EXHIBIT A

AIRSERVICES AUSTRALIA – AIRCRAFT IN YOUR NEIGHBOURHOOD
(https://aircraftnoise.airservicesaustralia.com/2020/11/19/explore-detailed-data-for-your-area/)

Before Runway 30 RNP-AR

After Runway 30 RNP-AR

EXHIBIT B

HOBART AIRSPACE DESIGN REVIEW – POST IMPLEMENTATION REVIEW – 4 APRIL 2022

(https://engage.airservicesaustralia.com/46094/widgets/319381/documents/229280)

Refer to highlighted sections on pages 61, 64, 79 and 80 (Appendix A – Review of EA for Changes to SIDS and STARS). The highlighted sections show that Airservices Australia under-estimated the noise impact of both Runway 30 RNP-AR and Runaway 30 RNAV.

APPENDIX A - REVIEW OF EA FOR CHANGES TO SIDS AND STARS

The final airspace design was addressed in the *Environmental Assessment of the Proposed Changes to SIDs and STARs at Hobart Airport (EA-1407)* (Addendum version 2.3, effective date 28 March 2019) and implemented in early November 2019.

The PIR of the EA for the changes to SIDs and STARs provides:

- a review of the technical assumptions used to develop the noise modelling for use in the EA
- detailed analysis of each flight path of the final implemented changes against assumptions of the EA
- the results of noise monitoring activities undertaken in community areas surrounding Hobart Airport
- an analysis of aircraft operations and noise levels post flight path changes against environmental criteria used for the original EA
- discussion on environmental impacts.

A.1 Review Methodology

A.1.1 Data Sources

Airservices maintains a Noise and Flight Path Monitoring System (NFPMS). The NFPMS contains flight track and aircraft operational information from the Airservices radar systems and, where available, correlates the flight track data with permanent or temporary noise monitors that are located in the airport surrounds. The PIR has used NFPMS data for Hobart Airport.

A.1.2 Noise Modelling

Noise modelling has been produced with the US Federal Aviation Administration's Aviation Environmental Design Tool[9] (AEDT) software. The AEDT is used to model aircraft performance in space and time to estimate aircraft noise consequences on the ground.

The Airservices National Operating Standard *AA-ENV-NOS-2.100 Environmental management of aircraft operations* applies 'Number-Above' noise modelling (number of events experienced above a defined noise level) to assess aircraft noise exposure. Consistent with the Commonwealth's discussion paper on *Expanding Ways to Describe and Assess Aircraft Noise*[10], the *National Airports Safeguarding Framework Guideline A - Measures for Managing Impacts of Aircraft Noise*[11], and the *Standards Australia Handbook SA HB 149:2016 Acoustics - Guidance on producing information on aircraft noise*, the metrics commonly used in Australia and by Airservices are N60 and N70 contours. N70 refers to the number (N) of aircraft noise events exceeding 70 decibels (dBA[12]), which generally equates to an internal noise level of 60 dBA (with windows open) and is considered to be the level at which activities such as conversation and watching television can be disturbed. N60 is typically used for consideration of night-time noise, as an outside noise level of 60 dBA generally equates to an internal noise level of 50 dBA (with windows open) which is considered to be close to the point at which the noise may cause awakening.

[9] https://aedt.faa.gov/

[10] https://www.infrastructure.gov.au/media-centre/publications/expanding-ways-describe-and-assess-aircraft-noise-discussion-paper

[11] https://www.infrastructure.gov.au/aviation/environmental/airport_safeguarding/nasf/

[12] Sound is measured on a logarithmic scale using decibels (dB). When sound is measured by acoustic equipment, a correction factor is applied to reflect the sensitivity of the human ear. This factor is referred to as being A-weight corrected and is indicated by dBA.

Figure 33: Primrose Sands Noise Monitoring Terminal (NMT) *(Source: NFPMS)*

The comparison between the NMT data and the EA forecasts are shown in Table 19.

The number of PIR noise events above 60 dBA and 70 dBA were greater for both the summer and winter periods than what was estimated in the EA.

The average total movements per day closely matches the measured N60 events, indicating that all arrival traffic over this area reach noise levels of at least 60 dBA.

The EA modelling for Primrose Sands did not indicate noise levels above 70 dBA, however the NMT recorded an average of 2.7 daily events for the PIR Summer period and an average of 4.5 daily events during the PIR Winter period. This is the result of a range of factors, including changes in aircraft fleet mix as a result of COVID-19 impacts, noise event variation (described in Section A.8.1) particularly for aircraft that have a modelled noise level just under 70 dBA, and community and environment noise sources being included in some noise measurements.

The number of daily N60 and N70 daily noise events are shown in Figure 34 and Figure 35. The total number of N60 events in a day ranged from none (when RWY30 was not in use) to 30 events. N70 events ranged from none to 12 daily events. Figure 36 shows the average N60 and N70 events by hour of day.

Table 19: Primrose Sands noise monitoring summary

	Summer		Winter	
	EA (modelled)	PIR (measured)	EA (modelled)	PIR (measured)
Avg. total movements per day (RWY30 arrivals only)	7	8.9	11	15.3
N60 average daily noise events	6 to 7	8.8	10 to 11	15.2
N70 average daily noise events	0	2.7	0	4.5

The number of measured noise events above 60 dBA was greater than estimated in the EA for both the summer and winter periods. The EA modelling for Connellys Marsh did not indicate noise levels above 70 dBA, however the NMT recorded an average of 0.1 N70 events per day during the PIR Summer period.

The number of N60 and N70 daily noise events are shown in Figure 38 and Figure 39. The number of daily events above 60 dBA ranged from none to 16. There was a total of 12 individual N70 events during the six month PIR period. Figure 40 shows the average N60 and N70 events by hour of day.

Table 20: Connellys Marsh noise monitoring summary

	Summer		Winter	
	EA (modelled)	PIR (measured)	EA (modelled)	PIR (measured)
Avg. total movements per day	29	11.9	22	9.0
N60 daily noise events	2 to 3	4.9	0	2.7
N70 daily noise events	0	0.1	0	0.0

