Merimbula Airport Master Plan 2043

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NSW GOVERNMENT

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Bega Valley Shire Council acknowledges and pays our respects to the traditional custodians of the lands, waterways and airspace of the shire.

Contents

1 Introduction

The Merimbula Airport Master Plan 2043 sets out a development plan to deliver Council's vision for the Merimbula Airport over the next 20 years. It updates the preceding Master Plan for the Airport which was adopted by Council in 2013.

Large areas of the Merimbula Airport site which the 2013 – 2033 Master Plan envisaged for development are heavily constrained by high biodiversity values[1], and Council has decided to preserve these in order to realise the recent runway extension. This makes the available space for future development much scarcer than was assumed in the original 2013 Master Plan.

Despite this, and other considerations of the site such as coastal hazards, previous studies have confirmed that no other feasible locations for the Airport exist in the Bega Valley Shire. Therefore, a Master Plan update is required, to roadmap the optimum ultimate development concept in response to competing demands for space. Through this Merimbula Airport Master Plan 2043, Council endeavours to avoid future barriers to airport potential which may result from inappropriate spatial development.

Council recognises that all Master Plans must balance a variety of needs and by necessity involve compromise. In this case, the goal is to achieve a balance of outcomes for all Merimbula Airport users, in line with Council's vision for the airport. Council accepts that this may mean that perfect outcomes cannot be achieved in all cases, and that prioritisation is required.

The Merimbula Airport Master Plan 2043 nonetheless strives to map a development pathway that ensures the continuing viability of Merimbula Airport to serve the needs of the region for the next 20 years, and beyond.

[1] A fact reinforced by the NSW Government Department of Climate Change, Energy, the Environment and Water in response to the draft of this Master Plan.

1.1 Background

Merimbula Airport is located on Arthur Kaine Drive, two kilometres south of the Merimbula township. The Airport was constructed in the 1950s, and subsequently owned and operated by the Commonwealth until 1997 when ownership was transferred to the Shire under the Aerodrome Local Ownership Plan. Bega Valley Shire Council (Council) owns and operates Merimbula Airport.

The Airport provides essential links for professional, legal, specialist and medical services as well as passengers for tourism, employment and business. Merimbula Airport is a critical element of Council's transport strategic direction and its management and the provision of airline and other air services into the future is considered critical to ensure the best outcomes for the community.

The Merimbula Airport Master Plan is an essential part of our medium and long-term planning. By planning ahead, with a 20-year horizon, we strive to ensure the continued delivery of the highest quality of secure and efficient aviation and business services. The original Master Plan was prepared in 2013 and provided a framework for several key infrastructure upgrades that have been delivered in the intervening time.

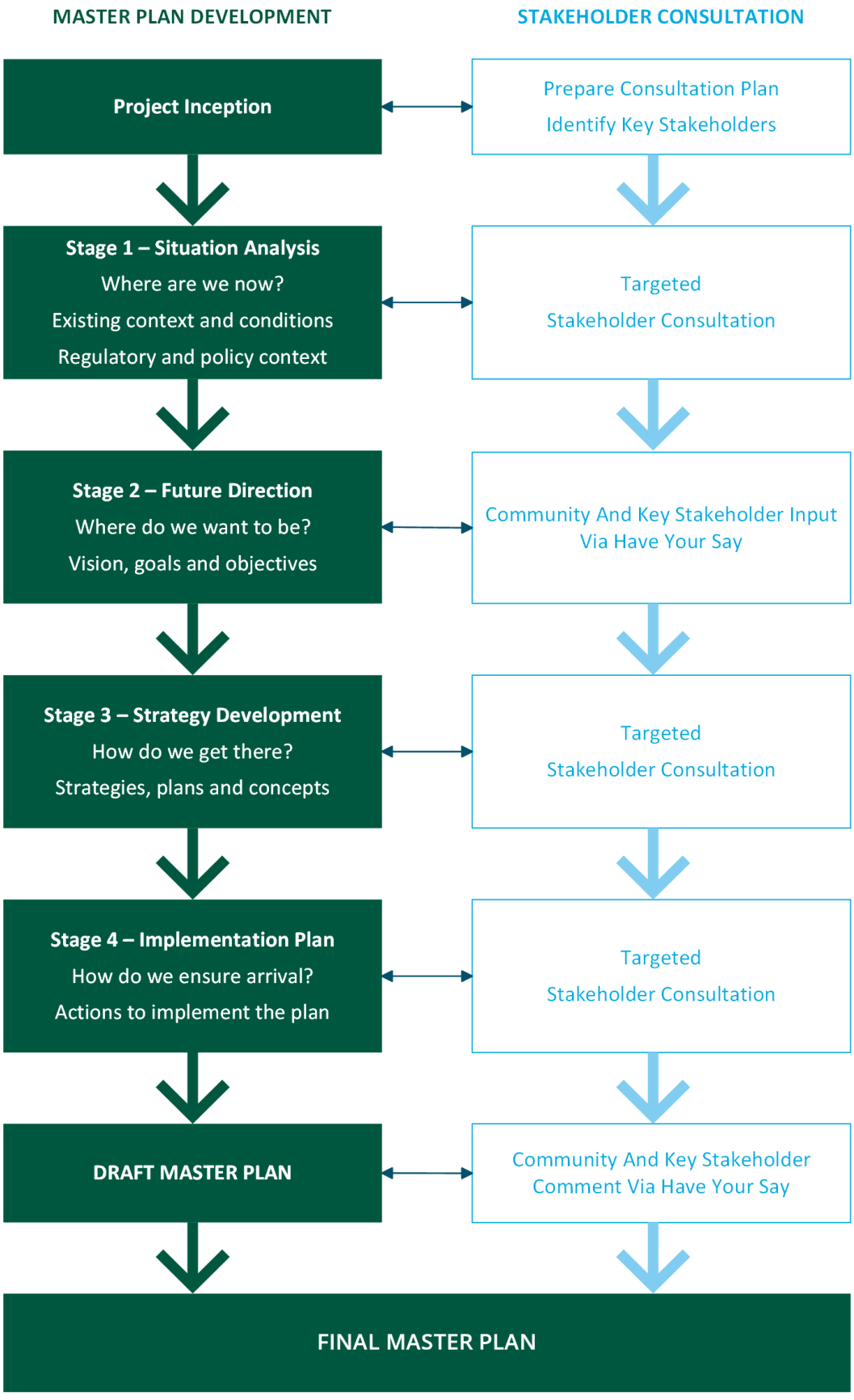
The period since the publication of the Master Plan in 2013 has been one of considerable change for Merimbula Airport with Council taking over full operational responsibility from the previous operator, the introduction of a second airline, changes to the regulatory environment, evolving local and global economic drivers, and a deeper knowledge of the Airport site gained through the implementation of recent development projects. Accordingly, in line with best practice, the time is right to reframe the future direction of the Airport with this Merimbula Airport Masterplan 2043.

