option 2	None		
		5	9,447	2,387
		5	1,934	2,387
Melbourne Airport	Option 1	200	1	1
	Option 2	200	1	1
Melton	Option 1	None		
		5		87
		10		7
		20		6
		50		2
	Option 2	None		
		5	793	87
		10	7	7
		20	3	6
Melton South	Option 1	5	2	1
	Option 2	5	1,077	1
Melton West	Option 1	None		
		5		1,069
		10		104
	Option 2	20		3
		None		
		5	461	1,069
Mernda	Option 1	5	1,004	
	Option 2	5	16	10
Merrimu	Option 1	5		10
	Option 2	5	16	10

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Mickleham	Option 1	None		
		5	261	1,967
		10	499	548
		20	1,753	92
		50	149	34
	Option 2	None		
		5	525	1,967
		10	128	548
		20	1,841	92
		50	49	34
Middle Park	Option 1	5	15	
		10	1,976	
	Option 2	5	1,796	
		10	195	
Mill Park	Option 1	None		
		5		1,541
		10		2,999
		20		2,823
		50		3,203
	Option 2	None		
		5		1,541
		10		2,999
		20		2,823
Monegeetta	Option 1	None		
		5	1	2
		20		1
		50		4
	Option 2	None		
		5	1	2
		20		1
		50		4
		100		34

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Montmorency	Option 1	None		
		5		1,657
		10		176
	Option 2	None		
		5		1,657
		10		176
Mount Cottrell	Option 1	None		
		5	43	25
		10	26	4
	Option 2	None		
		5	38	25
		10	33	4
Mount Macedon	Option 1	5	46	2
		10	56	
		20	32	
	Option 2	5	52	2
		10	52	
		20	2	
New Gisborne	Option 1	5	2	
Newham	Option 1	5	15	
		10	3	
	Option 2	5	9	
Newport	Option 1	5		2,701
		10	83	477
		20	4,652	145
		50	712	
	Option 2	5	40	2,701
		10	1,774	477
		20	3,633	145
		50		
Niddrie	Option 1	5	209	242
		10	218	998
		20	382	294
		50	783	
		100	89	
	Option 2	5	147	242
		10	196	998
		20	368	294
		50	881	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					1,601	22						
					1,601	22						
					9	9						
29											14	14
10	16											
					9	9						
24											14	11
8	24										1	3
46												46
	56											10
	13	19										
52												28
10	42											
	2											
2												2
11											4	15
3												3
5											4	9
	83											
	489	4,163										
	4	708										
40												
590	1,184											
19	1,328	2,282									4	
50											159	
82	54										82	
	141	241										
		107	676									
			89									
35											112	
45	57										94	
	87	281										
		116	765									

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Oak Park	Option 1	5	248	225
		10	335	69
		20	346	
	Option 2	5	244	225
		10	300	69
		20	391	
		50	7	
	Oaklands Junction	Option 1	20	
50			31	73
100			51	7
200			22	16
Option 2		20		8
		50	55	73
		100	32	7
		200	17	16
Panton Hill	Option 1	None		
		5		7
	Option 2	None		
		5		7
Pascoe Vale	Option 1	5	327	691
		10	450	4,758
		20	1,496	
		50	4,105	
	Option 2	5	313	691
		10	450	4,758
		20	1,328	
		50	4,300	
Pascoe Vale South	Option 1	5	205	406
		10	295	997
		20	794	
		50	616	
	Option 2	5	197	406
		10	274	997
		20	753	
		50	686	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
											248	248
101	125										109	326
62	270	14										93
											244	244
	174										126	291
	153	238										145
		7										
		31										
		5	44	2								
		1	2	7				12				
		54	1									
		26	5								1	
			4			1	1	9	2			
					9							
											327	327
	211										239	241
	406	1,090										37
		1,647	2,458									
											313	313
	184										266	266
	391	937										39
		1,588	2,712									
187											18	
102	193											
	41	753										
		382	234									
178											19	
74	200											
	29	724										
		446	240									

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Plenty	Option 1	None		
		5		44
		10		40
		20		143
		50		114
	Option 2	None		
		5		44
		10		40
		20		143
		50		114
Plumpton	Option 1	None		
		5		24
		10		2,188
		20		28
		50		2
		100		1
		200		2
	Option 2	None		
		5	1,267	24
		10	203	2,188
		20	13	28
		50		2
		100		1
Port Melbourne	Option 1	None		
		5		40
	Option 2	None		
	5		40	
Prahran	Option 1	5	88	
Preston	Option 1	None		
		5	1,366	1,680
		10	1,118	1,648
		20	1,574	
	Option 2	50	117	
		5	1,557	1,680
		10	1,173	1,648
		20	1,837	
	50	427		
Ravenhall	Option 1	None		
		5		1
	Option 2	5		1

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					49	4	158	126				
					49	4	158	126				
					23	2,186	29	3	3			
					43	704	29	3				
					704	205			2	356		
16	11				40					136		
2	8	2							1			
					36							
					36							
										88	88	
					270							
610					183					573	339	
270	595				6					247	34	
20	423	1,131										
		117										
774										783	380	
196	699									278	127	
34	404	1,393								6		
		427										
					1							

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Reservoir	Option 1	None		
		5	2,497	1,325
		10	1,516	4,979
		20	3,033	
		50	38	
	Option 2	None		
		5	1,079	1,325
		10	2,582	4,979
		20	3,550	
		50	557	
Richmond	Option 1	None		
		5	3,518	5,912
	Option 2	None		
		5		5,912
Riddells Creek	Option 1	None		
		5	175	927
		10	324	9
		20	741	39
	Option 2	None		
		5	212	927
		10	744	9
		20	196	39
Rockbank	Option 1	None		
		5		159
		10	1	988
		20		8
	Option 2	None		
		5	13	159
		10	18	988
		20		8

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					216							
96					1,429						972	455
385	142				116						873	376
417	1,191	1,332									93	
		38										
					8							
19											1,060	422
669	7										1,906	507
383	982	1,942									243	36
		557										
					2,368							
87											3,431	3
					2,907							
						1	11	25				
113							4	1			57	4
57	267											1
1	197	543										
							11	25				
46					1	2	3				160	1
416	326										2	
2	191										3	
					100	990	8					
1												
					104	956	8					
					6						7	
1											17	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Romsey	Option 1	None		
		5		1
		10		1
		20		4
		50		4
	100		2	
	Option 2	None		
		5		1
		10		1
		20		4
50			4	
100		2		
Rosanna	Option 1	None		
		5		200
		10		2
	Option 2	None		
		5		200
10		2		
Seabrook	Option 1	5	1	
	Option 2	5	1	
Seaholme	Option 1	5	145	
		10	7	
	Option 2	5	31	
Seddon	Option 1	5	362	
		10	604	
		20	609	
	Option 2	5	561	
		10	683	
South Kingsville	Option 1	10		122
		20	15	673
		50	969	189
	Option 2	10		122
		20	739	673
		50	245	189
South Melbourne	Option 1	5	4,730	
		10	540	
	Option 2	5	2,416	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
South Morang	Option 1	None		
		5		1,739
		10		400
	Option 2	20		208
		None		
		5		1,739
South Wharf	Option 1	10		400
		20		208
	Option 2	None		
South Yarra	Option 1	5	4,343	
		5		28
Southbank	Option 1	None		
		5	2,554	8,761
	Option 2	None		
Spotswood	Option 1	5		8,761
		10		6
		20	329	396
		50	884	51
	Option 2	5		6
		10	4	759
		20	940	396
		50	269	51
Springfield	Option 1	5		1
	Option 2	5		1
St Albans	Option 1	None		
		5	741	2,369
		10	1,462	3,852
		20	3,799	4,328
		50	581	
		100	452	
	Option 2	200	161	
		5	565	2,369
		10	1,171	3,852
		20	4,001	4,328
St Kilda	Option 1	50	6,576	
		100	620	
		5	3,204	
		5		

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
St Kilda West	Option 1	5	1,619	
		10	248	
	Option 2	5	939	
Strathmore	Option 1	5	188	499
		10	347	2,119
		20	883	
		50	1,704	
	Option 2	5	181	499
		10	316	2,119
		20	815	
		50	1,812	
Sunbury	Option 1	None		
		5	486	568
		10	707	234
		20	757	63
		50	4	14
	Option 2	None		
		5	1,298	568
		10	1,540	234
		20	732	63
		50		14
Sunshine	Option 1	5	343	1,048
		10	359	1,217
		20	332	453
		50	102	18
		100	591	
		200	1,811	
	Option 2	5	427	1,048
		10	351	1,217
		20	228	453
		50	519	18
	100	1,883		
Sunshine North	Option 1	20	335	3,372
		50	380	619
		100	822	130
		200	2,584	
	Option 2	20	411	3,372
		50	796	619
		100	2,641	130
		200	273	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
1,619												1,619
227	21											248
21											918	939
52											136	73
2	302										43	72
	82	801										44
		487	1,217									
43											138	70
	273										43	69
	94	721										47
		520	1,292									
							3	38				
363							2				121	
91	598				2	3	1				12	
6	145	582			5	7	7				5	
		4										
							4	38				
1,028					1	1	2				266	709
237	1,284				1	3					15	758
10	102	596			5	5	9				5	3
242											101	
91	201										67	
14	21	297										
			102									
				591								
				1,811								
112											315	
7	225										119	
	1	227										
			519									
			94	1,789								
72	42	61									160	
	24	148	208									
		38	65	719								
		10	54	2,520								
78	96	35			4						198	
	12	282	502									
			530	2,111								
			62	211								