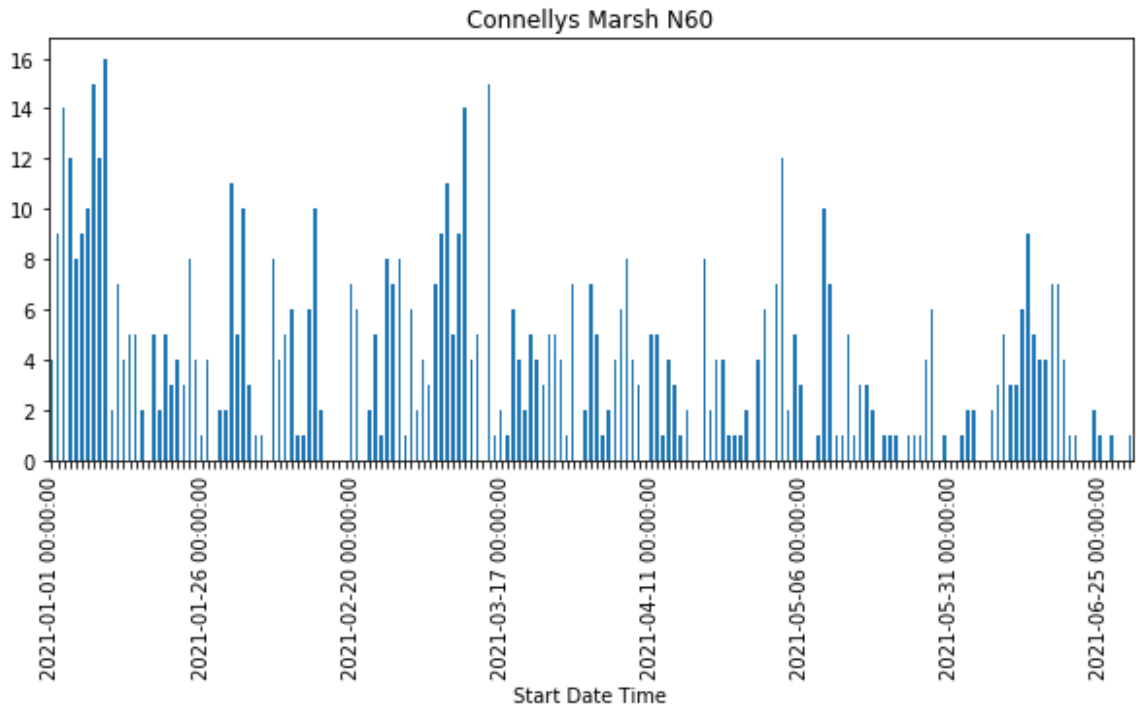

Figure 38: Connellys Marsh NMT – Daily N60 Noise Events *(Source: NFPMS)*

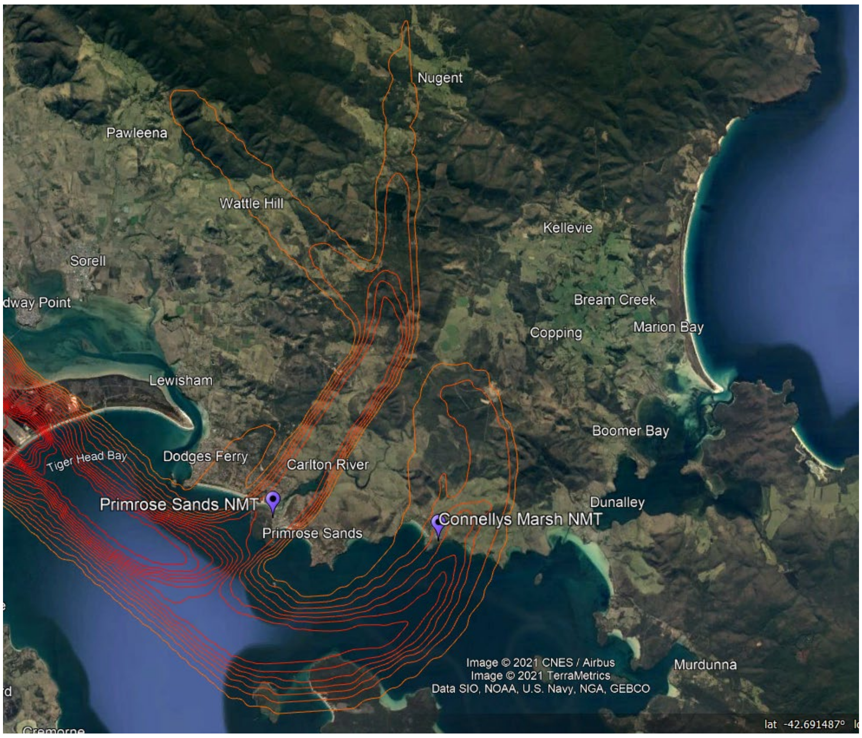

Figure 50: PIR Summer N60 – eastern communities (*Source: AEDT*)

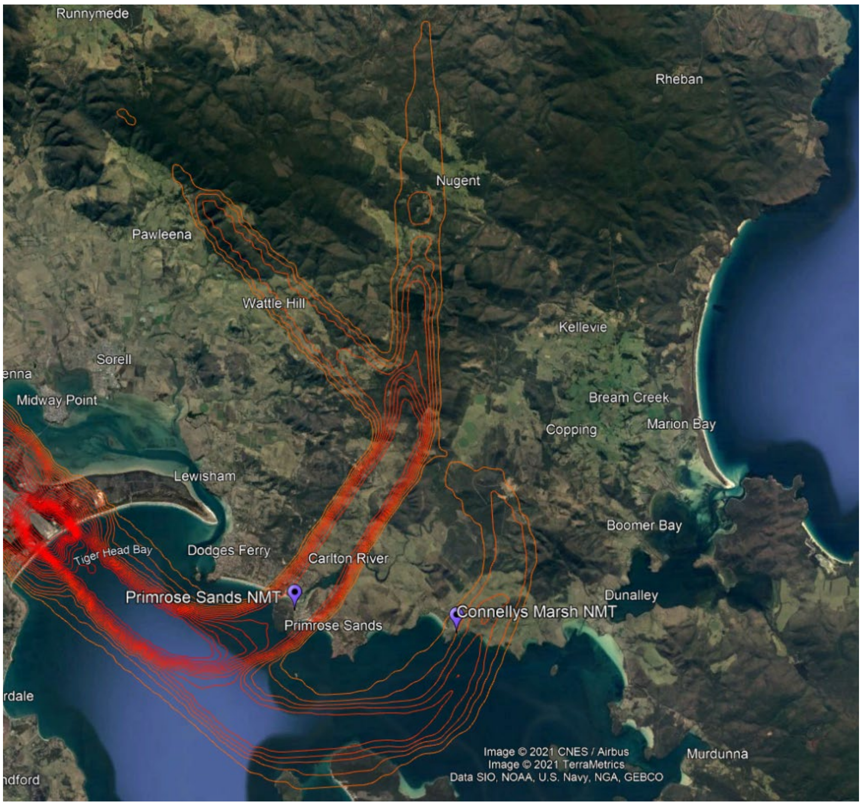

Figure 51: PIR Winter N60 – eastern communities (*Source: AEDT*)

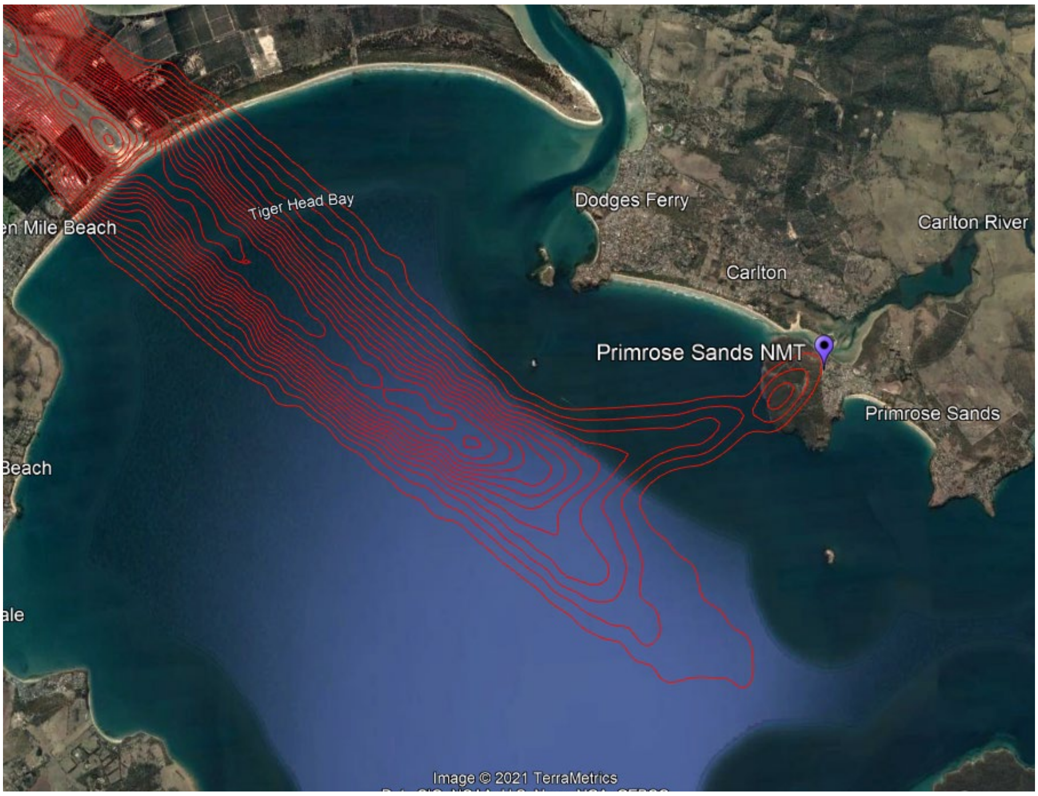

Figure 52: PIR Summer N70 – eastern communities (*Source: AEDT*)

Figure 53: PIR Winter N70 - eastern communities (*Source: AEDT*)

Recommended Action 1

For future noise modelling, rather than selecting a representative busy day for summer and winter, Airservices will identify a busy week that is representative of the variable weather and operational conditions across each analysis period.