1.2 Master Planning Approach

This Merimbula Airport Master Plan has been prepared for Council by specialist airport and aviation consultants L+R Airport Consulting. The master planning process has been based upon the Australian Airports Association's Airport Practice Note 4 Regional Airport Master Planning Guideline which adopts four stages as illustrated in Figure 1

The 2013 Master Pan focussed primarily on Stages 1, 2 and 3 of the process, to identify a high-level site-wide strategy for the Airport land, acknowledging that feasibility and implementation of some of the vision would be subject to further investigation. In light of the greater knowledge of site conditions and further detailed analysis undertaken as part of project delivery in the last 10 years, the approach adopted for the preparation of the Merimbula Airport Master Plan 2023-2043 has placed a greater focus on firming up concepts for the remaining site development, actions required, triggers and expected timing for each element of the plan.

Figure 1: Master Planning Process



1.3 Stakeholder Consultation

Consultation with a wide range of stakeholders is essential to the master planning process for the Merimbula Airport Master Plan 2023-2043. Key stakeholder groups were identified as part of the initial project planning. A range of consultation approaches have been adopted, depending on the nature of each stakeholder group, to achieve effective dialogue with affected stakeholders during the master planning process. These have included stakeholder meetings and public exhibition with formal submissions. In particular, the process has involved:

- Consultation regarding the vision for the airport and future direction of how it will function, through Council's Have Your Say online portal in April 2023.
- Stakeholder meetings with a range of airport users on key facility requirements, and email correspondence with specific user groups in May-September 2023.
- Consultation on preliminary development concepts between October 2023 and January 2024.
- Public exhibition and formal feedback, through Council's Have Your Say online portal, on the draft Merimbula Airport Master Plan 2023-2043 during February/March 2024.

2 Merimbula Airport Vision

Council has developed a vision statement and supporting principles for Merimbula Airport that encapsulates the desired future strategic direction of the Airport and drives the direction of the Merimbula Airport Master Plan 2043, as follows.

2.1 Vision Statement

Merimbula Airport is a key gateway to the Sapphire Coast. It will be functional, welcoming, efficient and responsive to the region's air transport needs as they expand and diversify. It will fulfil its role in supporting the region's essential service provision and economic sustainability.

2.2 Supporting Principles

- Merimbula Airport should be fit for purpose now and as the region's needs evolve and grow.
- Merimbula Airport should support the provision of affordable and accessible air transport services.
- Merimbula Airport should be safe for all users.
- Merimbula Airport should be as self-sufficient as possible.
- Merimbula Airport should reflect the region in its presentation as a gateway.
- Merimbula Airport should be nimble and adaptable to changing economic climate and market demand.
- Merimbula Airport's plans should be continually reviewed to meet evolving legislative requirements and implemented in a staged framework.

2.3 Community Input and Have Your Say

In April 2023, Council sought community input on the draft vision statement and supporting principles through the Have Your Say portal, as well as consulting with key stakeholders within Council as well as elected representatives. The Have Your Say forum also canvassed the community on airport usage habits, user preferences, satisfaction levels and suggestions for improvements.

The Have Your Say was well-responded with 131 responses recorded. Almost three-quarters (72.7%) of respondents agreed or strongly agreed with the vision statement, although a small proportion (6%) registered disagreement with the statement.

In relation to the supporting principles, the greatest level of agreement was with the principle that 'Merimbula Airport should be safe for all users' (96.5% Agree or Strongly Agree), followed by 'Merimbula Airport should support the provision of affordable and accessible air transport services' (89.7% Agree or Strongly Agree) and 'Merimbula Airport should be fit for purpose now and as the region's needs evolve and grow' (83.5% Agree or Strongly Agree).

The lowest levels of agreement with the supporting principles were for the statement 'Merimbula Airport reflects the region in its presentation as a gateway' (63.8% Agree or Strongly Agree) and 'Merimbula Airport should be as self-sufficient as possible' (72.4% Agree or Strongly Agree).

In terms of other themes arising from the community input:

- The mode of travel most often used to the Airport is by Private Car, either self-drive (44% of respondents) or dropped off (33% of respondents), with 22% using a combination of these options or another mode of transport.
- When visiting the Airport terminal, the item rated most important was 'An outdoor area whilst waiting', with only 7.5% saying this was not at all important and 30.5% saying it was very important. This was closely followed by being able to get a coffee and food, and being able to fill a water bottle, each with similar levels of importance.
- The clear area of least satisfaction is 'Ease of access from car parking to terminal' with 30.8% Very or Somewhat Dissatisfied.

A further 69 additional comments or suggestions were raised by respondents, of which the main themes relating to the scope of the Master Plan review were: car parking; terminal access; and itinerant aircraft parking/provision for general aviation users.

3 Existing Situation

Merimbula Airport is a typical regional airport serving a mix of airline, emergency services, general aviation, private and recreational users. Its facilities have been developed over time, including recent upgrades to the terminal and runway and the development of a new hangar precinct.

3.1 Aircraft Operations and Passenger Traffic

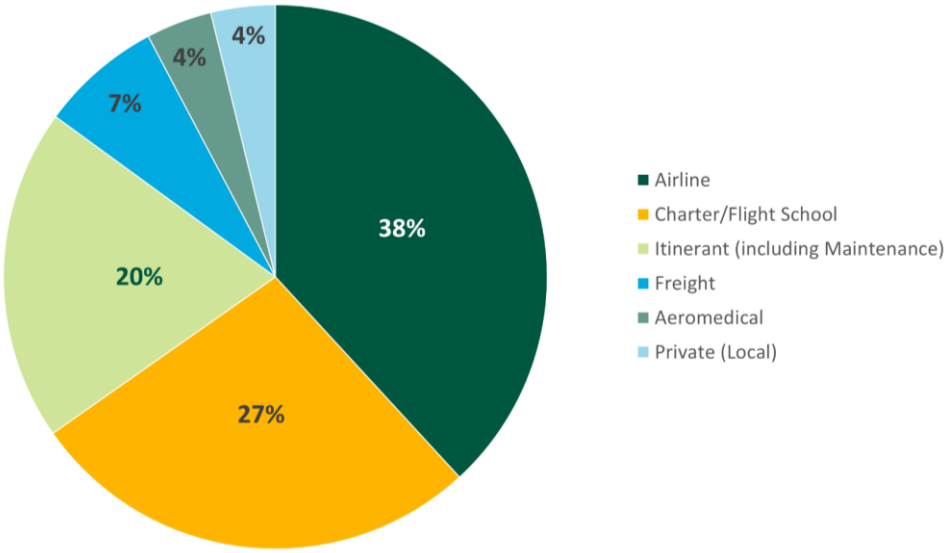
3.1.1 Overview

Merimbula Airport is currently served by two airlines – Regional Express and QantasLink – with services to Sydney (Kingsford Smith) and Melbourne (Tullamarine). A regular freight service operates to Merimbula Airport five days per week.

The Airport is an important facility for aeromedical and other emergency service operators, both fixed wing and helicopters. A charter operator/flight school and an aircraft maintenance business are both currently based at Merimbula. In addition, a number of local private aircraft users are based at the Airport, and the Airport is also used by a number of itinerant users as described below.

In total, Merimbula Airport recorded approximately 4,160 landings, or 8,320 total aircraft movements, in 2023. **Figure 2** provides a summary breakdown of calendar year 2023 aircraft operations, as recorded by AvData on behalf of Council and categorised by L+R Airport Consulting[2].

Figure 2: Aircraft Movements by Category, 2023



[2] Due to Council's Fees and Charges structure, which charge some users a yearly fee for unlimited landings, not all movements by locally-based commercial and private operators may be recorded. Movements for the Charter/Flight School have been adjusted based on movements reported by the operator. Other movements by local operators may be under-represented, however no data was provided by airport users regarding actual movements to allow a similar adjustment to be made.