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Sunshine West	Option 1	5	1,102	2,120
		10	1,707	861
		20	3,575	
	Option 2	5	1,528	2,120
		10	2,078	861
		20	2,326	
Sydenham	Option 1	None		
		5		140
		10		5
	Option 2	None		
		5		140
		10		5
Tarneit	Option 1	5	191	221
		10	19	
	Option 2	5	161	221
		10	22	
Taylors Hill	Option 1	None		
		5		1,518
		10		344
	Option 2	None		
		5		1,518
		10	13	344
		20	17	
Taylors Lakes	Option 1	None		
		5	23	114
		10		98
		20		150
	Option 2	None		
		5	182	114
		10	202	98
		20	444	150
Templestowe	Option 1	None		
		5		1,168
	Option 2	None		
		5		1,168

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)								
5	10	20	50	100	5	10	20	50	100				
481												621	54
699	799											209	15
18	1,412	2,145											
378												1,150	43
888	793											397	
119	1,265	942											
						135	4	1					
						135	4	1					
1												190	
18	1												
1												160	
19	2											1	
						1,404	207						
						1,475	64						
												13	
												17	
							43	227	13				
19												4	
							43	227	13				
176												6	182
	202												202
		444											346
						1,305							
						1,305							

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Thomastown	Option 1	None			
		5		484	
		10		1,237	
		20		1,521	
		50		1,284	
	100		2,374		
	Option 2	None			
		5		484	
		10		1,237	
		20		1,521	
50			1,284		
100			2,374		
	Thornhill Park	Option 1	None		
			5		170
		Option 2	None		
			5		170
100					
Toolern Vale	Option 1	None			
		5	5	21	
		10	10	61	
		20	8	16	
		50		76	
	100		10		
	Option 2	None			
		5	15	21	
		10	17	61	
		20	6	16	
50			76		
100		10			
Truganina	Option 1	None			
		5	317	398	
		10	409	47	
		20		1	
	Option 2	None			
		5	176	398	
		10	386	47	
		20	1	1	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Tullamarine	Option 1	5	368	381
		10	350	464
		20	609	74
		50	41	
	Option 2	5	352	381
		10	413	464
20		270	74	
Viewbank	Option 1	None		
		5		212
	Option 2	None		
		5		212
Wallan	Option 1	None		
		5	23	2,636
		10	21	110
		20	27	2
		50	5	
	Option 2	None		
		5	23	2,636
		10	23	110
		20	23	2
Wandong	Option 1	5	18	
	Option 2	5	85	
		10	17	
Watsonia	Option 1	None		
		5		410
		10		1,357
	Option 2	None		
		5		410
Watsonia North	Option 1	None		
		5		145
		10		69
	Option 2	None		
		5		145
		10		69

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)								
5	10	20	50	100	5	10	20	50	100				
1												367	29
123												227	16
233	170	196										10	
4		37											
												352	18
71												342	
68												202	
						316	15						
						186	15						
						2,706	3						
1						10						12	
3	2											16	
	5	22											
		2	3										
						2,704	3						
1						12						10	
9												14	
	5	18											
		6	3										
10												8	18
70												15	85
5	12												17
						368	1,514						
						368	1,514						
						50	42						
						50	42						

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Wattle Glen	Option 1	None		
		5		31
		10		36
		20		34
	Option 2	None		
		5		31
		10		36
		20		34
West Footscray	Option 1	5		578
		10		435
		20	1,208	819
		50	3,851	2,787
		100	68	
	Option 2	5		578
		10	332	435
		20	1,011	819
		50	1,138	2,787
		100	2,646	
Westmeadows	Option 1	None		
		5	37	517
		10	1	155
		20		190
		50		150
	Option 2	None		
		5	1	517
		10		155
		20		190
		50		150
			495	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Wildwood	Option 1	5	4	10	
		10	3	4	
		20	13	6	
		50	7	9	
		100	8		
		200	3	1	
	Option 2	5		10	
		10	2	4	
		20		6	
		50	13	9	
		100	24		
		200	5	1	
	Williamstown	Option 1	5		76
			10	247	
20			5,858		
Option 2		5	176	76	
		10	4,900		
		20	1,029		
Williamstown North	Option 1	5		205	
		20	676		
	Option 2	5		205	
		10	115		
		20	561		
Windsor	Option 1	5	417		
Wollert	Option 1	None			
		5		241	
		10		666	
		20		1,073	
		50		652	
	Option 2	None			
		5		241	
		10		666	
		20		1,073	
		50		652	
Woodend	Option 1	5	11		
		10	35		
	Option 2	5	34		
		10	6		

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)								
5	10	20	50	100	5	10	20	50	100				
3												1	
	3												
	2	11											
			7										
			2	5						1			
				3									
	2												2
			13										
				23						1			
				5									
6	241												
	639	5,219											178
130												46	
864	4,032											4	178
	990	39											
		676											
	115												
	346	215											
321												96	417
					539	577	829	760					
					539	577	829	760					
10												1	11
2	33												32
32												2	34
4	2												3

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Woodend North	Option 1	5	17	
		10	4	
	Option 2	5	13	
Woodstock	Option 1	None		
		5	28	4
		10	11	
	Option 2	None		
5		22	4	
Yallambie	Option 1	None		
		5		378
		10		726
		20		206
	Option 2	None		
		5		378
		10		726
		20		206
Yarrambat	Option 1	None		
		5		263
		10		3
		20		5
	Option 2	None		
		5		263
		10		3
		20		5
Yarraville	Option 1	5	520	592
		10	987	321
		20	2,756	616
		50	1,898	1,026
		100	82	
	Option 2	5	726	592
		10	1,547	321
		20	2,088	616
		50	926	1,026
		100	712	
Yuroke	Option 1	5	2	
		10	4	2
		20	1	
		50	5	
		100	2	
	Option 2	5	5	
		10		2
		20	6	
		50	2	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)					Unchanged (cont.)		
5	10	20	50	100	5	10	20	50	100			
17												17
2	2											4
13												13
					1							
24											4	25
	11											11
					1							
20											2	22
					393	718	198					
					460	698	151					
					261		5					
					261		5					
150											370	517
418	547										22	260
4	557	2,195										
162	574	1,162										
	59	23										
220											506	490
701	822										24	43
	554	1,534										
	63	863										
		465	247									
											2	2
3	1											
		1										
		1	4									
			1	1								
1											4	1
	1	5										
		1	1									

C4.A.5**Estimated number of dwellings by suburb – M3R 2046 N70 Annual Day and Evening**

Suburb	Option	Estimated no. of dwellings		
		N70	M3R	No Build
Airport West	Option 1	None		
		5	206	476
		10	70	30
	Option 2	None		
		5	922	476
		10	495	30
	Mixed Mode	None		
		5		476
		10		30
Attwood	Option 1	None		
		5		87
		10		83
		20		120
		50		82
		100		6
	Option 2	None		
		5		87
		10		83
		20		120
		50		82
		100		6
	Mixed Mode	None		
		5		87
		10		83
20			120	
50			82	
100			6	

Change from No Build -estimated no. of dwellings (rows represent M3R N70)											Unchanged	Estimated no. of newly affected buildings
Increase					Decrease							
5	10	20	50	100	5	10	20	50	100			
					262	3						
70											136	181
62	2										6	69
					14							
416					22						484	577
211	228										56	324
					346	43						
					224	21	20	53	115			
					224	21	20	53	115			
					224	21	20	53	115			

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
Avondale Heights	Option 1	5	882	744
		10	419	433
		20	526	328
		50	242	
		100	39	
	Option 2	5	755	744
		10	582	433
		20	608	328
		50	269	
		100	124	
	Mixed Mode	5	957	744
		10	436	433
		20	559	328
		50	252	
		100	156	
Braybrook	Option 2	5	21	
	Mixed Mode	5	486	
Broadmeadows	Option 1	None		
		5		62
		10		14
		20		29
		50		41
	Option 2	None		
		5		62
		10		14
		20		29
		50		41
	Mixed Mode	None		
		5		62
		10		14
		20		29
		50		41
		100		183