Flight paths and altitude

Aircraft are tracking in accordance with the published SIDs and STARs.

Flight path use differed between the EA and PIR due to the EA modelling being based on runway use for a representative summer and winter day and RWY12 movements not being modelled for the winter period. In addition, flight path use was affected by the varied movements numbers and changes in aircraft fleet mix as a result of COVID-19 impacts.

Arriving aircraft are generally operating at the altitudes expected, while departures are generally operating at higher altitudes than expected in the EA.

The PIR findings have been used to develop an updated AEDT model and improve the noise modelling.

Night movements

The EA reported an average of 5 daily movements during night hours (between 11pm to 6am) operating at Hobart Airport from January to June 2018. The PIR period had an average of 1.1 daily movements during night hours, with 3 night movements on a typical busy day (90th percentile). Night movements represent 2.1% of all flights during the PIR period.

Short-term noise monitoring

To support the PIR analysis, short-term noise monitors were located at Richmond, Primrose Sands and Connellys Marsh for a period of six months.

Noise events above 60 dBA were higher than estimated in the EA for Primrose Sands and Connellys Marsh, and lower than estimated for Richmond. This reflects the differences in modelled and actual runway and flight path use, with use of the RWY30 RNP-AR STAR higher than expected due to aircraft fleet mix changes in response to COVID-19 impacts and higher use of the fixed visual approach. In addition, RWY12 arrivals and departures were not modelled for the EA Winter period due to the use of a representative winter busy day that did not reflect the variable conditions that occurred over the PIR period. The PIR found:

- Primrose Sands recorded a greater number of events above 60 dBA than what was estimated in the EA. There was an average of 8.8 daily events during the PIR Summer period compared to 6-7 daily events modelled for the EA Summer period, and 15.2 daily events during the PIR Winter period compared to 10-11 daily events modelled for the EA Winter period. The average total movements per day at Primrose Sands closely matches the measured events above 60 dBA, indicating that all aircraft traffic over this area reaches noise levels of at least 60 dBA
- Connellys Marsh recorded higher measured noise events than what was estimated in the EA. Approximately one-third of all movements over Connellys Marsh were above 60 dBA. There was average of 4.9 daily events above 60 dBA during the PIR Summer period compared to 2-3 daily events modelled in the EA, and an average 2.7 daily events during the PIR Winter period with no daily events modelled in the EA
- Richmond recorded a lower number of measured noise events than what was estimated in the EA, with an average of 17.9 daily events above 60 dBA for the PIR Summer period and an average of 21.4 daily events for the PIR Winter period. In comparison, there were 28-29 events modelled for the EA Summer period and 30-31 daily events modelled for the EA Winter period.

The EA modelling did not indicate noise levels above 70 dBA, however noise events were recorded by all three monitors. The noise events above 70 dBA are the result of a range of factors, including:

- changes in aircraft fleet mix as a result of COVID-19 impacts

- noise event variation (to get an average noise level there will be some events above and below that level) particularly for aircraft that have a modelled noise level just under 70 dBA
- community and environment noise sources being included in some noise measurements.

The PIR found:

- Primrose Sands recorded an average of 2.7 daily events above 70 dBA for the PIR Summer and an average of 4.5 daily events during the PIR Winter period
- Connellys Marsh recorded a total of 12 individual events above 70 dBA during the six month PIR period
- Richmond recorded an average of 0.5 daily events above 70 dBA for the PIR Summer and an average of 0.7 daily events during the PIR Winter period.

PIR noise modelling

The AEDT modelling software has been calibrated with the short-term noise monitoring data and revised N60 and N70 contours were produced for the PIR period. The updated noise modelling is achieving a closer correlation with actual measured results but is still conservatively predicting a greater number of N60 and N70 daily noise events than what was captured by the short-term noise monitors. The PIR Model reflects aircraft operations impacted by COVID-19 travel restrictions and may not be representative of operations once travel restrictions are lifted.

Recommended Action 11

Airservices will review available noise modelling software tools for consideration of water bodies in terrain models to better account for noise reflection over water sources when noise monitoring data is not available to calibrate the noise model.

Summary

Overall, the EA correctly identified and considered the communities that were to be affected by the flight path changes.

There were differences with the EA modelling and actual PIR operations due to the selection of a representative summer and winter busy day as the basis of modelling, which did not reflect the variable weather conditions (and therefore runway use) that occurred over the PIR assessment period.

In addition, flight path use was affected by the varied movements numbers and changes in aircraft fleet mix as a result of the COVID-19 impacts on air travel. In particular, there was higher than expected use of the RWY30 RNP-AR STAR (including fixed visual approach) due partly to the unanticipated change in commercial aircraft types being operated, as well as an increased uptake of RNP-AR technology and a higher focus on fuel burn and emissions by aircraft operators.