3.1.2 Airline Services

Regional Express (Rex) has operated to Merimbula Airport continuously since 2003 when previous operator Hazelton Airlines, merged together with Kendell Airlines, to form Rex. In 2023 Rex operated 2,682 passenger flights to and from Merimbula on 36-seat Saab 340 aircraft. Of these 26.7% were on the Merimbula-Melbourne route and the remainder serving Sydney (some via Moruya).

QantasLink commenced operations to Merimbula in December 2020 using a combination of 50-seat Dash 8-300 and 36-seat Dash 8-200 series aircraft operating a total of 488 passenger flights. In 2023 QantasLink operated a seasonal service to Melbourne 3-5 days a week during the summer and Easter peak holiday periods (58 flights, 11.9%) and a year-round 5 days per week service to Sydney (all direct – 430 flights, 88.1%).

3.1.3 Passenger Traffic

Figure 3 shows annual passenger traffic over the period 2003 – 2023. Following a significant reduction during 2020 and 2021 as a result of Covid-19 related travel restrictions, and a lesser impact in 2022 due to a runway closure for major pavement upgrade from the end of January through mid-March 2022, passenger traffic has returned to the highest annual levels since 2007.

Figure 3: Annual Passenger Traffic 2003-2023

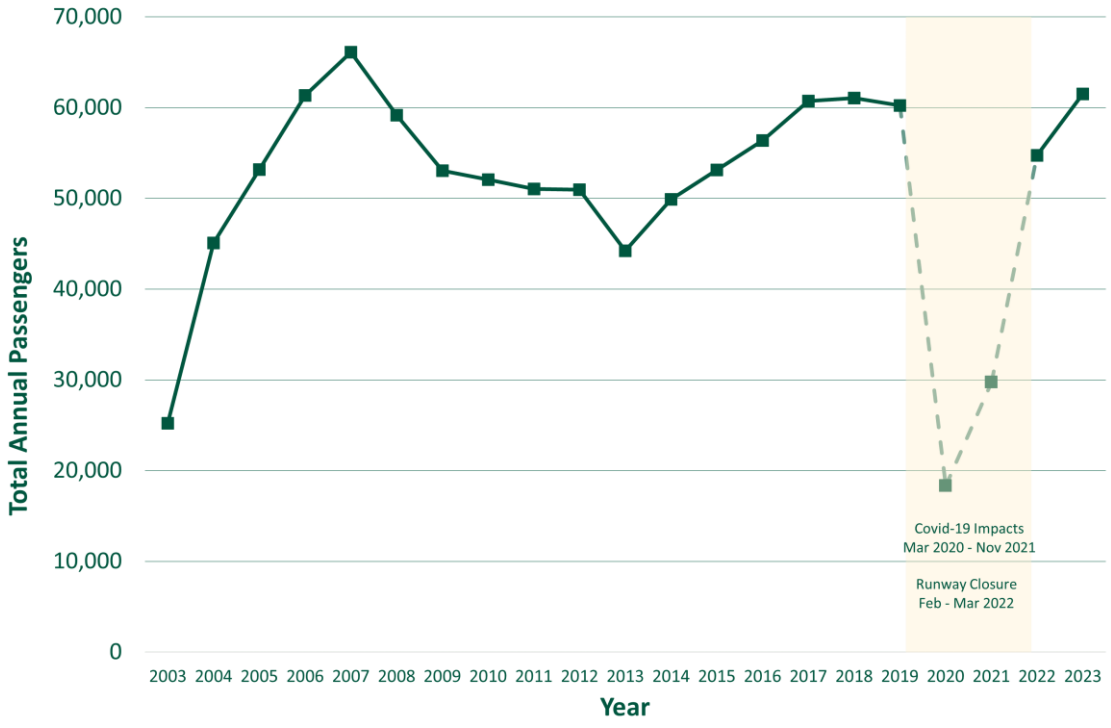


Figure 4 shows passenger traffic by month, as an average over the period 2003 to 2023, excluding the years 2020-22 where some months were severely impacted by Covid-19 restrictions and runway closure for pavement maintenance. There is a variation of 20 to 25 per cent in monthly passenger flows from the busiest to the least busy months.

Figure 5 shows the passenger traffic split between the Merimbula-Melbourne and the Merimbula-Moruya-Sydney routes in 2023. **Figure 6** shows the split of passenger traffic by airline for the same period.

Figure 4: Average Passengers by Month (2003-2023)