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
Bulla	Option 1	None		
		5	8	1
		10	4	6
		20	21	6
		50	35	6
		100	45	5
		200	44	18
	Option 2	None		
		5	8	1
		10	6	6
		20	12	6
		50	32	6
		100	53	5
		200	50	18
	Mixed Mode	None		
		5	7	1
		10	6	6
		20	13	6
		50	32	6
		100	53	5
		200	48	18
Campbellfield	Option 1	None		
		5		79
		10		79
		20		268
		50		114
	Option 2	None		
		5		79
		10		79
		20		268
		50		114
	Mixed Mode	None		
		5		79
		10		79
		20		268
Clarkefield	Mixed Mode	5	1	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
Coolaroo	Option 1	None		
		5		61
		10		69
		20		170
		50		200
		100		35
	Option 2	None		
		5		61
		10		69
		20		170
		50		200
		100		35
	Mixed Mode	None		
		5		61
		10		69
		20		170
		50		200
		100		35
Dallas	Option 1	None		
		5		188
		10		218
		20		236
		50		313
		100		627
	Option 2	None		
		5		188
		10		218
		20		236
		50		313
		100		627
	Mixed Mode	None		
		5		188
		10		218
		20		236
		50		313
		100		627
Darraweit Guim	Mixed Mode	5	2	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					172	92	128	11				
					172	92	128	11				
					172	92	128	11				
					370	70	166	357	709			
					370	70	166	357	709			
					370	70	166	357	709			
1											1	2

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
Diggers Rest	Option 1	None		
		5	21	15
		10	5	10
		20		4
		50		4
		100		5
		200		9
	Option 2	None		
		5	22	15
		10	9	10
		20		4
		50		4
		100		5
		200		9
	Mixed Mode	None		
		5	22	15
		10	9	10
		20		4
		50		4
		100		5
		200		9
Greenvale	Option 1	None		
		5		25
		10		39
		20		50
		50		27
		100		1
	Option 2	None		
		5		25
		10		39
		20		50
		50		27
	Mixed Mode	None		
		5		25
		10		39
20			50	
		50		
		27		
		1		

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
Kealba	Option 1	5	89	
		10	149	
		20	756	
		50	75	
		100	35	
	Option 2	5	104	
		10	70	
		20	733	
		50	206	
		100	25	
	Mixed Mode	5	103	
		10	76	
		20	773	
		50	159	
		100	30	
Keilor	Option 1	5	45	51
		10	145	68
		20	249	5
		50	236	1
		100	351	
		200	650	
	Option 2	5	20	51
		10	114	68
		20	264	5
		50	286	1
		100	422	
		200	582	
	Mixed Mode	5	20	51
		10	115	68
		20	266	5
50		306	1	
100		434		
200		545		

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
80											9	89
	149											149
	2	754										756
		3	72									75
				35								35
79											25	104
4	66											70
	2	731										733
			206									206
				25								25
100											3	103
	76											76
	3	770										773
			159									159
				30								30
45												45
9	136											145
		249										249
		32	204									221
		19	87	245								219
			1	649								240
20												20
2	112											114
	1	263										262
	10	13	263									264
		21	79	322								254
			3	579								217
20												20
1	114											115
	2	264										263
	9	37	260									268
		72	11	351								267
			2	543								196

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
Keilor East	Option 1	None		
		5	364	335
		10	310	634
		20	207	417
		50	328	385
		100	557	
		200	1	
	Option 2	None		
		5	312	335
		10	377	634
		20	191	417
		50	263	385
		100	652	
		200	19	
	Mixed Mode	None		
		5	229	335
		10	237	634
		20	189	417
		50	234	385
		100	563	
		200	150	
Keilor North	Option 1	None		
		10		1
		20		1
	Option 2	None		
		10		1
		20		1
	Mixed Mode	None		
		10		1
		20		1

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					130	365						
28					96	16					224	177
101	55				9						145	164
56	147	4										28
14	83	175	56									
		130	364	63								
				1								
					107	363						
10					15	7					280	157
71	77				18						211	166
51	134										6	53
	140	38	85									
		62	164	426								
				19								
					119	592						
13					8	3					205	190
94	2										141	170
58	122										9	63
	153	28	53									
		72	167	324								
				150								
						1	1					
						1	1					
						1	1					

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings		
			M3R (cont.)	No Build (cont.)	
Keilor Park	Option 1	5	153	131	
		10	129	135	
		20	213	178	
		50	180	130	
		100	163	17	
		200	81		
	Option 2	5	132	131	
		10	183	135	
		20	271	178	
		50	179	130	
		100	151	17	
		200	95		
	Mixed Mode	5	122	131	
		10	93	135	
		20	172	178	
		50	147	130	
		100	127	17	
		200	90		
	Lalor	Option 1	None		
			5		260
		Option 2	None		
5				260	
Mixed Mode		None			
		5		260	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
Meadow Heights	Option 1	None		
		5		73
		10		95
		20		138
		50		112
		100		29
	Option 2	None		
		5		73
		10		95
		20		138
		50		112
		100		29
	Mixed Mode	None		
		5		73
		10		95
		20		138
		50		112
		100		29
Melbourne Airport	Option 1	100		1
		200	1	
	Option 2	100		1
		200	1	
	Mixed Mode	100		1
		200	1	
Mickleham	Option 1	5	20	
		10	16	
	Option 2	5	21	
		10	15	
	Mixed Mode	5	13	
		10	22	
		20	6	
Monegeetta	Option 1	None		
		5		4
	Option 2	None		
		5		4
	Mixed Mode	None		
		5		4

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings		
			M3R (cont.)	No Build (cont.)	
Niddrie	Option 1	None			
		5		144	
		10		51	
	Option 2	None			
		5	26	144	
		10		51	
	Mixed Mode	None			
		5		144	
		10		51	
	Oaklands Junction	Option 1	5		1
			10		3
			20	4	2
50			4	3	
100			9	1	
200			6	11	
Option 2		5		1	
		10		3	
		20	5	2	
		50	4	3	
		100	8	1	
		200	6	11	
Mixed Mode		5		1	
		10		3	
		20	5	2	
		50	3	3	
		100	9	1	
		200	6	11	
Plumpton		Option 1	None		
			5		1
			10		1
		Option 2	None		
			5		1
			10		1
	Mixed Mode	None			
		5		1	
		10		1	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
St Albans	Option 1	5	2,040	
		10	1,679	
		20	43	
	Option 2	5	1,906	
		10	1,877	
		20	464	
	Mixed Mode	5	1,811	
		10	1,960	
		20	370	
Sunbury	Option 1	5	6	
		10	2	
	Option 2	5	5	
		10	3	
	Mixed Mode	5	1	
		10	2	
Sunshine	Option 1	5	159	
	Option 2	5	47	
	Mixed Mode	5	143	
Sunshine North	Option 1	5	953	43
		10	529	
		20	338	
	Option 2	5	861	43
		10	554	
		20	218	
	Mixed Mode	5	878	43
		10	495	
		20	338	
Thomastown	Option 1	None		
		5		83
	Option 2	None		
		5		83
	Mixed Mode	None		
	5		83	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
1,841											199	1,996
71	1,608											1,670
		43										43
1,684											222	1,863
94	1,783											1,875
	7	457										464
1,603											208	1,789
97	1,863											1,960
	5	365										370
6												5
	2											
5												5
1	2											
											1	
1	1											
146											13	159
47												47
142											1	143
727											226	647
107	418										4	401
6	17	315										225
636											225	603
116	425										13	420
	75	143										136
655											223	632
115	375										5	391
12	29	297										229
												154
												154
												154

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings	
			M3R (cont.)	No Build (cont.)
Westmeadows	Option 1	None		
		5		29
		10		41
		20		85
		50		66
		100		35
	Option 2	None		
		5		29
		10		41
		20		85
		50		66
		100		35
	Mixed Mode	None		
		5		29
		10		41
		20		85
		50		66
		100		35
Wildwood	Option 1	5	3	
		10	3	
		20	7	1
		50	8	
		100	8	
	Option 2	5	4	
		10	3	
		20	5	1
		50	5	
		100	13	
	Mixed Mode	None		
		5	3	
		10	3	
		20	5	1
		50	7	
		100	11	

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)					Unchanged (cont.)	
5	10	20	50	100	5	10	20	50	100		
					25	109			120		
					25	109			120		
					25	109			120		
3											3
	2							1			2
		7									7
			8								8
			1	7							8
3								1			3
	3										3
		5									5
			5								5
				13							13
								1			
2										1	3
	3										3
		5									5
			7								7
				11							11

C4.A.6**Estimated number of dwellings by suburb – M3R 2046 N70 annual 24hrs**

Suburb	Option	Estimated no. of dwellings		
		N70	M3R	No Build
Airport West	Option 1	None		
		5	507	501
		10	98	108
	Option 2	5	624	501
		10	943	108
		20	44	
Attwood	Option 1	None		
		5		80
		10		89
		20		124
		50		78
		100		18
	Option 2	None		
		5		80
		10		89
		20		124
		50		78
		100		18
Avondale Heights	Option 1	5	923	813
		10	445	628
		20	549	500
		50	241	111
		100	46	
	Option 2	5	584	813
		10	783	628
		20	635	500
		50	310	111
		100	157	
Braybrook	Option 1	5		1,167
	Option 2	5	1,161	1,167