EXHIBIT C

AIRSERVICES AUSTRALIA NOISE MONITORING @ PRIMROSE SANDS 2020-12-18 TILL 2021-06-30

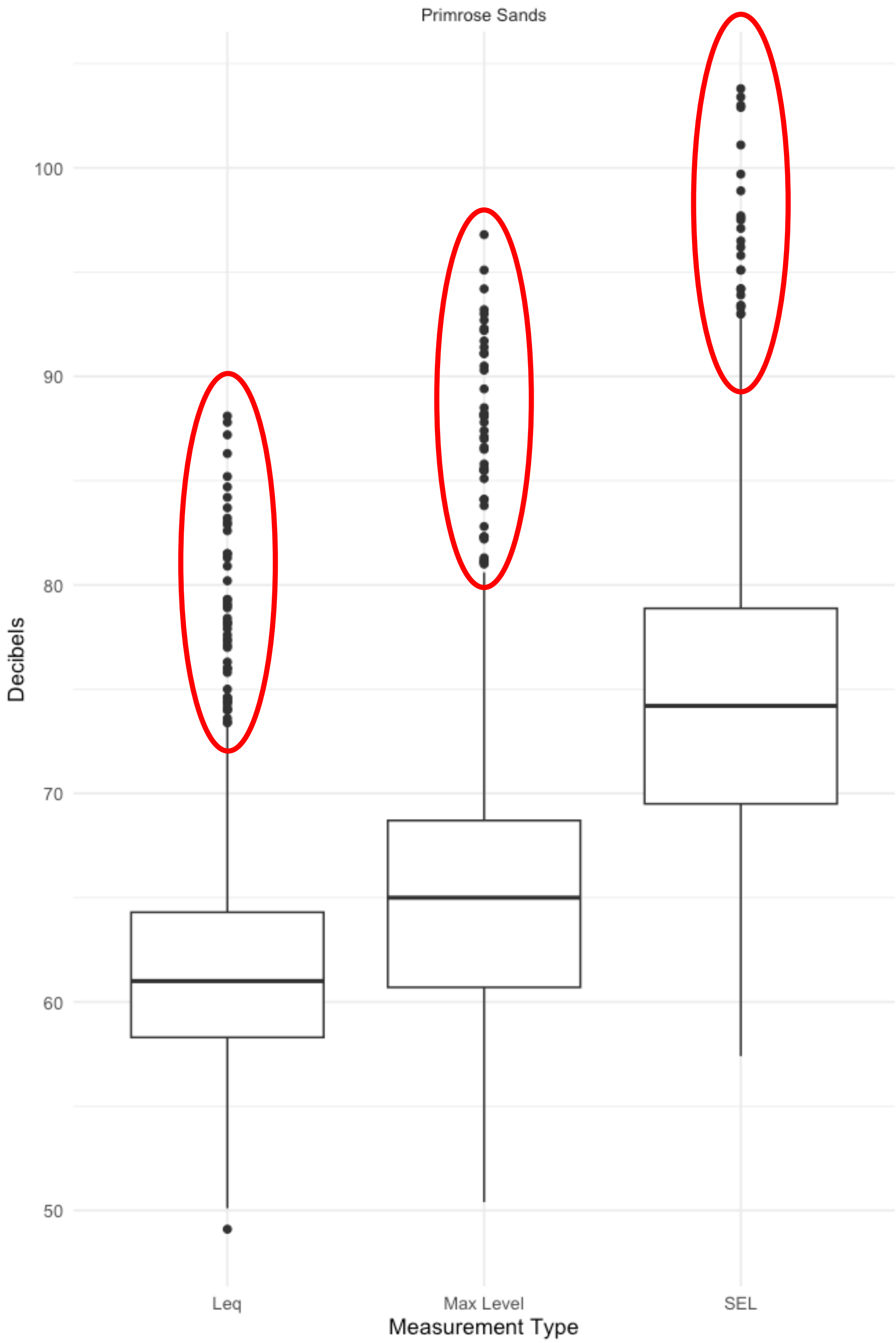

EXHIBIT D

WORLD HEALTH ORGANISATION RECOMMENDED AIRCRAFT NOISE EXPOSURE LIMITS

(https://cdn.who.int/media/docs/default-source/who-compendium-on-health-and-environment/who_compendium_noise_01042022.pdf)

Refer to highlighted sections on pages 2,3 and 4.

Compendium of WHO and other UN guidance on health and environment

2022 update

World Health Organization

Chapter 11. Environmental noise

UNDP

UN environment programme

unicef for every child

WHO/HEP/ECH/EHD/22.01

Suggested citation. Environmental noise. In: Compendium of WHO and other UN guidance on health and environment, 2022 update. Geneva: World Health Organization; 2022 (WHO/HEP/ECH/EHD/22.01). Licence: CC BY-NC-SA 3.0 IGO.

11. Environmental noise

This section addresses exposure of the general population to environmental noise, such as noise from various forms of traffic or industry. It includes amplified music in the framework of leisure activities as well. It does not specifically include occupational noise exposure. Occupational risks, including noise exposure, are covered in section 11.3 on workplaces.

Overview

In 2011, an estimated one million healthy life years were lost from traffic-related noise in the western part of Europe only *(1)*. Important sources for environmental noise exposure are road, railway and air traffic, or building sites. Noise exposure can also occur through other sources such as wind turbines, and leisure activities such as listening to loud music or other audio content including participation in e-sports (video and computer game competitions). Excessive noise can cause annoyance; in addition research shows it increases the risk for IHD and hypertension, sleep disturbance, hearing impairment, tinnitus and cognitive impairment, with increasing evidence for other health impacts such as adverse birth outcomes and mental health problems *(2)*.

What is the proportion of people impacted by environmental noise in my country?	The noise indicators below are taken from guidelines that were developed for the WHO European Region. In terms of their health implications, the recommended exposure levels can be considered applicable in other regions and suitable for a global audience *(2)*. Noise indicators are based on the European Union Directive 2002/49/EC *(3)* in the European Region. • L_{den} is an average sound pressure level over all days, evenings and nights in a year. • L_{night} is the equivalent continuous sound pressure level when the reference time interval is the night. • $L_{Aeq,T}$ is the A-weighted (a frequency weighting to better reflect the human ear), equivalent continuous sound pressure level during a stated time interval starting at t_1 and ending at t_2, expressed in decibels (dB), at a given point in space. The first two indicators are used particularly for noise monitoring and exposure assessment. The third is used for measuring leisure noise exposure. For more information on these and other noise indicators consult the *Environmental noise guidelines for the European Region (2)*. These noise indicators can be converted to other indicators used in other settings *(4)*.
What is the proportion of people impacted by environmental noise in my country?	Several countries use surveys to assess the perception of noise in the general population. The last European Quality of Life survey, carried out 2016–2017, found that 32% of more than 30 000 participants across Europe reported problems with noise in the immediate neighbourhood of their home *(5)*.

What are the levels of noise exposure we want to achieve?

Based on the systematic review of evidence available at the time of the development of the environmental noise guidelines *(2)*, the following recommended levels for specific noise sources can be defined.

For average noise exposure, the following sound pressure levels are recommended *(2, 6)*:

- < 53 dB L_{den} for road traffic noise
- < 54 dB L_{den} for railway noise
- < 45 dB L_{den} for aircraft noise
- < 45 dB L_{den} for wind turbine noise
- yearly average from all leisure source noises combined to ≤ 70 dB $L_{Aeq, 24h}$
- weekly average from leisure sources (such as personal listening devices [1]) ≤ 80 dB(A) or 1.6 Pa^2h
- short-term average from occasional exposure to leisure source noise ≤ 100 dB $L_{Aeq, 15min}$.

For **night noise exposure**, the following sound pressure levels are recommended *(2)*:

- < 45 dB L_{night} for road traffic noise
- < 44 dB L_{night} for railway noise
- < 40 dB L_{night} for aircraft noise.

Different categories of noise mitigation interventions along a continuum from source reduction to behaviour change can be defined. Interventions in the guidance section below are marked with A–E as defined hereafter *(2)*.

A. Source intervention:
   - change in emission levels of sources
   - time restrictions on source operators.

B. Path intervention:
   - change in the path between source and receiver
   - path control through insulation of receiver/receiver's dwelling

C. New/closed infrastructure:
   - opening of a new infrastructure noise source
   - closure of an existing one
   - planning controls between (new) receivers and sources.

D. Other physical intervention:
   - change in other physical dimensions of dwelling/neighbourhood.

E. Behaviour change intervention:
   - change in individual behaviour to reduce exposure
   - avoidance of exposure or reduced duration of exposure
   - community education and communication.

[1] A personal listening or audio device is a portable device designed to be worn on the body or in a pocket. It is designed to allow the user to listen to various forms of media.