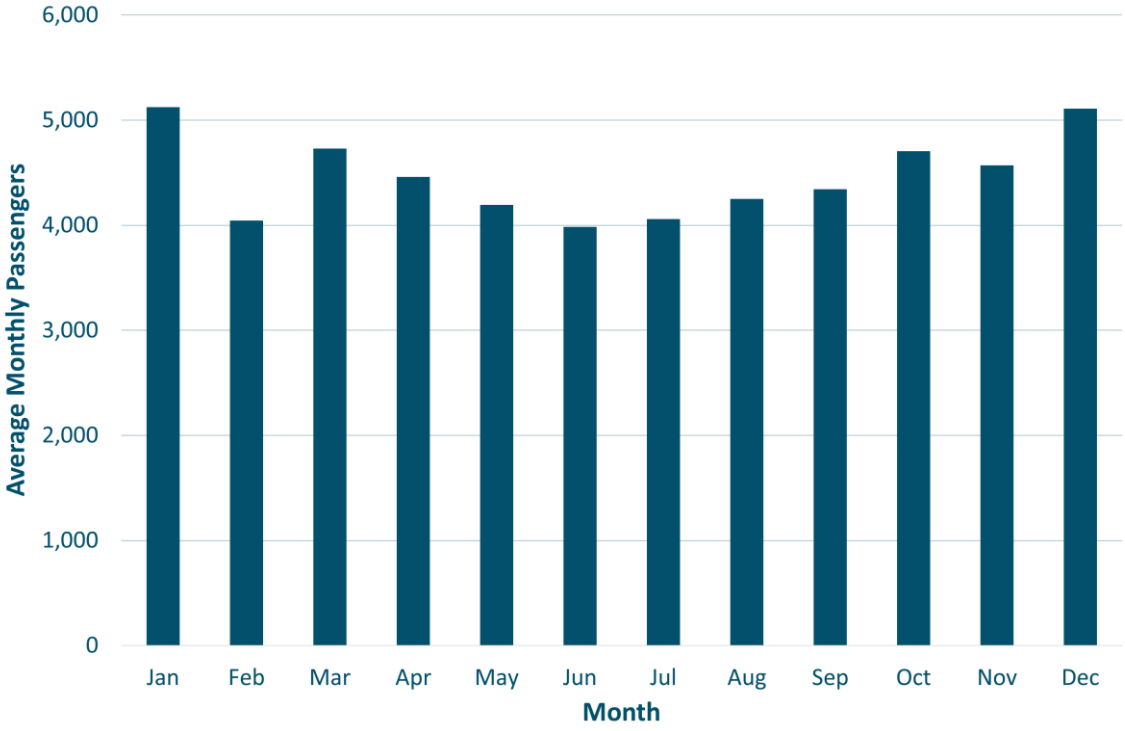


Figure 5: Passenger Traffic by Route, 2023

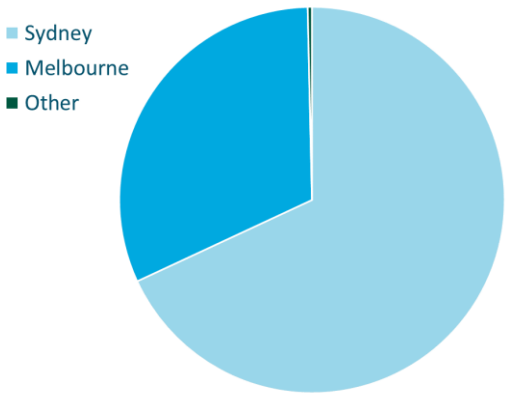
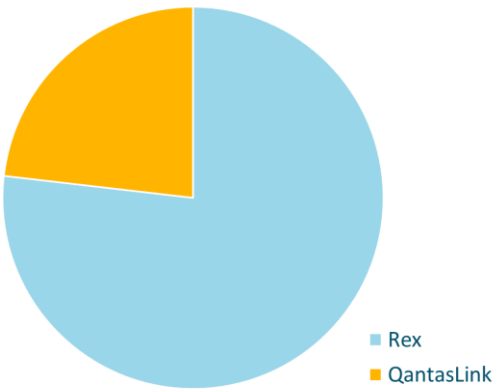


Figure 6: Passenger Traffic by Airline, 2023



3.1.4 Other Aviation Operations

3.1.4.1 Freight

In addition to cargo carried on airline services (known as belly-hold) dedicated freight services are currently operated by Rockwell AeroCommander 500 series aircraft by operator GAM Group (General Aviation Maintenance) out of Bankstown Airport five days a week also serving Moruya and, less frequently, Essendon.

3.1.4.2 Aeromedical

Aeromedical services are provided by fixed wing operators RFDS and Ambulance NSW, using mostly King Air 350 aircraft, and AirMed Australia, using Cessna Citation 510 and newer Pilatus PC24 aircraft.

The Airport is also frequented by helicopters serving the South East Regional Hospital in Bega, for refuelling between patient transfer operations. There were around 30 visits on average per year over the period 2020-2023.

3.1.4.3 Charter and Flight Training

Merimbula Air Services provides air charter, scenic flights and flight training using Cessna 172 and Partenavia P.68 aircraft. The business currently operates from a building immediately to the south of the terminal and recorded approximately 400 aircraft movements in 2023.

3.1.4.4 Maintenance

Merimbula Aircraft Maintenance has operated by the current proprietor since 1994 (and previously from the 1970s) providing a wide range of maintenance for light piston single- and multi-engine fixed-wing aircraft to aircraft owners and operators around southeast Australia. The aircraft movement records available do not identify aircraft operations associated with Merimbula Aircraft Maintenance separately, instead the movements are counted along with other itinerant aircraft operations.

3.1.4.5 Private Owners

A number of private aircraft owners have aircraft based at Merimbula Airport, including in two hangars located to the south of the existing fuel facility. Around 320 movements were recorded by these aircraft in 2023, and around 530 per year on average over the period 2020-2023.

3.1.4.6 Itinerant Aircraft

Merimbula Airport is visited by a wide variety of aircraft visiting from other locations. These include customers of Merimbula Aircraft Maintenance, flight training schools, charter and operators, business and private users, as well as emergency services contractors. Combined, these operations account for around 1,650 movements per year and constitute approximately half of all general aviation (i.e. non-airline) activity.

3.1.4.7 Emergency Services

Merimbula Airport is an essential facility supporting emergency services disaster response efforts in times of bushfires, floods and other emergencies. Accessibility for a wide range of aircraft, including military transport aircraft such as the C130 Hercules and aerial firefighting operations, is crucial for the region’s resilience to natural disaster.

3.1.4.8 Military

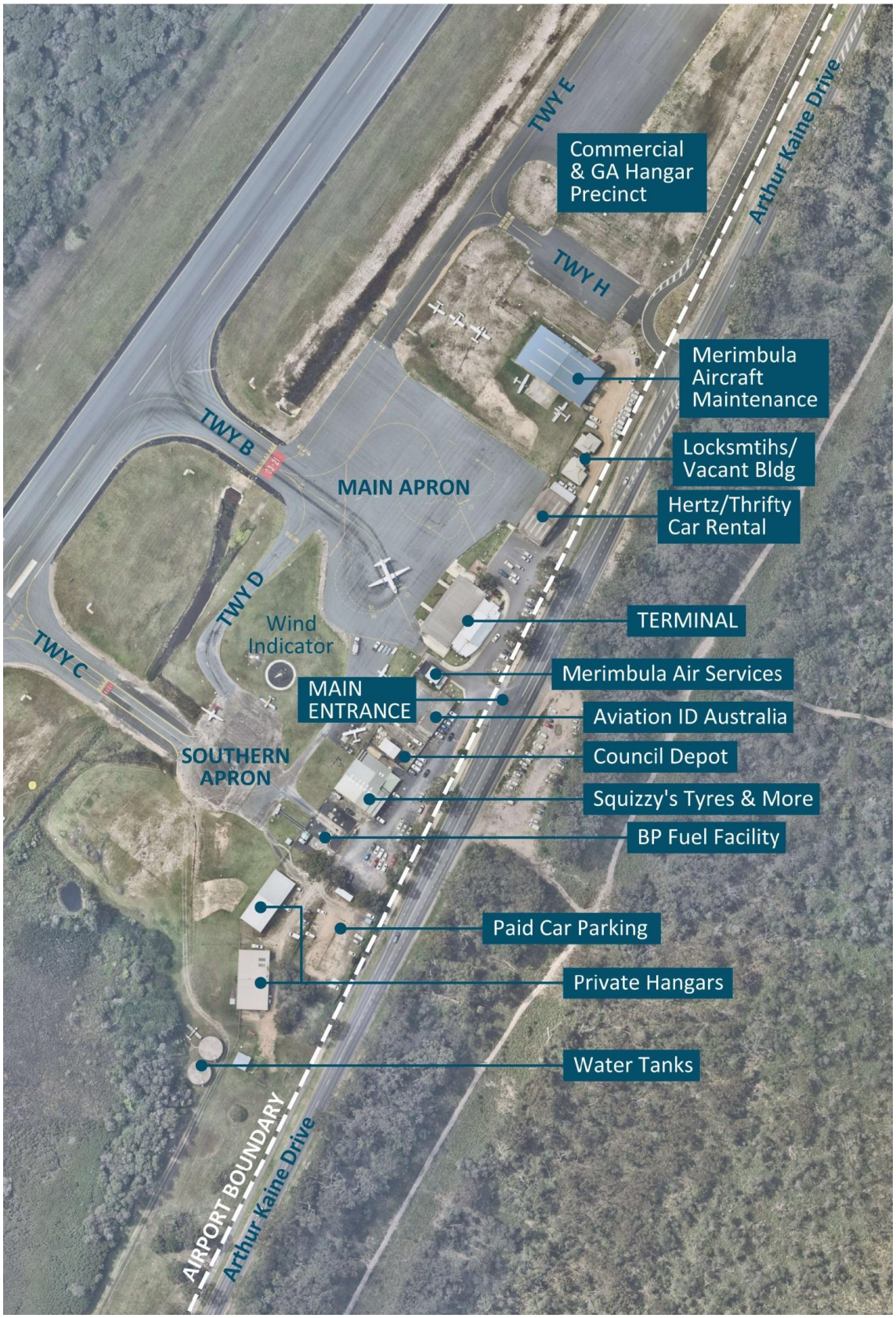
As well as in times of emergency, military aircraft occasionally use Merimbula Airport for training purposes.