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)			
			M3R (cont.)	No Build (cont.)		
Broadmeadows	Option 1	None				
		5		61		
		10		21		
		20		24		
		50		34		
		100		196		
	Option 2	None				
		5		61		
		10		21		
		20		24		
		50		34		
		100		196		
		Bulla	Option 1	None		
				5	8	5
10	4			4		
20	21			6		
50	35			8		
100	43			4		
200	46			20		
Option 2	None					
	5		7	5		
	10		10	4		
	20		11	6		
	50		28	8		
	100		51	4		
	200		58	20		
Campbellfield	Option 1	None				
		5		94		
		10		84		
		20		164		
		50		222		
	Option 2	None				
		5		94		
		10		84		
		20		164		
		50		222		

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)			
			M3R (cont.)	No Build (cont.)		
Coolaroo	Option 1	None				
		5		52		
		10		68		
		20		165		
		50		207		
		100		49		
	Option 2	None				
		5		52		
		10		68		
		20		165		
		50		207		
		100		49		
		Dallas	Option 1	None		
				5		164
10				234		
20				218		
50				262		
100				720		
Option 2	None					
	5			164		
	10			234		
	20			218		
	50			262		
	100			720		
	Diggers Rest		Option 1	None		
				5	21	13
10		5		10		
20				11		
50				3		
100				6		
200				9		
Option 2		None				
		5	30	13		
		10	16	10		
		20		11		
		50		3		
		100		6		
200			9			

Change from No Build -estimated no. of dwellings (rows represent M3R N70) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					214	92	110	29				
					214	92	110	29				
					338	116	57	466	709			
					338	116	57	466	709			
					13	12	7	6	11			
16										5	13	
	5										4	
					13	12	7	6	11			
28										2	17	
	16										15	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)			
			M3R (cont.)	No Build (cont.)		
Greenvale	Option 1	None				
		5		23		
		10		38		
		20		54		
		50		30		
		100		1		
	Option 2	None				
		5		23		
		10		38		
		20		54		
		50		30		
		100		1		
		Kealba	Option 1	5	89	
				10	147	
20	738					
50	86					
100	44					
Option 2	5		105			
	10		69			
	20		692			
	50		249			
	100		35			
Keilor	Option 1	5	44	69		
		10	139	74		
		20	235	8		
		50	230	1		
		100	311			
		200	717			
	Option 2	5	23	69		
		10	101	74		
		20	259	8		
		50	275	1		
		100	397			
		200	637			

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Keilor East	Option 1	None			
		5	367	390	
		10	395	637	
		20	217	297	
		50	329	610	
		100	563		
		200	1		
	Option 2	None			
		5	350	390	
		10	389	637	
		20	234	297	
		50	243	610	
		100	634		
		200	77		
Keilor North	Option 1	None			
		10		1	
		20		1	
	Option 2	None			
		10		1	
		20		1	
Keilor Park	Option 1	5	154	132	
		10	140	122	
		20	224	186	
		50	190	129	
		100	165	49	
		200	90		
		Option 2	5	133	132
	10		163	122	
	20		295	186	
	50		187	129	
	100		154	49	
	200		111		
	Lalor		Option 1	None	
		5			380
Option 2		None			
		5		380	

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Meadow Heights	Option 1	None		
		5		75
		10		86
		20		141
		50		112
	Option 2	100		43
		None		
		5		75
		10		86
		20		141
Melbourne Airport	Option 1	50		112
		100		43
	Option 2	100		1
		200	1	
Mickleham	Option 1	100		1
		200	1	
		5	28	
	Option 2	10	18	
		20	11	
		5	29	
Monegeetta	Option 1	10	18	
		20	7	
	Option 2	None		
		5		5
Niddrie	Option 1	None		
		5	1	137
		10		75
	Option 2	None		
		5	59	137
		10	3	75

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Oaklands Junction	Option 1	10	1	1
		20	2	5
		50	5	2
		100	7	2
		200	9	11
	Option 2	10	1	1
		20	2	5
		50	6	2
		100	9	2
		200	6	11
Plumpton	Option 1	None		
		10		2
	Option 2	None		
		10		2
St Albans	Option 1	5	2,087	
		10	1,743	
		20	44	
	Option 2	5	1,902	
		10	2,066	
		20	597	
Sunbury	Option 1	5	7	
		10	3	
	Option 2	5	26	
		10	3	
Sunshine	Option 1	5	767	
	Option 2	5	238	
Sunshine North	Option 1	5	1,164	95
		10	589	19
		20	488	
	Option 2	5	944	95
		10	596	19
		20	296	
Thomastown	Option 1	None		
		5		131
	Option 2	None		
		5		131

Suburb (cont.)	Option (cont.)	N70 (cont.)	Estimated no. of dwellings (cont.)			
			M3R (cont.)	No Build (cont.)		
Westmeadows	Option 1	None				
		5		30		
		10		35		
		20		88		
		50		66		
		100		40		
	Option 2	None				
		5		30		
		10		35		
		20		88		
		50		66		
		100		40		
		Wildwood	Option 1	5	3	
				10	3	
20	7			1		
50	8					
100	8					
Option 2	5		1			
	10		6			
	20		5	1		
	50		5			
	100		11			
Yuroke	Option 1	5	1			
	Option 2	5	1			

Change from No Build -estimated no. of dwellings (rows represent M3R N60)											Unchanged	Estimated no. of newly affected buildings
Increase					Decrease							
5	10	20	50	100	5	10	20	50	100			
51											745	158
											470	72
					1,374	1,444						
10					58						392	
186	536										55	
	12	1										
					1,301	71						
					635	1					277	
318	682				29						689	
					138	865						
					138	865						
					363	2,085						
						655						
					59	173					6	
											546	
											3,236	
											148	
					1	5						
					1	5						
						514						
					36	452						
					445	91					214	
393	560	344			2						429	
50	366										1,156	
1,131	53										724	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Broadmeadows	Option 1	None		
		5		147
		10		725
	Option 2	None		
		5		147
		10		725
Brooklyn	Option 1	10	221	
		20	736	
	Option 2	5	2	
		10	955	
Bulla	Option 1	None		
		5	16	101
		10	35	53
		20	87	21
		50	18	4
	Option 2	None		
		5	3	101
		10	61	53
		20	127	21
		50	10	4
Campbellfield	Option 1	None		
		5		316
		10		1,016
	Option 2	None		
		5		316
10		1,016		
Cherokee	Option 1	5	19	
Clarkefield	Option 1	None		
		5	17	2
		10	9	3
		20		22
	Option 2	None		
		5	11	2
		10	9	3
		20		22

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					111	808						
					111	808						
4	217											2
	204	532										451
2												2
	955											451
						11						
1												15
7	23											5
1	1	73			7	5						
6	3	8			1							
						11						
2												1
												1
23	38											
2	10	103			4	7						1
5	3	1										1
					262	1,160						
					262	1,160						
16												3
					2	15						14
5							4					8
4	1					2	1					1
					2	15						
							4					7
4	1					2	1					1

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Coolaroo	Option 1	None		
		5		161
		10		696
	Option 2	None		
		5		161
		10		696
Dallas	Option 1	None		
		5		143
		10		2,049
	Option 2	None		
		5		143
		10		2,049
Darraweit Guim	Option 1	5	1	1
	Option 2	5	1	1
Diggers Rest	Option 1	None		
		5		20
		10		55
	Option 2	None		
		5		20
		10		55
Epping	Option 1	None		
		5		2,708
	Option 2	None		
		5		2,708
Gisborne	Option 2	5	182	
Gisborne South	Option 2	5	1	
Greenvale	Option 1	None		
		5		130
		10	1	223
	Option 2	None		
		5		130
		10	1	223
Hesket	Option 1	5	3	
Hillside	Option 1	None		
	Option 2	None		
Kalkallo	Option 1	5	2	
Kealba	Option 1	5	125	
		10	280	
		20	620	
	Option 2	5	275	
		10	723	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					153	606						
					153	606						
					33	2,177						
					33	2,177						
											1	
											1	
					8	52						
					4	52						
					2,702							
					2,702							
											182	
											1	
					120	169						
	1											
					120	169						
1												
											3	3
					9							
					9							
1											1	2
125												125
1	279											280
		620										214
255											20	275
1	722											317