Guidance	Sector principally involved in planning/ implementation	Level of implementation	Instruments
Road traffic noise: policies and actions			
Recommended actions are available for specific noise sources and do not cover all potentially important noise exposures.			
1. Improve the choice of appropriate tyres and road surface (A) *(2)*.	Transport Land use planning	National; community	Regulation; infrastructure, technology and built environment
2. Reduce traffic flow and restrict truck traffic (A) *(2)*.	Transport Land use planning	National; community	Regulation; taxes and subsidies; infrastructure, technology and built environment
3. Insulate dwellings, construct barriers (B) *(2)*.	Housing Land use planning	National; community	Regulation; taxes and subsidies; infrastructure, technology and built environment
4. Construct road tunnels (C) *(2)*.	Transport Land use planning	National; community	Infrastructure, technology and built environment
5. Design/make available a "quiet side" in the dwelling; create nearby green space (D) *(2)*.	Housing Land use planning	National; community	Infrastructure, technology and built environment
Railway noise: policies and actions			
6. Apply rail grinding procedures to remove deformations and corrosions on railway tracks (A) *(2)*.	Transport	National; community	Infrastructure, technology and built environment
Railway noise: awareness raising and capacity building			
7. Inform the community about interventions being implemented to potentially reduce noise annoyance (E) *(2)*.	Health Environment Transport	Community Universal health coverage	Information, education and communication
Aircraft noise: policies and action			
8. Adapt opening and closing of runways (C) *(2)*.	Transport	National; community	Regulation; other management and control

Guidance	Sector principally involved in planning/ implementation	Level of implementation	Instruments
9. Rearrange flight paths (C) *(2)*.	Transport	National; community	Regulation; other management and control
Leisure noise: policies and actions			
10. Implement sound exposure monitoring (volume level and time spent listening) in all personal listening devices to allow for self-control with reference to a standard. In every listening device, the user should be allowed to select two different operational modes of reference exposure *(6)*, and track the percentage of exposure used vs the reference exposure for every seven days. The two operational modes include the following. • Mode 1: WHO standard level for adults • Mode 2: WHO standard level for sensitive users (e.g. children).	Health Sports and leisure	National	Regulation; infrastructure, technology and built environment
11. Implement options for volume limitation and parental volume control in every device *(6)*.	Sports and leisure	National	Regulation; infrastructure, technology and built environment
12. Enact and enforce legislation/regulations/policies for limiting sound levels and exposure in entertainment venues and events such as clubs, bars, fitness centres, concerts, etc.*(3, 7)*. Legislation should focus on: • limiting sounds to 100 dB(A) averaged over 15 minutes; • conducting regular sound monitoring to ensure and document compliance; • optimizing venue acoustics and sound system design to ascertain optimal listening conditions for all audience members in the venue/event; • create quiet zones allowing audience members to rest; • ensuring provision of hearing protection (earplugs); • ensuring provision of training on noise reduction strategies and information about noise.	Sports and leisure	National	Regulation
Leisure noise: awareness raising and capacity building			
13. Provide information on personal sound exposure to the user of personal listening devices through the device interface or other means *(6)*.	Health Sports and leisure	National	Information, education and communication
14. Provide personalized recommendations and cues for action for safe listening through personal listening devices, customized to a user's listening profile through the device interface or other means *(6)*.	Health Sports and leisure	National	Information, education and communication
15. Provide instructions on how to use safe listening features on the specific device through the device interface or other means *(6)*.	Health Sports and leisure	National	Information, education and communication

Guidance	Sector principally involved in planning/ implementation	Level of implementation	Instruments
16. Provide general information on safe listening and ways to practise it through the device interface or other means *(6)*.	Health Sports and leisure	National	Information, education and communication

Selected tools
WHO 2021: WHO is developing a global standard for safe listening entertainment venues *(7)* This guidance will promote safe listening among attendees of entertainment venues to mitigate their risk of hearing loss.
WHO Regional Office for Europe 2018: *Environmental noise guidelines for the European Region (2)* Results of the noise guidelines are also available as an executive summary in different languages.
WHO/ITU 2019: *Safe listening devices and systems – a WHO-ITU standard (6)* This document outlines the key features and requirements that personal audio systems must have in order to facilitate safe listening practices among users.
WHO 2015: *Make listening safe (8)* This webpage provides access to advocacy material around safe listening such as infographic, poster, banner and brochure.
WHO/ITU 2019: *Toolkit for safe listening devices and systems (9)* This toolkit provides practical guidance to support countries, industry partners and civil society groups in the use and implementation of the global standard on safe listening devices and systems (ITU-T H.870) *(10)*.
WHO Regional Office for Europe 2012: *Methodological guidance for estimating the burden of disease from environmental noise (11)*
WHO Regional Office for Europe 2011: *Burden of disease from environmental noise. Quantification of healthy life years lost in Europe (1)*
WHO Regional Office for Europe 2009: *Night noise guidelines for Europe (12)*

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World Health Organization
Department of Environment, Climate Change and Health
Division of Universal Health Coverage / Healthier Populations
20, Avenue Appia
CH-1211 Geneva 27
Switzerland

www.who.int/teams/environment-climate-change-and-health

EXHIBIT E

ARTICLE PUBLISHED IN THE HOBART MERCURY 2 AUGUST 2024

Lots of noise over airport

Primrose Sands resident makes 1475 complaints

David Killick

A plane takes off from Hobart Airport

A single resident of Primrose Sands is responsible for 94 per cent of the complaints about aircraft noise from Hobart Airport.

The unidentified person made 1475 complaints to Airservices Australia in 2023-24 – an average of four per day.

All up there were 1553 complaints about Hobart aircraft movements, from 31 people. The next highest number of complaints came from a Carlton resident who lodged 16 complaints.

Just five people nationwide are responsible for more than 30,000 of the 51,000 complaints about aircraft noise each year.

They include a Perth, Western Australia, man who filed 21,716 complaints – an average of 60 a day – or about one for every seventh plane leaving the busy airport.

An Airservices Australia spokesman said the organisation was always keen to take on board people's views.

"Airservices has conducted significant engagement with the Hobart community on changes to flight paths which were implemented in 2019, including on measures to reduce and share the impact of aircraft noise," he said.

"Our Post Implementation Review completed in April 2022 identified several suggested improvements from the community and industry and builds on the extensive engagement completed for the airspace design review which commenced in 2018. We are currently trialling a Noise Abatement Procedure (NAP) for arrivals to Runway 30 which aims to better share noise from aircraft arrivals.

"The trial commenced on 13 June 2024 and will be in effect for six months after which we will complete an assessment to determine if the NAP will be permanently implemented following the trial.

"Airservices will be holding in-person consultation sessions in early September to engage on the other recommended actions from the PIR as well as improvements identified by our regulator, the Civil Aviation Safety Authority."

A Hobart airport spokeswoman said Airservices Australia was responsible for airspace design and management.

"Hobart Airport continues to advocate for improved community engagement about aircraft movements and noise," she said.

"Noise reduction continues to be a feature of the next generation aircraft that many airlines are now investing in.

"Most recently, we were thrilled to welcome the new Qantas Link A220 aircraft to Hobart, which has a 50 per cent noise footprint reduction compared with previous generations of aircraft."

EXHIBIT F

CARLTON RIVER, PRIMROSE SANDS AND FORCETT FLIGHT OPPONENTS FACEBOOK GROUP
(https://www.facebook.com/groups/427195124876474)

RUNWAY 30 COMMUNITY SURVEY - RESPONSES
(https://form.typeform.com/to/dKHnBhGS)

PETITION: CHANGE RUNWAY 30: SAVE OUR COMMUNITIES
(https://www.change.org/p/change-runway-30-save-our-communities)

Carlton River, Primrose Sands & Forcett Flight Path Opponents

Private group · 168 members

+ Invite | Share | Joined

About | Discussion | Featured | Members | Events | Media | Files

About this group

Private
Only members can see who's in the group and what they post.

Visible
Anyone can find this group.

History
Group created on November 28, 2019. Name last changed on September 20, 2022. **See more**

Members · 168

2.2 Survey administration and data analysis

The survey was administered using a commercial platform called "Typeform". Access to the survey was facilitated through a public URL link. While publicly shared links pose a risk of allowing individuals to complete the survey multiple times, potentially skewing the results, the chosen platform incorporates advanced security measures. These measures are designed to detect and prevent any attempts to bias the survey outcomes through repeated participation.

The URL link was shared via word-of-mouth, and flyers were delivered to households directly under the Runway 30 RNP-AR flight path. Flyers were also put up at local stores, and the link was shared through social media platforms, via the local council notice board, and by email. The survey was open for four weeks, from 20 February 2024 to 19 March 2024. The survey attracted more responses from individuals adversely affected by aircraft noise, introducing some response bias.