3.2 Existing Airport Facilities

Figure 7 and **Figure 8** illustrate the existing Merimbula Airport layout, facilities and infrastructure, which are described further below.

Figure 7: Merimbula Airport Layout

Figure 8: Existing Airport Facilities



3.2.1 Runways

Merimbula Airport has a single runway, 03-21, oriented approximately northeast-southwest. The runway is 1,602 m long and 30 m wide, with starter extensions at each end that provide an additional 119 m of take-off length in each direction, giving a total available take-off runway length of 1,721 m each way.

The runway is located within a runway strip which is currently published at 90 m wide, due to surrounding vegetation. Council is preserving a 150 m wide runway strip (RWS) and associated obstacle limitation surfaces (OLS) from permanent developments on- and off-airport and is working to manage removal of the necessary vegetation to be able to publish a 150 m RWS.

3.2.2 Taxiways

The aerodrome has three (3) taxiway connections to the runway – Taxiways Alpha (A), Bravo (B) and Charlie (C). Currently, Taxiway B is the only taxiway that can accommodate airline operations by Saab 340 / Dash 8 aircraft types. Taxiway A can accommodate aircraft using the Commercial and General Aviation Precinct, and Taxiway C is currently limited to light aircraft (less than 5,700 kg MTOW).

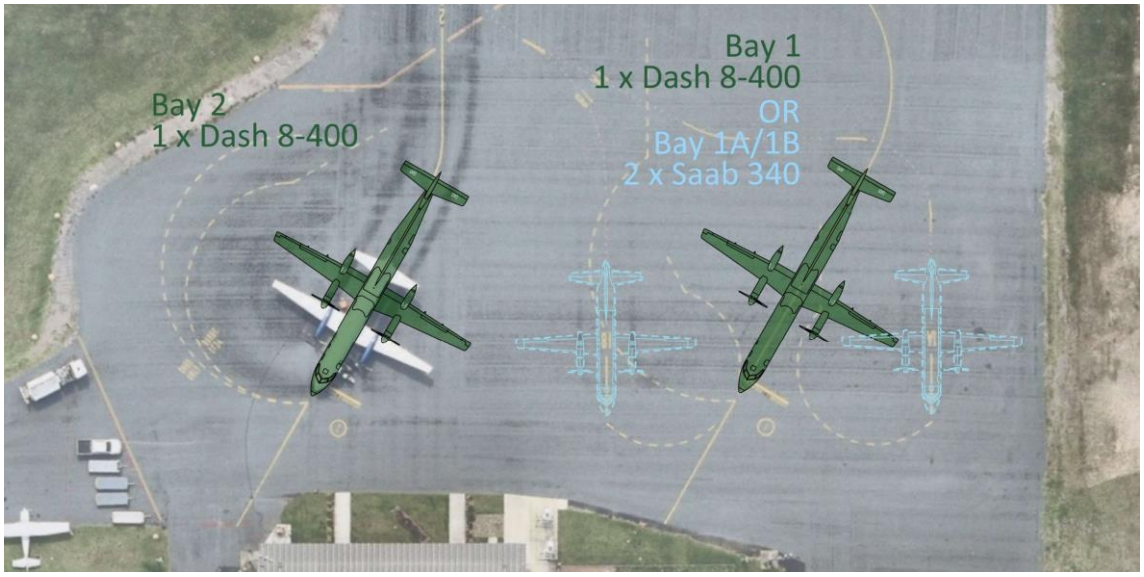
In addition, there are sections of parallel taxiway between the Southern Apron and Main Apron, between Taxiways B and A, and north of Taxiway A. These are designated, in accordance, with accepted naming convention, as Taxiways Delta (D), Echo (E) and Foxtrot (F), respectively from south to north.

Two cul-de-sac taxilanes provide access to hangars in the Commercial and GA Precinct – Golf (G) and Hotel (H).

3.2.3 Main Apron

The main apron currently serves airline, aeromedical and charter operations. There are two primary aircraft parking positions, Bay 1 and Bay 2, which can each accommodate up to a Dash 8 Q400 aircraft. Two secondary positions are provided, Bay 1A and 1B, which can each accommodate up to a Saab 340 aircraft, allowing for a maximum of three aircraft on the main apron at a time as shown in **Figure 9**.

Figure 9: Existing Main Apron Aircraft Parking



3.2.4 Southern Apron

The Southern Apron is located to the south of the Main Apron and is accessible by light aircraft only, via Taxiway D from the main apron, or directly to/from the runway via Taxiway C. The southern apron provides access to the BP fuel facility self-service bowser. The southern apron pavement is in poor condition and sections of it are currently unserviceable due to extensive cracking and surface deterioration.

3.2.5 Other Aircraft Parking

Informal parking for light aircraft is currently provided in several areas across the Merimbula Airport site, as follows:

- In two (2) privately-owned hangars to the south of the southern apron.
- Around the perimeter of the southern apron.
- On the grassed area between the wind indicator and the Main Apron (subject to weather and grass condition.
- In the area west of the wind indicator south of the main apron along the airside perimeter fence.

3.2.6 Commercial and GA Precinct

Council has recently constructed a new hangar precinct for commercial and private general aviation users – the Commercial and GA Precinct. The precinct provides taxiway access for up to 15 small light aircraft hangars, two (2) medium sized hangars and three (3) larger hangars, the latter with paved parking provided for the exclusive use of the lessee.

At the time of preparing this Master Plan, opening of the Commercial and GA Precinct was imminent and an Expression of Interest process for leasing of the hangar sites is well progressed.

3.2.7 Fuel Facilities

Air BP holds a current lease for the existing fuel facility offering AVGAS via card-swipe bowser and Jet A1 by tanker. The facility is located to the east of the southern apron.

3.2.8 Non-Directional Beacon

The Merimbula Non-Directional Beacon (NDB) is located toward the southern end of the Airport, southeast of the Runway 03 threshold. The NDB is a legacy radio-based navigation aid, which have largely been made obsolete by satellite-based navigation technologies. Merimbula Airport has a published NDB approach procedure, for use in poor weather. However, the associated approach minima are relatively poor compared to the other satellite-based procedures available.

The NDB is owned and operated by Airservices Australia (Airservices), and Council is required to provide a lease of the required land to Airservices (at favourable rates) under the Aerodrome Local Ownership Plan (ALOP) deed. Whilst Airservices has de-commissioned a large number of NDBs around Australia over the last decade, as part of the national transition to more modern navigation methods, it still maintains a Backup Navigation Network (BNN), consisting of over 200 navaids at 124 airports across Australia. The BNN is maintained and monitored by Airservices to support a Global Navigation Satellite System (GNSS) contingency mode of operation, in the unexpected case where a pilot is unable to access the GNSS service.