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Keilor	Option 1	5	32	176
		10	47	178
		20	1,637	5
		50	3	
	Option 2	5	39	176
		10	753	178
		20	914	5
		50	1	
Keilor East	Option 1	None		
		5	1,602	694
		10	169	1,956
	Option 2	20	17	19
		5	1,129	694
		10	1,867	1,956
Keilor North	Option 1	20	165	19
		None		
	Option 2	10		2
		None		
Keilor Park	Option 1	5	3	
		10		2
		None		
	Option 2	5	1,082	266
		10		409
		20	2	281
Kerrie	Option 2	5	238	266
		10	418	409
		20	429	281
Kingsville	Option 1	5	1	
		None		
		5		233
	Option 2	10		47
		5	73	233
Lalor	Option 1	10		47
		None		
		5		3,082
	Option 2	10		4,063
		None		
		5		3,082
		10		4,063

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)								
5	10	20	50	100	5	10	20	50	100				
	9											23	32
		47											46
		143	1,494										158
		1	1	1									
	28											11	39
		753											185
		904	10										
			1										
						198	781						
	277					33	520					772	
						29	125					15	
	2					12						3	
												1,129	
												1,867	
	1	2										162	
							2						
								2					
	3												3
	86					70	408					518	
		2											
												238	
	24											394	
		2										427	
	1												1
						37							
												73	
						3,248	3,568						
						3,248	3,568						

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Lancefield	Option 1	None		
		5		1
	Option 2	None		
		5		1
Laverton	Option 1	None		
		5		33
	Option 2	None		
		5		33
Maidstone	Option 1	None		
		5		473
	10		671	
	Option 2	5	645	473
10		508	671	
Meadow Heights	Option 1	None		
		5		239
	10		838	
	Option 2	None		
5			239	
10		838		
Melbourne Airport	Option 1	20	1	1
	Option 2	20	1	1
Melton	Option 1	None		
		5		1
	Option 2	None		
		5		1
Mickleham	Option 1	5	1,766	35
		10	143	
		20	53	
	Option 2	5	1,842	35
10		78		
Mill Park	Option 1	None		
		5		1,602
	Option 2	None		
		5		1,602
Monegeetta	Option 1	None		
		5		2
		10		36
	Option 2	None		
5			2	
10		36		
Mount Macedon	Option 1	5	3	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Newport	Option 1	None		
		5		111
	Option 2	None		
		5		111
Niddrie	Option 1	5	204	
	Option 2	5	32	
Oaklands Junction	Option 1	5	26	77
		10	53	4
		20	23	19
		50	2	
	Option 2	5	30	77
		10	52	4
		20	20	19
		50	2	
Plumpton	Option 1	None		
		5		1
		10		3
	Option 2	None		
		5		1
		10		3
Riddells Creek	Option 1	5	534	
	Option 2	5	5	
Romsey	Option 1	None		
		5		2
		10		6
	Option 2	None		
		5		2
		10		6
South Kingsville	Option 1	None		
		5		463
		10		219
	Option 2	None		
		5		463
		10		219
Spotswood	Option 1	None		
		5		236
		10		45
	Option 2	None		
		5		236
		10		45

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					40							
					40							
											204	
											32	
2											24	
34	18										1	
2	2	7			11	1						
2												
2											28	
49	2										1	
	7				3	8					2	
2												
					2	3						
					3	2						
316											218	15
											5	
					3	5						
					3	5						
					344	40						
					383	1						
					54							
					54							

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
St Albans	Option 1	5	469	
		10	386	
		20	224	
	Option 2	5	581	
		10	323	
Sunbury	Option 1	5	292	
	Option 2	5	375	
Sunshine	Option 1	5	136	146
		10	305	6
		20	2,101	
	Option 2	5	303	146
		10	2,076	6
		20	27	
Sunshine North	Option 1	5	307	430
		10	636	491
		20	2,775	
	Option 2	5	593	430
		10	2,330	491
		20	586	
Thomastown	Option 1	None		
		5		1,013
		10		1,878
	Option 2	None		
		5		1,013
		10		1,878
Toolern Vale	Option 1	None		
		5		13
		10		5
	Option 2	None		
		5		13
		10		5
Truganina	Option 1	None		
		5		366
	Option 2	None		
Tullamarine	Option 1	5	40	
West Footscray	Option 1	None		
		5	73	682
		10		2,897
	Option 2	5	964	682
		10	2,530	2,897

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)								
5	10	20	50	100	5	10	20	50	100				
450												19	302
2	384												176
		224											10
504												77	316
	323												62
13												279	
												375	
136													136
1	304												305
	76	2,025											727
302												1	303
14	2,062												729
15	12												
288												19	
10	567					45	3					11	
90	444	2,198										43	
562												31	
43	2,287												
443	41											102	
						1,186	2,143						
						1,186	2,143						
						13	4						
						11							
						404							
						404							
												40	4
						543	2,252						
							73						
						23						941	
						312						2,218	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Westmeadows	Option 1	None		
		5		155
		10		460
	Option 2	None		
		5		155
		10		460
Wildwood	Option 1	5	10	7
		10	5	3
		20	10	1
	Option 2	5	15	7
		10	11	3
		20	15	1
Wollert	Option 1	None		
		5		562
	Option 2	None		
Yarraville	Option 1	None		
		5	26	516
		10		1,056
	Option 2	None		
		5	416	516
		10	548	1,056
Yuroke	Option 1	5	4	
		10	4	
	Option 2	5	5	
		10	1	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					80	612						
					80	612						
5											5	
	5											
	8	1				1						
15												11
6	5											
	4	10					1					
					660							
					660							
					311	719						
						26						
					115							
					388						28	
					301						247	
3											1	4
	4											3
4											1	5
	1											

C4.A.8**Estimated number of dwellings by suburb – M3R 2046 N60 annual 24hrs**

Suburb	Option	Estimated no. of dwellings		
		N60	M3R	No Build
Abbotsford	Option 1	None		
		5		1,861
	Option 2	None		
		5		1,861
Aintree	Option 1	None		
		5		234
		10		44
	Option 2	None		
		5		234
		10		44
Airport West	Option 1	5	219	246
		10	399	1,981
		20	2,456	99
		50	125	
	Option 2	5	227	246
		10	385	1,981
		20	2,459	99
		50	101	
Albanvale	Option 1	None		
		5		235
		10		1,214
		20		474
	Option 2	5		235
		10	1,923	1,214
Albion	Option 1	5	38	1,105
		10	1,251	849
		20	534	33
		50	188	
	Option 2	5	776	1,105
		10	600	849
		20	460	33
		50	175	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Altona North	Option 1	5		1,076
		10	93	1,039
		20	822	2,866
		50	4,242	
		100	64	
	Option 2	5		1,076
		10	6	1,039
		20	857	2,866
		50	3,666	
		100	692	
Ardeer	Option 1	5		239
		10	238	778
		20	822	228
		50	185	
	Option 2	5	2	239
		10	343	778
		20	652	228
		50	248	
Attwood	Option 1	None		
		10		18
		20		149
		50		216
		100		697
	Option 2	None		
		10		18
		20		149
		50		216
		100		697
Avondale Heights	Option 1	5	28	269
		10	64	316
		20	177	584
		50	402	2,086
		100	824	1,222
		200	3,215	
		5	35	269
	Option 2	10	66	316
		20	185	584
		50	394	2,086
		100	645	1,222
		200	3,383	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Beveridge	Option 1	5	1	
		10	1	
	Option 2	5	1	
Bolinda	Option 1	None		
		5	3	5
		10	4	6
		20	18	1
		50		2
	100		4	
	Option 2	None		
		5	3	5
		10	4	6
		20	18	1
		50		2
100			4	
Bonnie Brook	Option 1	None		
		20		1
	Option 2	None		
		20		1
Braybrook	Option 1	5		1
		10		166
		20		564
		50		2,749
		200	3,480	
	Option 2	5		1
		10		166
		20		564
		50		2,749
		100	64	
	200	3,416		

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Broadmeadows	Option 1	None		
		5		52
		10		39
		20		39
		50		129
	100		737	
	Option 2	None		
		5		52
		10		39
		20		39
50			129	
Brooklyn	Option 1	5		207
		20	1	
		50	229	
		100	727	
	Option 2	5		207
		20	13	
		50	501	
		100	443	
Bulla	Option 1	None		
		5		11
		10	1	78
		20	2	64
		50	3	10
		100	83	17
	200	112	32	
	Option 2	None		
		5	1	11
		10		78
20		2	64	
Bullengarook	Option 1	5	3	
		10	7	
	Option 2	5	9	
		10	8	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Bundoora	Option 1	None		
		5		1,855
		10		3,438
	Option 2	None		
		5		1,855
		10		3,438
Burnside	Option 1	None		
		5		27
		10		1,302
		20		419
	Option 2	None		
		5	402	27
		10	960	1,302
		20		419
Burnside Heights	Option 1	None		
		5		305
		10		137
	Option 2	5	204	305
		10	87	137
Bylands	Option 1	5	1	
	Option 2	5	1	
Cairnlea	Option 1	None		
		5	209	
		10	290	266
		20	1,928	2,555
	Option 2	50	51	
		10	519	266
		20	1,106	2,555
		50	1,196	
Campbellfield	Option 1	None		
		5		27
		10		75
		20		133
		50		230
		100		1,045
	Option 2	None		
		5		27
		10		75
		20		133
		50		230
		100		1,045