Survey responses were downloaded as a comma-separated variable file and read into a software package called "R" for data analysis. The analysis involved generating statistical plots and use of generative AI routines to summarise free-text responses. For the sake of transparency, the R code used in the analysis is listed in Appendix B.

3 Survey results

Figure 1 breaks down survey completions over time. Most of the survey responses were collected early on. Efforts to manipulate survey outcomes by submitting multiple entries were identified, with only the initial response considered for analysis. Of the 155 responses collected, 152 were deemed valid and included in the final analysis.

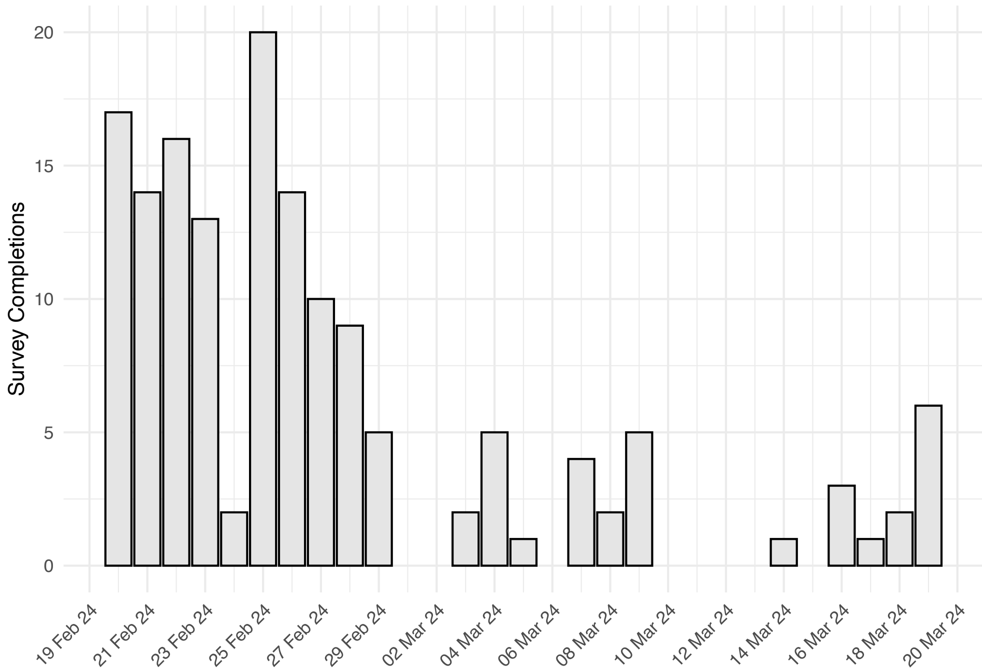

Figure 1: Survey completion rate.

Change Runway 30: Save Our Communities

Started 6 September 2022
Petition to Catherine King (Shadow Minister for Infrastructure, Transport and Regional Development) and 1 other

658 Signatures
1,000 Next goal
Support now

Sign this petition

First name

Last name

Email

Melbourne, 3165
Australia

Display my name and comment on this petition

Sign this petition

Why this petition matters

Started by Lisa S

Change Runway 30: Save Our Communities of Primrose Sands, Forcett, Carlton and Carlton River

EXHIBIT G

HOBART AIRPORT MASTER PLAN 2022 – AIR TRAFFIC FORECASTS

(https://hobartairport.com.au/wp-content/uploads/2023/05/26042023_Hobart-Airport-Master-Plan-2022-Final-compressed.pdf)

Refer to Tables 5.1 and 5.2 on page 45 (an excerpt from the master plan provided below). Hobart Airport anticipates passenger numbers will grow 96% from 2.9M to 5.5M passengers per year. They expect 11 aircraft arrivals per hour during busy periods.

05 Air traffic forecasts

5.1 Existing context

Existing passenger numbers and aircraft movements

Since 2015, the number of airport passengers increased from 2.2 million passengers annually to 2.7 million in 2019, as shown in **Figure 5.1**. This growth rate of 5.6% p.a. exceeded the 2015 Master Plan passenger forecast by approximately 100,000 passengers.

As a result of COVID-19, 2.0 million passengers were recorded in 2020. This further decreased in 2021 to 1.0 million, bringing the passenger decline to 65% compared to the forecast prior to COVID-19. **Figure 5.2** shows that most passengers through Hobart Airport originated from interstate travel (i.e. Sydney).

Passengers at Hobart Airport have a balanced mix of travel purposes, comprising business, holiday and travel to visit family and friends. The travel types are relatively resistant to external market shocks.

Since 2015, Hobart Airport has increased flight frequency, added more routes and more carriers. The annual number of aircraft movements has increased from 16,789 to 19,095 aircraft p.a. The regular transport routes are shown in **Figure 5.3**.

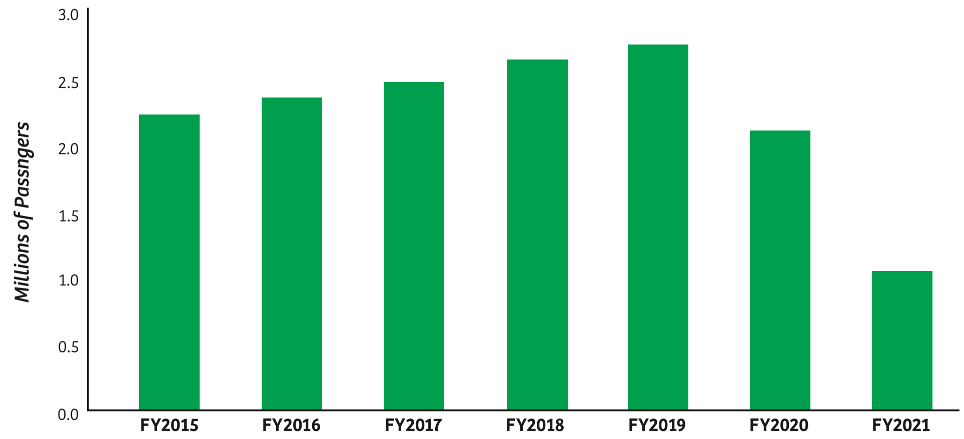

Figure 5.1: Historical annual passengers at Hobart Airport (FY2015-2021)

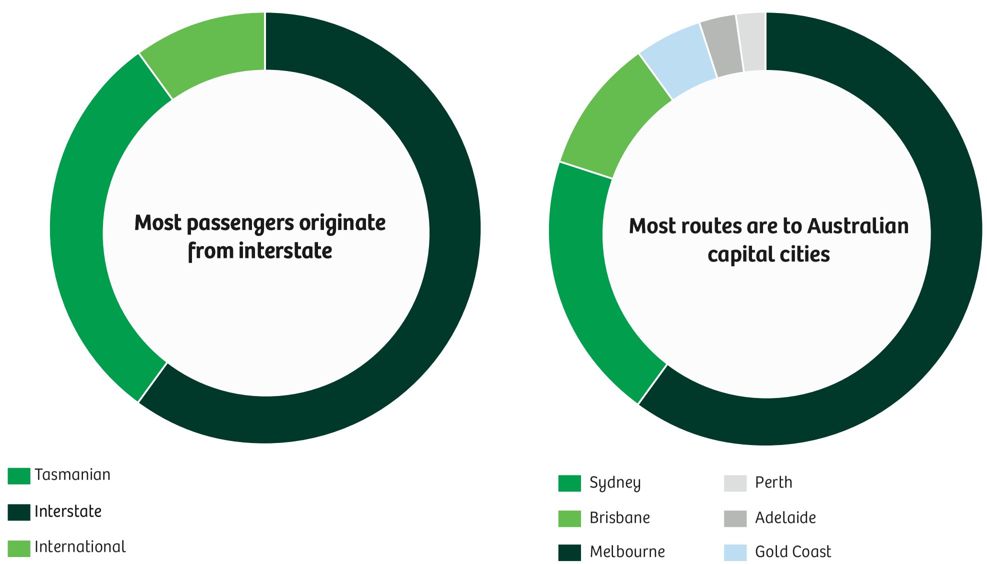

Figure 5.2: Passenger origins and route composition % (2018)