The Merimbula NDB is part of the BNN and therefore is not eligible for Council to request its decommissioning at this stage. It is noted however, that Airservices is conducting a post-implementation review of the BNN and, given continually reducing reliance on ground-based navigation aids, it is conceivable that the NDB may be decommissioned during the 20-year life of this Master Plan. Therefore, this area could be available for future development but cannot be factored into the Master Plan at this stage.

3.2.9 Instrument Approach Procedures

Merimbula Airport has an NDB instrument approach procedure along with straight-in Required Navigation Performance (RNP) satellite=based instrument approaches to Runway 03 and Runway 21.

The RNP procedures allow aircraft to descend as low as 600 to 800 feet before requiring visual confirmation of the runway.

3.2.10 Terminal

The existing terminal was developed in 2019 as an expansion of the original terminal facility. The terminal building has an internal footprint of 654 m2, including check-in with four (4) counters, departure lounge, baggage collection, car rental counters, a café, and airport management offices. External baggage loading and unloading areas provide an additional 180 m2 approximately, and there is also an outdoor seating and viewing area with approximately 45 seats.

3.2.11 Car Parking

Currently, there is an identified shortage of car parking availability at the Airport. There are an estimated 178 car parking spaces on the Airport site to the west (terminal) side of Arthur Kaine Drive, as follows:

- 36 short-term (2 hour timed) spaces adjacent to the terminal.
- 12 (approx.) informal spaces adjacent to the M.A.M. hangar, plus a further 8 spaces reserved for M.A.M. use.
- 49 untimed and unpaid spaces to the south of the terminal, including 7 allocated to Squizzy's Tyres and More (see below).
- 48 paid 'secure' spaces operated by private lessee.
- 25 (approx.) informal spaces in and around the private secure parking and the existing private hangars.In addition, the cleared area across Arthur Kaine Drive is also used by Airport users for informal parking.

3.2.12 Non-aviation Businesses

There are currently several non-aviation businesses on the Airport whose presence has been historical:

- Squizzy's Tyres and More, an automotive service provider, located between the fuel facility and Council shed.
- Hertz car rental, utilising the existing hangar north of the terminal.
- A locksmiths, occupying one of the existing landside buildings to the north of Hertz.

4 Future Growth and Development Drivers

In order to plan effectively for the future needs of Merimbula Airport, an understanding of the potential level of future growth is important. This includes aviation activity, in terms of aircraft and passenger movement demand, as well as other trends and development drivers both aviation and non-aviation related. There are also some significant constraints to development on the Merimbula Airport site, which it is important to consider.

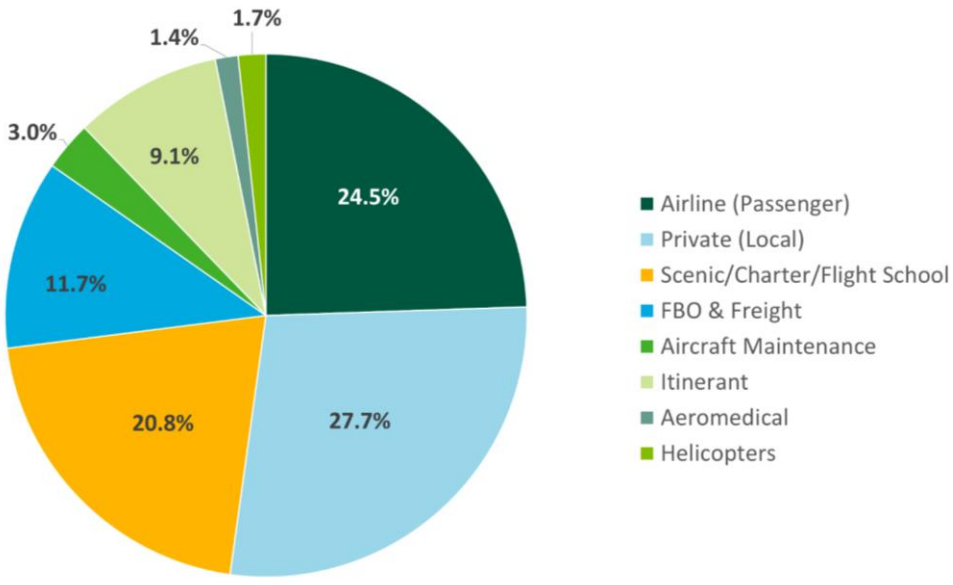
4.1 Aviation Activity

In order to adequately plan for future infrastructure development, and allocate land uses appropriately, it is necessary to form an appropriate view as to what levels of aviation demand might happen, in the medium and long term, as well as what scenarios are most likely to play out in the short and medium term.

For the Merimbula Airport Master Plan 2043, aviation activity can be divided broadly into airline demand, and general aviation demand (i.e. everything else). The drivers for each, although in some ways related, will also be different.

A forecast aviation activity level of approximately 24,000 movements per year is anticipated for Merimbula Airport, based on the potential for passenger and general aviation demand as described below. **Figure 10** provides a summary as to how this total activity is expected to break down across the various industry sectors.

Figure 10: Future Aircraft Movement Activity by Sector



Future forecasts must also take into consideration expected passenger traffic characteristics and likely airline and general aviation fleet mix changes, as a result of growth in demand and trends in aircraft manufacturing and supply.

4.1.1 Passenger and Airline Traffic

4.1.1.1 Passenger numbers

The 2013 Master Plan included three (3) passenger traffic growth scenarios, incorporating projections of between 115,000 (low-growth) and 250,000 (high-growth) annual passengers[3] by 2033. The growth scenarios were based on the application of reasonable, yet arbitrary, annual growth rates without a detailed assessment of the market potential for such growth (in line with master planning practice to safeguard adequate land for potential growth).

Local Air Travel Demand

A subsequent catchment study by Three Consulting in 2015[4], estimated that total air travel demand in the local population could be as high as 104,000 passengers per year (2.5 times larger than the observed Merimbula Airport traffic at that time), once competition, lower airfares and a wider choice of destinations (via direct routes or through-ticketing) were introduced to the market. The study noted: 'The potential size of this travel market is based on people who currently fly. This would be likely to increase should current non-flyers be converted to fly based on price stimulation and a more competitive and varied travel market.'

Since completion of the latest terminal expansion and runway extension projects, a second airline (QantasLink) has commenced operations (during the pandemic), and both Qantas and Rex offer a wider choice of through-connectivity via Melbourne and Sydney to major Australian cities and the Qantas international network. With these supply-side elements now recently established, there is little reason to believe that the potential local air travel demand will not eventuate, particularly if the Master Plan elements identified in this review are implemented.