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					2,104	3,326						
					2,104	3,326						
					25	1,370	351					
						379						
					109	205					88	
					554	304					102	
					216	33						
											204	
											87	
											1	1
											1	1
					2	339	2					
					38	171						
					120	134					36	
386	1,233	48			56	10					195	
	6	45										
					228	2					289	
63	404	322			33						284	
		1,196										
					12	74	128	94	1,202			
					12	74	128	94	1,202			

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Caroline Springs	Option 1	None		
		5		1,525
		10		4,221
	Option 2	None		
		5	1,624	1,525
		10	2,239	4,221
Cherokee	Option 1	5	3	
		10	7	
		20	14	
	Option 2	5	5	
		10	17	
Chintin	Option 1	5	5	
		10	2	
	Option 2	5	5	
		10	2	
Clarkefield	Option 1	None		
		5	3	16
		10	21	6
		20	22	2
		50	13	1
		100		5
	Option 2	None		
		5	6	16
		10	20	6
		20	20	2
		50	15	1
Coburg	Option 1	5	909	604
		10	851	599
		20	280	
	Option 2	5	996	604
		10	867	599
		20	414	
Coburg North	Option 1	5	528	629
		10	1,238	1,979
		20	1,346	
	Option 2	5	429	629
		10	1,017	1,979
		20	1,763	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					2,548		2,849					
						1,197		78				
						262		6			1,356	
						243					1,996	
2											1	3
1	6											3
	9	5										
3											2	4
11	6											
4											1	4
2												2
4											1	4
2												2
						2						
1						2						1
3	15							2	1			8
	1	6										15
	1		5					1				6
						1						
3						2					1	1
1	8							1	1		9	8
	4	2						1				13
		4	1					1				8
52											857	
591											260	
231	49											
814											182	5
866	1											
214	200											
84											444	279
1,004											234	
1,134	210										2	
53											376	376
989	28											
704	1,059											

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)			
			M3R (cont.)	No Build (cont.)		
Coimadai	Option 1	None				
		5		15		
	Option 2	None				
		5		15		
Coolaroo	Option 1	None				
		5		50		
		10		65		
		20		102		
		50		124		
	Option 2	100		712		
		None				
		5		50		
		10		65		
		20		102		
Craigieburn	Option 1	None				
		5	1	1,044		
		10		1,161		
	Option 2	20		775		
		None				
		5	1	1,044		
		10		1,161		
		20		775		
		Dallas	Option 1	None		
				10		1
20				26		
50				125		
100				2,058		
Option 2	None					
	10		1			
	20		26			
	50		125			
	100		2,058			
Darraweit Guim	Option 1	5	9			
		10	5			
		50		1		
	Option 2	5	10			
		10	4			
		50		1		

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					15							
					15							
					71	166	13	140	606			
					71	166	13	140	606			
					825	994	1,214					1
					803	1,020	1,214					1
							33	10	2,167			
							33	10	2,167			
4								1		4		2
5												
5								1		4		2
4												

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Deanside	Option 1	None		
		10		4
	Option 2	5	1	
		10	3	4
Deer Park	Option 1	None		
		5	632	1,010
		10	695	1,221
	Option 2	20	2,163	2,525
		None		
		5	880	1,010
		10	1,974	1,221
		20	2,414	2,525
Derrimut	Option 1	20	2,421	
	Option 2	20	2,329	
		50	92	
Diamond Creek	Option 1	None		
		5		119
		10		90
		20		436
	Option 2	None		
		5		119
		10		90
		20		436
Diggers Rest	Option 1	None		
		5	41	57
		10	198	70
		20	1,315	8
		50		7
		100		8
		200		40
	Option 2	None		
		5	11	57
		10	86	70
		20	808	8
		50	657	7
		100		8
Docklands	Option 1	None		
		5		2,120
	Option 2	None		
		5		2,120

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					4							
											1	
											3	
					270	599	1,980					
41					42	151	172				226	
150	175				32	164	5				169	
33	376	1,667				4					83	
					198	614	263					
23					49	506	82				220	
84	183				152	1,360					195	
41	291	1,931			58						93	
		2,421										1,922
		2,329										1,864
		24	68									58
					180	10	498					
					180	10	498					
					3	3	3	2	43			
21					2		3	5	3		7	
38	148				2		1				9	
2	88	1,225										
					3	3	3	1	36			
							1	2	8			
6	65					3		4	2		6	
3	60	744									1	
		362	295									
					1,291							
					1,291							

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Donnybrook	Option 1	None		
		5	2	3
	Option 2	None		
		5	1	3
East Melbourne	Option 1	None		
		5		1,657
	Option 2	None		
		5		1,657
Eltham	Option 1	None		
		5		60
	Option 2	None		
		5		60
Epping	Option 1	None		
		5		901
		10		813
		20		1,462
		50		3,059
	Option 2	None		
		5		901
		10		813
		20		1,462
		50		3,059
Essendon	Option 1	5	138	157
		10	62	69
	Option 2	5	144	157
		10	79	69
Essendon North	Option 1	5	194	228
		10	356	629
		20	365	
	Option 2	5	147	228
		10	373	629
		20	418	
Footscray	Option 1	5	323	
		10	50	
	Option 2	5	309	
		10	50	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)												Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)					Unchanged (cont.)		
5	10	20	50	100	5	10	20	50	100			
					3							
1											1	
					3							
											1	
					1,009							
					1,009							
					54							
					54							
					856	596	1,139	3,067				
					856	596	1,139	3,067				
											138	
2											60	
											144	
2											77	
											194	
182											174	
135	230											
											147	
129											244	
188	230											
105											218	323
50												41
105											204	309
50												41

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Gisborne	Option 1	5	338	29
		10	342	14
		20	809	
		50	36	
	Option 2	5	340	29
		10	278	14
		20	877	
		50	113	
Gisborne South	Option 1	None		
		5	98	59
		10	43	61
		20	6	90
	Option 2	None		
		5	49	59
		10	13	61
		20	4	90
Gladstone Park	Option 1	None		
		5		668
	Option 2	None		
		5		668
Goldie	Option 1	5	9	
		10	10	
	Option 2	5	9	
		10	10	
Greensborough	Option 1	None		
		5		615
		10		950
	Option 2	None		
		5		615
		10		950

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
55											283	
134	204										4	
	220	589										
		20	16									
58											282	
179	98										1	
	184	693										
		57	56									
						10	11	49				
3						10	3	20			62	
8						1	1	7			26	
1	2	3										
						34	23	67				
						9	1	11			28	
3							1				9	
	1	3										
						53						
						423						
8											1	9
1	9											10
7											2	9
1	9											10
						409	727					
						494	642					

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Greenvale	Option 1	None		
		5		1,597
		10		118
		20	1	110
		50		103
	Option 2	None		
		5		1,597
		10	1	118
		20		110
		50		103
Harkness	Option 1	None		
		5		93
	Option 2	None		
		5		93
Heidelberg Heights	Option 1	None		
		5		81
	Option 2	None		
		5		81
Hesket	Option 1	5	9	
		10	7	
	Option 2	5	10	
Hillside	Option 1	None		
		5		1,815
		10		182
	Option 2	None		
		5		1,815
		10		182
Hurstbridge	Option 1	None		
		5		18
		10		15
	Option 2	20		13
		None		
		5		18
		10		15
	20		13	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					1,447	97	77	43	169			
1												
					1,447	97	77	43	169			
											1	
					93							
					24							
					128	4						
					100	4						
7										2	9	
4	3										3	
2										8	6	
					2,100	191						
					2,019	191						
					23	8	14					
					23	8	14					

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Kalkallo	Option 1	5	241	
		10	63	
		20	1	
	Option 2	5	271	
		10	8	
Kangaroo Ground	Option 1	None		
	Option 2	None		
Kealba	Option 1	5		318
		10		142
		20	111	86
		50	192	
		100	307	
		200	621	
	Option 2	5		318
		10		142
		20		86
		50	278	
		100	399	
		200	554	
Keilor	Option 1	5	15	274
		10	89	369
		20	424	471
		50	76	310
		100	58	99
		200	1,629	
	Option 2	5	4	274
		10	44	369
		20	331	471
		50	223	310
		100	97	99
		200	1,593	
Keilor Downs	Option 1	5	169	
		10	299	
		20	479	
		50	6	
	Option 2	5	127	
		10	243	
		20	478	
		50	158	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
205											36	12
25	38											
		1										
251											20	12
4	4											
						2						
						2						
		111										44
		1	191									
			6	301								
				621								
			278									44
			9	390								
				554								
14											1	15
	89											89
		424										272
			76									
				58								
				1,629								
4												4
	44											44
		331										298
			223									31
				97								
				1,593								
169												169
5	294											299
	1	478										475
			6									
121											6	127
14	229											243
		478										478
			158									148