The main changes to the flight schedule since the 2015 Master Plan include:

- 2016 Qantas increased services from 35 to 46 per week
- 2017 Jetstar added a new direct service between Hobart and Adelaide
- 2018 Virgin Australia added a new direct service between Hobart and Perth
- 2020 Qantas and Link Airways added a new direct service between Hobart and Canberra
- 2021 Jetstar added a new direct service between Hobart and Gold Coast
- 2021 Air New Zealand added a new direct service between Hobart and Auckland
- Overall increased frequency to Sydney, Melbourne and Brisbane

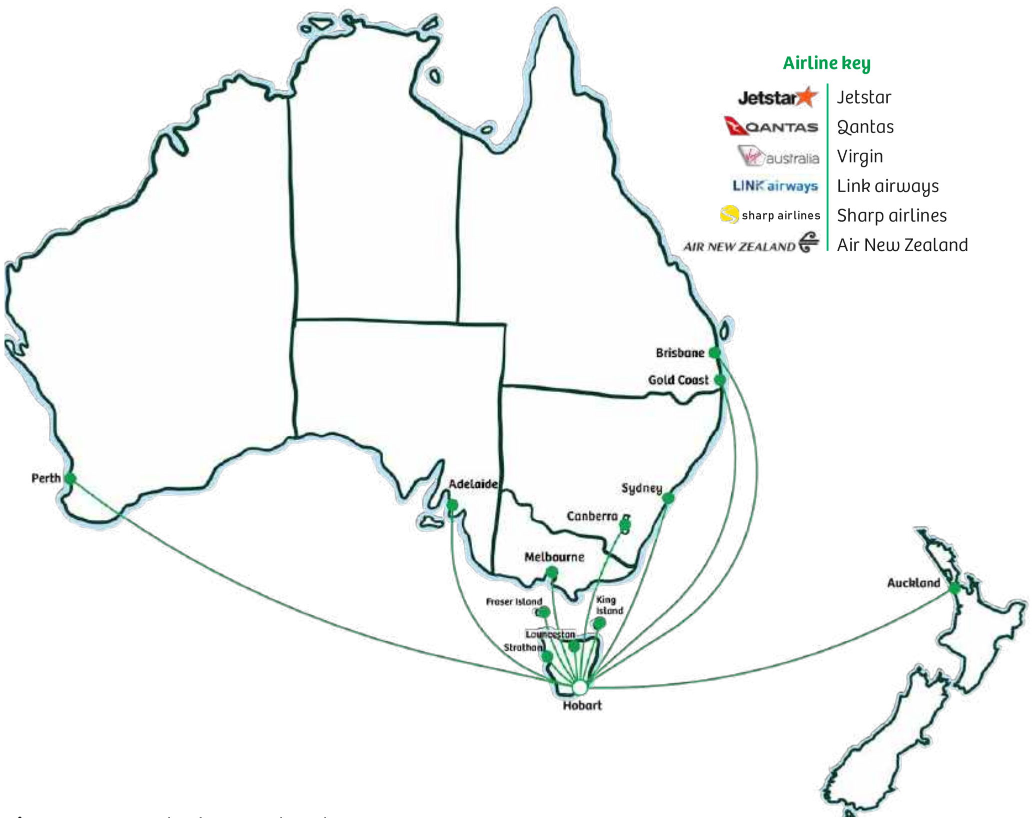

Figure 5.3: Regular transport routes

5.2 Forecasting approach

Airport forecasting is used to guide future airport development and ensure airports can accommodate anticipated growth. Prior to the COVID-19 pandemic, Hobart Airport experienced one of the highest growth rates of any Australian airport. The approach adopted to forecast passenger numbers at Hobart Airport involves a number of elements:

- A review of traffic history available (including fixed-wing and rotary aircraft operations) for passenger traffic for Australia and Australian airports
- Analysis of the aviation and business environment, current airline schedules and proposed new services
- Modelling to forecast airport growth (for international markets these contain estimates of the responsiveness of passenger traffic to general economic activity (measured by GDP), airfares and exchange rates. The main influences on domestic growth are Australian GDP/GSP and airfares)

Like all airports, COVID-19 impacted passenger volumes at Hobart Airport. Traffic forecasts for Hobart Airport considered the potential lingering impacts of COVID-19 such as the shape of recovery for commercial flights, aviation workforce and freight rates. In addition to COVID-19, forecasting future passenger numbers at Hobart Airport considered the following factors:

- The local and international drivers of demand such as population growth, propensity to travel, and exchange rates
- The strength of the Tasmanian and Australian economies, within a global context
- Increased capacity of existing and new airlines
- Airline costs (including oil prices), airfares and other travel costs

5.3 Passenger and aircraft forecasts

Prior to COVID-19 passenger numbers were anticipated to grow at an annual rate of 2.8% by FY2042, resulting in almost 2.5 million additional passengers for Hobart Airport. However, as a result of COVID-19, this forecast became skewed as the amounts of flights and passengers significantly decreased globally.

Passenger transport

It is anticipated growth will return to pre-COVID-19 levels in FY2023, where passenger numbers are forecast to increase from 2.9 million passengers to 5.5 million passengers (see **Figure 5.4**). This represents an annual growth rate of around 3.4% from 2023. International travel is projected to account for around 7% of passenger movements by 2042.

Projected passenger growth and the continuation of regular international services is underpinned by the infrastructure pipeline at Hobart Airport. Bringing the existing runway to Code E standards to accommodate Code E or larger aircraft is also central to realising this vision. The accommodation of larger aircraft will be critical to sustaining and growing Tasmania's tourism industry, international freight capacity and Hobart's strategic role as the gateway to the Antarctic and the Southern Ocean.

Hobart Airport has successfully secured an international route with Air New Zealand and recognises the future economic opportunity in securing additional international routes.

International passenger operations commenced flights in 2021 with seasonal flights betweeen Hobart and Auckland, New Zealand. As significant interest in the growing Tasmanian tourism market continues, Hobart Airport have identified a number of opportunities to operate International services to further destinations with large (Code E) International aircraft such as a B787. The international destinations being considered by the airport and airlines suggests the forecast of international passengers to grow to 340,000 annual passengers by 2042 which present enormous economic benefits to Hobart and the broader Tasmanian community.

Non-regular passenger transport

At Hobart Airport, non-regular passenger transport (non-RPT) comprises general aviation, freight services, Royal Flying Doctor Services, and Antarctic flights as displayed in **Figure 5.5** and **Figure 5.6**. Over the past 10 years, the Airport has experienced variable numbers of air transport movements (ATMs); on average approximately 1,200 ATMs per year. In FY2021, 1,850 ATMs are expected, and this is forecast to increase to 3,290 ATMs in 2042, representing a growth of 3.4% p.a. as displayed in **Figure 5.5**.

Royal Flying Doctor Service

Royal Flying Doctor Service (RFDS) provides an important medical service to Tasmania and Victoria. In FY2018, the RFDS accounted for 42% of the non-RPT traffic. By FY2042, RFDS is expected to still contribute to a significant portion (approximately 37%) of non-RPT ATMs.

General aviation

Hobart Airport does not experience significant general aviation (GA) traffic. The majority of GA operates from the nearby Cambridge Aerodrome which is not expected to change over the planning period. Helicopter movement forecasts recognise rescue helicopters based at Hobart Airport and other Hobart Airport rotary operations, including flight training.