As local air travel demand can be expected to be reasonably correlated by population. An increase of 27.5% between 2015 and 2043 is estimated[5], leading to a potential local air travel demand of approximately 132,600 passengers per year. Allowing for some leakage to other airports (particularly Canberra), this might be a realistic demand for Merimbula Airport of around 120,000 per year by 2043, if not earlier if supply-side stimulus can be encouraged and infrastructure constraints relaxed. This estimate is considered conservative, for the reasons stated above.[6] [7]

Inbound Air Travel Demand

Inbound travel currently forms only a small proportion of the total overnight visitors to the Sapphire Coast sub-region of the NSW South Coast. Based on Council's data for 2022 and 2023,

[3] 'Annual passengers' is conventionally defined as the total arriving plus departing passengers per year.
[4] Merimbula Airport Catchment Research Study & Market Research Findings 02-19 June 2015, Three Consulting.
[5] By reference to https://forecast.id.com.au/bega-valley.for 2015, 2023 and 2036 estimated population, extrapolated to 2043, and applied to the Three Consulting catchment estimate (the Merimbula Airport catchment extends beyond the shire into Snowy Monaro (people drive to the airport from locations such as Bombala) and into north-eastern Victoria).
[6] If 25% of the current non-flying population are encouraged to fly as a result of competitive fares and choice of destinations, local air travel demand could be around 150,000 passengers per year.
[7] Rex currently offers approximately 97,500 seats in and out of Merimbula each year, based on March 2024 schedules, If QantasLink were to offer the same seat capacity, and both airlines were to price those seats to achieve an overall average 70% load factor, this would equate to 136,500 passengers per year.

this was approximately 2% of approximately 662,000 total annual domestic overnight visitors to the Sapphire Coast. Also based on Council's tourism data, regional overnight visitors have increased by almost 60% since 2014.

Council has considered a range of scenarios involving differing combinations of total overnight visitor growth to the region and the share of overnight visitors travelling by air. In all cases it is assumed the appropriate tourism product development and destination marketing will occur, and that other enabling factors external to the airport, such as accommodation provision, will be provided consistent with overall growth in tourism to the region. The scenarios envisage between 40,000 and 170,000 airport passengers (or between 20,000 and 85,000 visitors), with around 90,000 annual passengers considered the most likely outcome.

Total Annual Passenger Traffic

The above analysis suggests a possible total annual passenger traffic potential for 2043 of somewhere between 160,000 and 290,000 passengers. This is a wide range, and the upper end of this range is intentionally optimistic, representing four to five times current traffic levels. For the purposes of defining long-term compatible land use planning it is important to recognise aspirational goals. Further, in reality, the sizing of facilities and infrastructure in airport planning is based on the 'typical busy day' loading[8] rather than the total annual passenger throughput. At regional airports like Merimbula Airport, the design hour loading is largely driven by the size of aircraft and number of passengers arriving and departing during regular daily or weekly peaks. Therefore, the Merimbula Airport Master Plan 2043 is not considered to be particularly sensitive to this possible over-estimation of future annual passenger traffic throughput.

4.1.1.2 Aircraft Types and Movement Numbers

In terms of aircraft fleet, future aircraft types on regional routes such as Merimbula are likely to be influenced by manufacturer decisions around the market for regional turboprop and jet aircraft for a diverse range of markets in the 30-120 seat range.

Currently, the airlines operating to Merimbula have made fleet choices based on legacy regional turboprop aircraft types, namely the 36-seat Saab 340, and Bombardier (now De Havilland Canada) Dash 8 series consisting of -200, -300 and -400 series (36, 52 and 74 seats respectively). Of these, only the Dash 8-400 remains in production and QantasLink has indicated it plans to introduce the aircraft to Merimbula services during 2024. Rex has previously indicated that the ATR42, which carries 48 passengers in its standard configuration, would be the logical replacement for the Saab 340 when they are retired, which is expected within the life of this Master Plan. However, timing of any fleet replacement is uncertain, and a number of factors may influence the eventual outcome, including:

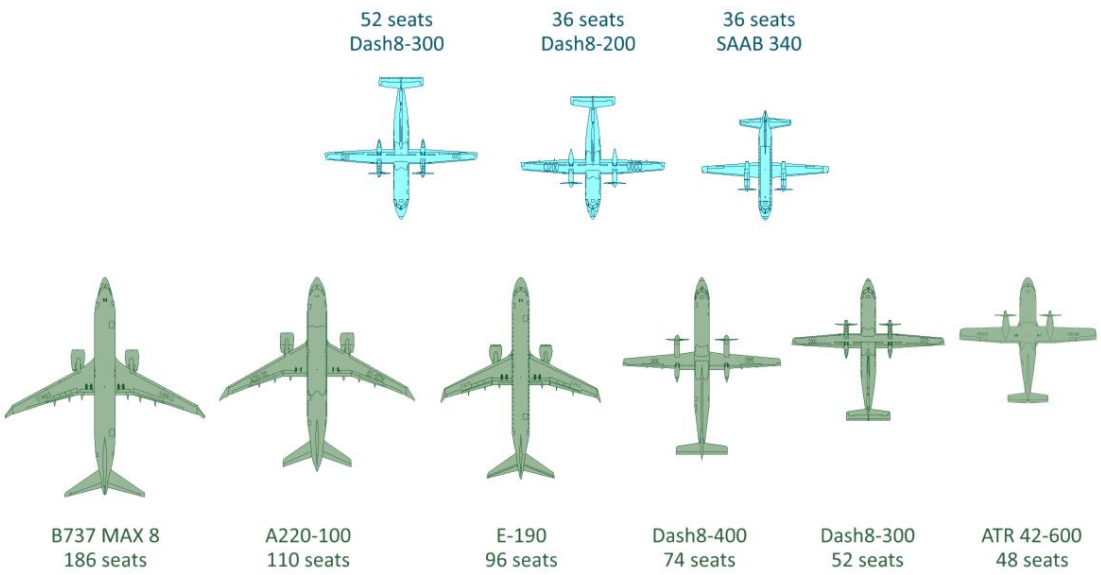
- The conversion of current Saab 340 and Dash 8 airframes to new electric propulsion, which may extend their life well beyond the original retirement timeframe.
- The development of new efficient and economical 30-50 seat aircraft types in response to new technologies.

In addition to the above, larger aircraft such as the Embraer E190 or Airbus A220 regional jets and Boeing 737 Max 8 / Airbus A320 large narrow body aircraft types could conceivably

[8] In airport terminal planning, for example, this is not the absolute peak, which would be inefficient and costly to design for, but a suitable 'busy day'. A common accepted definition is: the second busiest day in an average week during the peak month. A similar, if simplified concept, applies at Merimbula. Other facilities, for example apron parking positions, may need to be designed for the expected absolute peak.

operate to Merimbula[9], albeit on a less frequent basis than the turboprop fleet. **Figure 11** illustrates the expected transition in aircraft types associated with airline services over the period to 2043.

Figure 11: Current and Expected Future Aircraft Fleet



4.1.2 General Aviation Activity

Non-airline aircraft movement forecasts for 2043 have been developed from first principles with consideration of the various potential industry segments, airport-based and itinerant (visiting) demand sources. For each segment, an assessment of potential aircraft movement activity and likely aircraft types has been made by L+R Airport Consulting in discussion with Council based on full occupancy of the Commercial and GA Precinct with business and private tenants, which is expected to occur by 2043 (if not earlier). These forecasts are summarised in **Table 1**, and have been used as the basis for the generation of the aircraft noise assessment presented at **Section 7.2**.