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Keilor East	Option 1	None			
		5	334	391	
		10	223	710	
		20	586	1,274	
		50	833	826	
		100	1,327	1,582	
	Option 2	None			
		5	314	391	
		10	200	710	
		20	628	1,274	
		50	886	826	
		100	1,142	1,582	
	Keilor Lodge	Option 1	5	33	
			10	44	
20			3		
Option 2		5	44		
		10	42		
		20	19		
Keilor North	Option 1	None			
		5	4	1	
		10	6		
		20	4		
	Option 2	200		2	
		None			
		5	4	1	
		10	5		
		20	6		
		50	2		
Keilor Park	Option 1	20		85	
		50		416	
		100	394	584	
		200	691		
	Option 2	20		85	
		50		416	
		100	382	584	
		200	703		

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Kerrie	Option 1	10	1	
		20	1	
	Option 2	5	1	
		10	1	
Kew	Option 1	None		
		5		280
	Option 2	None		
		5		280
Kings Park	Option 1	None		
		5		792
	Option 2	5	647	792
		10	100	
Kingsville	Option 1	5	227	517
		10	305	267
		20	430	118
		50	450	
		100	283	
		200	17	
	Option 2	5	213	517
		10	298	267
		20	426	118
		50	433	
Kurunjang	Option 1	None		
		5	25	1,118
		10	2	66
		20	1	4
	Option 2	50		2
		None		
		5	162	1,118
		10	14	66
		20	2	4
		50		2

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Lalor	Option 1	None		
		5		151
		10		231
		20		855
		50		2,576
	Option 2	None		
		5		151
		10		231
		20		855
		50		2,576
Lancefield	Option 1	None		
		5	7	79
		10	3	6
		20		3
		50		
	Option 2	None		
		5	7	79
		10	3	6
		20		3
		50		
Laverton	Option 1	5	348	172
		10		84
	Option 2	5	369	172
		10		84
Lower Plenty	Option 1	None		
		5		377
		10		735
	Option 2	None		
		5		377
Macleod	Option 1	None		
		5		1,215
		10		890
	Option 2	None		
		5		1,215
		10		890

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Maidstone	Option 1	5	252	857	
		10	209	482	
		20	580	594	
		50	971	445	
		100	747		
		200	439		
	Option 2	5	230	857	
		10	210	482	
		20	580	594	
		50	928	445	
		100	646		
		200	577		
	Maribyrnong	Option 1	5	161	26
			10	128	1
20			77		
50			17		
Option 2		5	159	26	
		10	123	1	
		20	69		
		50	16		
Meadow Heights	Option 1	None			
		5		200	
		10		104	
		20		210	
		50		203	
	Option 2	100		852	
		None			
		5		200	
		10		104	
		20		210	
Melbourne	Option 1	50		203	
		100		852	
	Option 2	None			
Melbourne	Option 1	5		1,586	
		None			
Melbourne	Option 2	5		1,586	
		None			
Melbourne Airport	Option 1	200	1	1	
	Option 2	200	1	1	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Melton	Option 1	None		
		5	1	7
		10	1	4
		20		3
		50		1
	Option 2	None		
		5	3	7
		10	1	4
		20	1	3
		50		1
Melton West	Option 1	None		
		5	1	312
		10		6
	Option 2	None		
		5	5	312
		10		6
Mickleham	Option 1	None		
		5	191	1,928
		10	94	80
		20	120	65
		50	1,778	25
		100	17	
		200	49	
	Option 2	None		
		5	145	1,928
		10	71	80
		20	304	65
		50	1,591	25
		100	15	
		200	48	
Mill Park	Option 1	None		
		5		1,736
		10		3,066
		20		3,066
		50		2,577
	Option 2	None		
		5		1,736
		10		3,066
		20		3,066
		50		2,577

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Monegeetta	Option 1	5	1	2
		10	12	
		20	30	1
		50		4
		100		34
	Option 2	5	1	2
		10	12	
		20	30	1
		50		4
		100		34
Montmorency	Option 1	None		
		5		1,527
		10		160
	Option 2	None		
		5		1,527
		10		160
Mount Cottrell	Option 1	5	12	
	Option 2	5	13	
Mount Macedon	Option 1	5	34	
		10	13	
		20	2	
	Option 2	5	14	
		10	2	
Newham	Option 1	5	8	
	Option 2	5	9	
Newport	Option 1	5	818	697
		10	581	387
		20	1,421	19
		50	2,018	
		100	74	
	Option 2	5	876	697
		10	483	387
		20	1,441	19
		50	1,981	
		100	54	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					1							
	2						1			9		
	2									28		
					1							
	2						1			9		
	2									28		
					1,542	22						
					1,542	22						
10											2	6
11											2	7
34												17
3	10											1
		2										
9											5	2
	2											
8												8
9												9
455											363	9
284	297											
	294	1,127										
		379	1,639									
			74									
411											465	
161	320										2	
	288	1,153										
		329	1,652									
			54									

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Niddrie	Option 1	None		
		5	163	211
		10	301	1,202
	Option 2	20	813	
		None		
		5	151	211
		10	293	1,202
		20	829	
Oak Park	Option 1	5	243	132
		10	163	4
	Option 2	5	242	132
		10	201	4
		20	1	
Oaklands Junction	Option 1	20		9
		50	31	73
		100	35	6
		200	38	16
	Option 2	20		9
		50	32	73
		100	41	6
		200	31	16
Panton Hill	Option 1	None		
		5		12
	Option 2	None		
		5		12
Pascoe Vale	Option 1	5	568	664
		10	1,203	4,333
		20	3,937	
	Option 2	5	524	664
		10	1,058	4,333
		20	4,157	
Pascoe Vale South	Option 1	5	296	428
		10	636	747
		20	550	
	Option 2	5	272	428
		10	593	747
		20	632	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					4							
					20						143	
173					3						125	
41	765										7	
					5							
					19						132	
203					3						87	
60	765										4	
4											239	161
14											149	
43											199	199
201												
1												
7	5	16	3									
			15	19							1	
	4	3	4	27								
7	1	20	3			1						
			21	20								
		4	4	19	1	2					1	
					9							
					9							
97											471	471
1,203												
1,225	2,712											
23											501	501
1,057											1	1
1,104	3,053											
261											35	
636												
310	240											
254											18	
570	23											
137	495											

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Plenty	Option 1	None		
		5		32
		10		45
		20		151
		50		92
	Option 2	None		
		5		32
		10		45
		20		151
		50		92
Plumpton	Option 1	None		
		5		56
		10		8
		20	3	30
		100		1
	Option 2	200		2
		None		
		5	10	56
		10		8
		20	2	30
Port Melbourne	Option 1	50	1	
		100		1
		200		2
	Option 2	None		
		5	219	
		10	24	
Preston	Option 1	None		
		5	1,134	1,735
	10	1,109	1,158	
	Option 2	None		
5		1,202	1,735	
10		1,331	1,158	
		20	278	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					42	19	159	107				
					42	19	159	107				
					5	6	31		2			
		2								1		
					4	6	31		2			
										10		
		2										
										1		
					1							
66										153	219	
24											24	
					1							
64										157	221	
26											26	
					762	52						
					65	5				1,064		
420										689		
					469							
312					126					764	1	
863	22									446		
210	68											

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Rosanna	Option 1	None		
		5		164
	Option 2	None		
		5		164
Seaholme	Option 1	5	146	
		10	190	
		20	72	
	Option 2	5	146	
		10	195	
		20	67	
Seddon	Option 1	5	6	
	Option 2	5	4	
South Kingsville	Option 1	5		15
		10		317
		20	7	592
		50	306	60
		100	671	
	Option 2	5		15
		10		317
		20	10	592
		50	341	60
		100	633	
South Morang	Option 1	None		
		5		1,937
		10		180
		20		166
	Option 2	None		
		5		1,937
		10		180
		20		166
South Wharf	Option 1	None		
		5		28
	Option 2	None		
	5		28	
Southbank	Option 1	None		
		5		6,427
	Option 2	None		
	5		6,427	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)					Unchanged (cont.)	
5	10	20	50	100	5	10	20	50	100		
											183
											159
146											146
	190										190
		72									72
146											146
	195										195
		67									67
										6	6
										4	4
		7									
		37	269								
			502	169							
		10									
		34	307								
			569	64							
					2,035	54	98				
					2,035	54	98				
											28
											28
											7,426
											7,426