Hobart Airport periodically hosts additional aircraft movements of various sizes to facilitate charter operations, firefighting and military activities.

Air freight

The demand for exports of high value, highly perishable Tasmanian products is a significant driver of local industry. Hobart Airport has also recently completed the first phase of its Freight Handling Facility with Cathay Pacific. As a result, freight is expected to increase from 660 ATMs p.a. in FY2019 to 960 ATMs p.a. by 2042. The majority of freight transported from Hobart Airport is contained in the belly of passenger aircraft with only 9 dedicated freight aircraft weekly.

Antarctic flights

The Airport is currently the home for the AAD intercontinental air services. Regular operations from Hobart to Australia's Wilkins and the United States' McMurdo runways involve personnel and equipment transport for a range of national programs operating in Antarctica. The runway extension, completed in 2017, allows for larger payloads and longer-range flights. This will meet the needs of several international Antarctic programs with aviation requirements in East Antarctica.

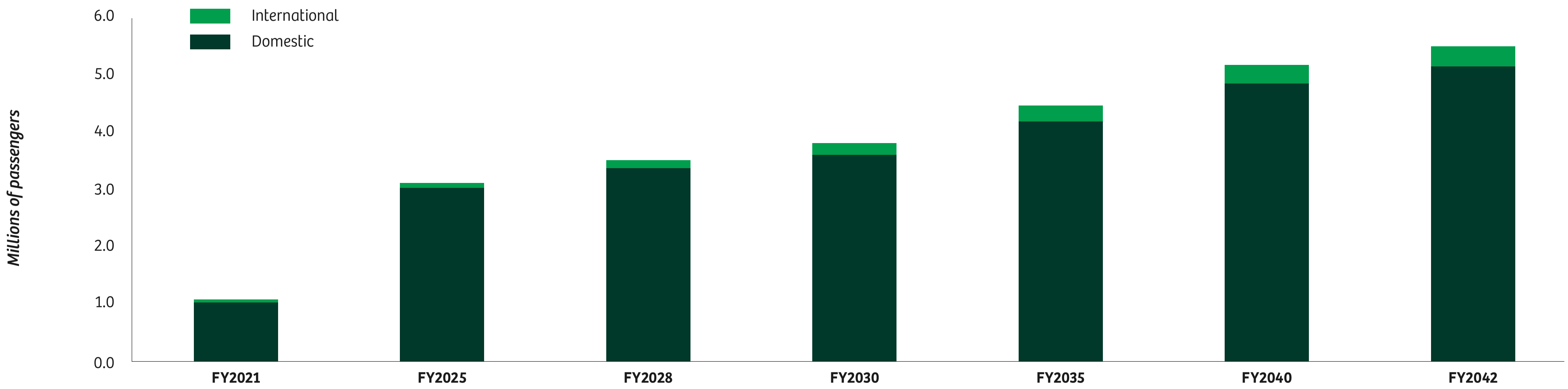

Figure 5.4: Annual passengers forecast (FY2021-FY2042)

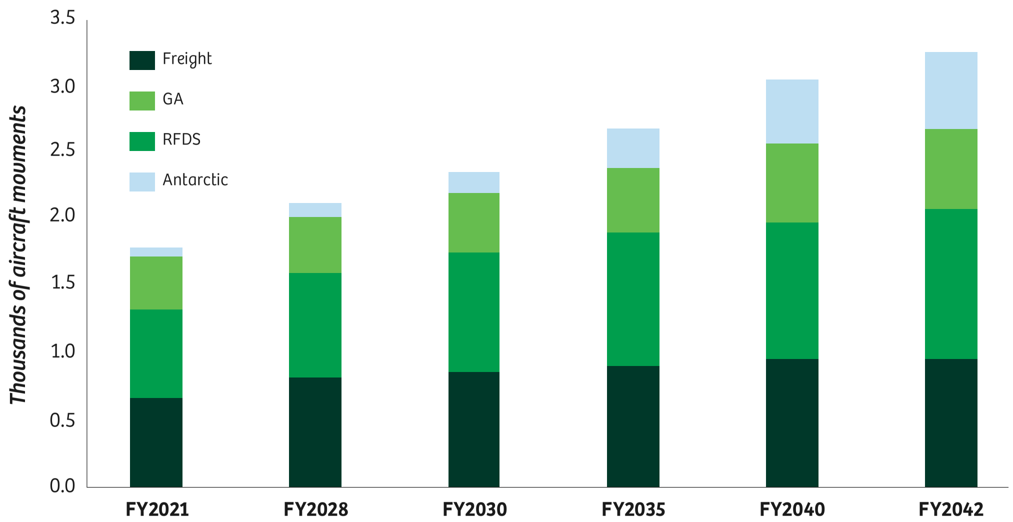

Figure 5.5: Forecast annual non-RPT aircraft movements (FY2021 – FY2042)

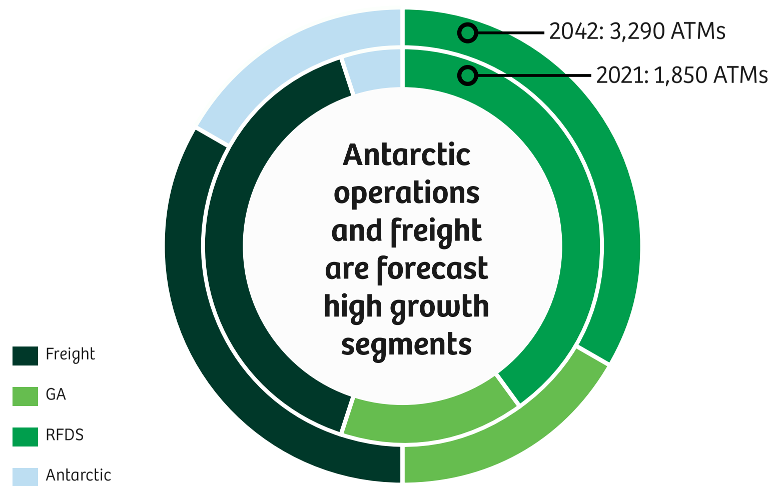

Figure 5.6: Composition (%) of non-RPT aircraft movements (2021,2042)

5.4 Busy hour forecasts

Part of the process for the Master Plan was a forecast for the busy hour of passenger and aircraft movements. Infrastructure is developed at Hobart Airport to adequately meet the anticipated demand during these busy periods.

These forecasts are used to size terminal areas, determine the number of facilities required (i.e. security screening units, check-in desks) and determine appropriate airfield development (i.e. number of aircraft stands and extensions of Taxiway Alpha to each runway end).

As shown in **Table 5.1** the number of passengers arriving during a busy hour is forecast to increase from 310 passengers to 1,570 in the year 2042. The low peak hour passenger experienced in 2021 compared to 2015 is due to the impact of COVID-19.

The forecast of aircraft parking (or stand demand) is provided in **Table 5.2** relative to aircraft size.

The key assumptions for this forecast include:

- Code E (i.e. B787 aircraft) international operations commence during financial year 2022/23
- Domestic services are expected to continue to be serviced by Code C (i.e. B737 or A320) type aircraft
- Contingency positions are provided for schedule flexibility and for unscheduled aircraft maintenance

Table 5.1: RPT busy hour passenger and aircraft movements

Busy Hour	Passengers		Aircraft Movements	
Year	Arriving	Departing	Arriving	Departing
2015	780	720	5	5
2021	310	310	3	3
2028	990	1000	7	7
2040	1460	1480	10	10
2042	1570	1590	11	11

Table 5.2: RPT Aircraft stand demand forecasts

	Stand Type		
Year	Code C	Code E	Total
2015	6	0	6
2021	3	0	3
2028	8	1	9
2040	10	1	11
2042	11	2	13