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Spotswood	Option 1	5		418
		10		477
		20	26	305
		50	793	12
		100	393	
	Option 2	5		418
		10		477
		20	31	305
		50	820	12
		100	361	
Springfield	Option 1	5	3	1
		10	9	
		20	3	
	Option 2	5	3	1
		10	9	
		20	3	
St Albans	Option 1	None		
		5	456	3,388
		10	602	2,363
		20	4,288	2,971
		50	3,623	
		100	466	
	Option 2	200	230	
		5	702	3,388
		10	1,279	2,363
		20	1,302	2,971
Strathmore	Option 1	5	370	462
		10	665	1,855
		20	1,666	
	Option 2	5	358	462
		10	628	1,855
		20	1,736	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
		26										
		37	756									
			173	220								
		31										
		32	788									
			157	204								
2											1	3
1	8											9
		3										3
2											1	3
1	8											9
		3										3
					666	8						
140					9						307	60
193	296										113	77
7	242	4,039										269
	10	2,862	751									
			12	454								
				230								
91											611	61
248	249										782	75
9	296	997										204
		3,078	4,000									98
			33	526								
				169								
201											169	53
638	2										25	
374	1,292											
175											183	49
592	9										27	6
231	1,505											

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Sunbury	Option 1	5	430	160
		10	344	182
		20	328	16
		50	305	
	Option 2	5	439	160
		10	356	182
		20	344	16
		50	313	
Sunshine	Option 1	5	59	1,007
		10	36	500
		20	23	168
		50	910	
		100	574	
		200	2,135	
	Option 2	5	61	1,007
		10	36	500
		20	22	168
		50	970	
		100	1,314	
		200	1,334	
Sunshine North	Option 1	10		347
		20	389	3,289
		50	365	355
		100	642	130
		200	2,725	
	Option 2	10	105	347
		20	361	3,289
		50	407	355
		100	1,030	130
		200	2,218	
Sunshine West	Option 1	5	1,501	566
		10	2,692	
		20	1,346	
		50	960	
	Option 2	5	1,889	566
		10	1,624	
		20	1,132	
		50	957	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
379					1						50	2
30	310				1	2					1	4
2	20	305			1							4
		18	287									
355						2					82	25
27	322					2					5	2
2	24	317				1						8
		15	298									
1											58	
32	3										1	
1		22										
			910									651
			1	573								162
				2,135								
2											59	
32	4											
		22										
			970									702
			1	1,313								111
				1,334								
57	89	20			102	35					86	
	19	121	225									
		65	577									
			2,725									
						101					4	
46	9	78			20	66					142	
		156	251									
			37	993								
				2,218								
751											750	588
660	1,988										44	579
	329	1,017										413
		30	930									786
972											917	616
690	808										126	250
1	289	842										406
		29	928									784

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Sydenham	Option 1	None		
		5		111
	Option 2	None		
		5		111
Tarneit	Option 1	5	3	52
	Option 2	5	5	52
Taylors Hill	Option 1	None		
		5		30
	Option 2	5	22	30
Taylors Lakes	Option 1	None		
		5	136	364
		10	154	14
		20	20	
	Option 2	None		
		5	142	364
		10	126	14
		20	100	
Templestowe	Option 1	None		
		5		618
		10		671
	Option 2	None		
		5		618
10		671		
Thomastown	Option 1	None		
		5		862
		10		1,233
		20		1,633
		50		930
	100		2,116	
	Option 2	None		
		5		862
		10		1,233
		20		1,633
50			930	
100		2,116		

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Toolern Vale	Option 1	None		
		5		20
		10	5	58
		20	6	65
		50		19
	Option 2	100		8
		None		
		5	1	20
		10	2	58
		20	8	65
Truganina	Option 1	50		19
		100		8
		None		
		5	453	291
		10	1	159
	Option 2	20		1
		None		
		5	435	291
		10	1	159
		20		1
Tullamarine	Option 1	5	355	1,029
		10	50	54
	Option 2	5	125	1,029
		10		54
Viewbank	Option 1	None		
		5		159
	Option 2	None		
Wallan	Option 1	5	19	
	Option 2	5	20	
Watsonia	Option 1	None		
		5		467
		10		1,266
	Option 2	None		
		5		467
		10		1,266

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					13	58	60	16	1			
								4	1			
								1	5			
					15	58	59	16	1			
							1					
							1	1				
							1	2	5			
									1			
					354	33	5					
										453		
						1						
					360	33	5					
										435		
						1						
										355		
										50		
										125		
					316	15						
					316	15						
14										5	17	
14										6	18	
					409	1,449						
					409	1,449						

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Watsonia North	Option 1	None		
		5		140
		10		55
	Option 2	None		
		5		140
		10		55
Wattle Glen	Option 1	None		
		5		41
		10		32
	Option 2	20		23
		None		
		5		41
		10		32
		20		23
West Footscray	Option 1	5	225	479
		10	259	537
		20	544	735
		50	574	2,569
		100	915	
		200	2,571	
	Option 2	5	223	479
		10	264	537
		20	522	735
		50	502	2,569
		100	822	
		200	2,745	
Westmeadows	Option 1	None		
		5		1,279
		10		201
		20		134
		50		128
	Option 2	100		472
		None		
		5		1,279
		10		201
		20		134
		50		128
		100		472

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					57	26						
					57	26						
					68	13	35					
					68	13	35					
17											208	166
136	41										82	155
14	396	134										13
	11	326	237									
		32	586	297								
				2,571								
10											213	162
98	42										124	161
2	393	127										1
	13	312	177									
		53	472	297								
				2,745								
					1,032	206	112	4	612			
					1,137	206	112	4	612			

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)		
			M3R (cont.)	No Build (cont.)	
Wildwood	Option 1	5		13	
		10	1	5	
		20	1	4	
		50	13	2	
		100	18		
		200	9	1	
	Option 2	5		13	
		10		5	
		20	2	4	
		50	4	2	
		100	23		
		200	13	1	
	Williamstown	Option 1	5	2,746	
			10	1,863	
20			295		
50			1		
Option 2		5	2,848		
		10	1,694		
		20	223		
		50	1		
Williamstown North	Option 1	10	329		
		20	346		
		50	1		
	Option 2	10	338		
		20	337		
		50	1		
Wollert	Option 1	None			
		5		398	
		10		473	
		20		907	
		50		729	
	Option 2	None			
		5		398	
		10		473	
		20		907	
		50		729	
Woodend	Option 1	5	1		
Woodstock	Option 1	None			
		5	5	4	
	Option 2	None			
		5	1	4	

Suburb (cont.)	Option (cont.)	N60 (cont.)	Estimated no. of dwellings (cont.)	
			M3R (cont.)	No Build (cont.)
Yallambie	Option 1	None		
		5		488
		10		784
	Option 2	20		16
		None		
		5		488
		10		784
		20		16
Yarrambat	Option 1	None		
		5		221
		10		3
	Option 2	20		5
		None		
		5		221
		10		3
		20		5
Yarraville	Option 1	5	748	463
		10	408	339
		20	771	585
		50	889	835
		100	877	
		200	897	
	Option 2	5	657	463
		10	533	339
		20	780	585
		50	937	835
		100	858	
		200	925	
Yuroke	Option 1	5	1	2
		10	2	
		20	2	
		50	3	
	Option 2	5	2	2
		10	1	
		20	3	
		50	2	

Change from No Build -estimated no. of dwellings (rows represent M3R N60) (cont.)											Unchanged (cont.)	Estimated no. of newly affected buildings (cont.)
Increase (cont.)					Decrease (cont.)							
5	10	20	50	100	5	10	20	50	100			
					414	853	42					
					414	853	42					
					218		5					
					218		5					
65											683	748
196	72										140	390
25	304	442										499
		373	516									95
			225	652								
				897								
											657	657
241	26										266	530
45	350	385										532
		374	563									113
			225	633								
				925								
1												1
1	1											1
		2										
			3									
2												1
1												1
		3										
			2									

C4.A.9**Estimated number of affected dwellings – M3R 2046 ANEC**

Suburb	ANEC	Estimated no. of dwellings	
		M3R	No Build
Attwood	None		
Avondale Heights	20	1206	
Broadmeadows	None		
Bulla	None		
	20	68	16
	25	38	12
	30	23	8
Campbellfield	None		
Coolaroo	None		
Dallas	None		
Diggers Rest	None		
Greenvale	None		
Kealba	20	165	
Keilor	20	629	1
	25	641	
	30	2	
Keilor East	20	1006	1
Keilor North	None		
Keilor Park	20	484	66
	25	22	
Meadow Heights	None		
Melbourne Airport	25	1	1
Mickleham	20	3	
Oaklands Junction	20	16	7
	25	6	10
	30	2	
Sunshine North	20	886	
Westmeadows	None		
Wildwood	20	14	

Change from No Build -estimated no. of dwellings (rows represent M3R ANEC)								
Increase				Decrease				Unchanged
<20	20	25	30	20	25	30	35	
				5				
1,206								
				204				
				3	8			
67								1
23	12							3
14		1						8
				81				
				127				
				799				
				16	7			
				1				
165								
628								1
641								
2								
1,005								1
				1				
440								44
	22							
				59				
								1
3								
7					7			2
	5							1
		2						
886								
				34				
14								

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