Table 1: General Aviation Activity Forecasts

General Aviation Activity Forecasts			
GA Segment	**Potential Activity Level**	**Aircraft types**	**Forecast Annual Movements**
Local Private / Recreational Flyers	16 small GA hangar sites each accommodating one light aircraft Four sorties per aircraft per week on average	Mix of typical private single and twin piston aircraft types similar to existing local operators.	6,656
Charter/flight school operator	Three aircraft operating at maximum practical capacity, taking into account operational and maintenance	Two light single engine piston aircraft and one	4,992

[9] NB: These aircraft cannot operate to the current published runway strip width of 90m. To accommodate these aircraft, it will be imperative that the runway strip is officially widened to 150m, as per Council's planning.

	requirements, for a combination of training and scenic flights	light twin piston engine aircraft	
GA Segment	**Potential Activity Level**	**Aircraft types**	**Forecast Annual Movements**
Aircraft Maintenance	One aircraft arrival and one aircraft departure per day	Mix of aircraft types similar to the itinerant aircraft contingent, based on existing usage	730
Small Fixed Base Operator	Two aircraft each operating 2-3 sorties per week, on average	Light jet and light twin piston engine	520
Large Fixed Base Operator	Corporate, charter and air taxi operator with two aircraft each operating 4 sorties per week	Two 9-15 seat private jet aircraft	832
Freight	Existing freight operator to remain, with an increase in aircraft size and frequency to daily. Additional Merimbula-based air freight operator potentially exporting fresh produce.	Two twin turboprop 19-30 seat aircraft configured for freight	1,460
Itinerant Aircraft	Approximate 30-50% increase on historical itinerant aircraft traffic	Mix of aircraft similar to historical itinerant aircraft usage	2,190
Aeromedical	Increase in line with population growth forecast of approx. 18% to 2043	Current types in use expected to remain in service towards 2043	340
Helicopters	Increase in line with population growth forecast of approx. 18% to 2043	Current types in use expected to remain in service towards 2043	410

4.2 Other Aviation and Non-aviation Trends

A number of aviation trends are in play which were not the case during the preparation of the Merimbula Airport Master Plan in 2013, and which can be anticipated to have a notable influence on the nature of growth and development drivers over the next 20 years, thus shaping elements of this update to form the Merimbula Airport Master Plan 2043.

4.2.1 Western Sydney Airport

The opening of Western Sydney International (Nancy-Bird Walton) Airport (WSI), scheduled for late 2026, will provide an additional Sydney destination option and easier access to the Western Sydney market, as well as increasing the range of opportunities for domestic and international transfer traffic.

As WSI will not be subject to the same hourly movement cap and curfew restrictions currently in place for Sydney (Kingsford Smith) Airport, there will be fewer constraints on increased services to regional destinations.

WSI will also provide additional freight capacity, potentially opening new export opportunities for local produce.

4.2.2 Evolving Australian Airline Landscape

Since 2021, Rex has developed a network of domestic flights connecting capital cities across Australia using Boeing 737-800 aircraft, in addition to the airline's traditional regional network. Rex now serves Adelaide, Brisbane, Melbourne and Sydney with Boeing 737 services and in 2023 launched Dash8-400 services between Brisbane and Cairns. This expansion in the Rex network provides greater opportunities for connecting flights to and from a wider range of destinations.

The establishment of QantasLink services to Merimbula now provides the opportunity for direct connections to international services through Sydney and, in future, potentially Melbourne.

The establishment of Bonza airline services in 2023 has introduced another airline model to Australia. Bonza connects regional centres directly, without requiring transfers in capital cities, operating a low-cost model to offer lower-price fares. While Merimbula may or may not represent a commercially viable destination for Bonza, it indicates that the range of airline business models potentially driving traffic in regional destinations is likely to be broader in future than has been the case in the past.

4.2.3 Aviation White Paper

The Commonwealth Government is currently preparing an Aviation White Paper to guide the next generation of growth and innovation in the aviation sector in the period to 2050. A Green Paper was released on 7 September 2023, and submissions closed on 30 November 2023. The Government is now considering the submissions and preparing the White Paper which is expected to be released in mid-2024.

Based on the questions posed in the Green Paper, the White Paper is expected to address a number of issues directly and indirectly relevant to Merimbula Airport, including:

- The role of airlines and airport in supporting regional economies.
  - Access to the Sydney basin (which includes issues around access to peak-period slots for regional services, which are essential in enabling same-day business return travel to and from the Sydney CBD via Mascot for regional communities).
- Maximising aviation's contribution to net zero.
  - Opportunities and challenges in decarbonising aviation.
  - Sustainable aviation fuel.
  - Electric and hydrogen powered aviation.
- A growing general aviation sector.
- Emerging aviation technologies.
  - Emerging technologies: A leadership role for Australia.
  - Enabling the manufacture and uptake of emerging technologies.

Several of the Green Paper issues are interrelated, and the policy responses to the questions posed will not be known until the White Paper is finalised (and the effects of those responses will not be evident for some years). However there are some key issues that will shape the needs of Merimbula Airport over the term of this Merimbula Airport Master Plan 2043.

4.2.3.1 Net Zero 2050

The transition to net zero offers opportunities and challenges for regional aviation. On the one hand, electric and hydrogen powered aircraft, which will likely be limited to smaller seat capacity, may serve as a replacement for the aging regional aircraft fleet currently consisting of

Saab 340 and De Havilland Canada Dash 8-100, -200 and -300 series aircraft. While the adoption of such aircraft may provide the regional aviation sector a mechanism to achieve decarbonisation, regional airports will require new infrastructure to support electric and hydrogen powered aircraft. Solar farms, grid upgrades and installation of battery charging facilities can all be expected requirements as are electric vehicle charging facilities for ground service equipment, airport operational vehicles, and the public.

The Green Paper notes that hydrogen powered aircraft are unlikely to enter widespread deployment until the second half of this Master Plan (2035 – 2050), but electric powered aircraft technology is expected to be broadly deployed in the 2030s. Electric aircraft will likely be the more suitable solution for regional short-haul routes, where it is expected to offer attractive cost efficiencies, and for general aviation.

4.2.3.2 Emerging Aviation Technologies

The Green Paper expects emerging aviation technologies, primarily drones and Advanced Air Mobility (AAM)[10] to transform the aviation sector although it is recognised that, as nascent technologies, there is uncertainty around the timing and pace of deployment.

AAM in particular may offer new opportunities to increase the connectivity of regional and remote communities. The Green Paper anticipates that regional centres may act as AAM hubs, connecting major regional centres to smaller regional or remote communities using sustainable AAM aircraft to enable point-to-point networks and on-demand air services on short routes that would not rely on aerodromes.

4.2.4 Climate Change, Sustainability and Resilience

Council's *Bega Valley Shire Climate Resilience Strategy 2050* addresses climate change and sustainability issues, including Council's net zero emissions targets. The development and operation of Merimbula Airport sits within Council's influence in terms of climate change impacts and resilience. As such the implementation of proposals in this Master Plan should be undertaken in a manner consistent with Council's climate change strategy. In addition to aviation carbon emissions being hard to abate, materials widely used in airfield and road construction such as asphalt, concrete and steel, are also relatively carbon-intensive. However, impacts can be reduced through, for example, maximising the use of renewable energy on the site, minimisation of waste, use of more sustainable and/or recycled materials, and building in resilience to rising sea levels (see Section 4.3.2, higher temperatures and more erratic rainfall.

4.3 Development Constraints

4.3.1 Biodiversity Values

Large areas of the Merimbula Airport site are constrained from further development as a result of environmental sensitivity. These include the area to the south of the existing development, which the 2013 Master Plan identified for the relocation of the terminal and main apron, and for commercial development, and areas to the west of the runway.

While these areas can be developed, doing so would incur significant environmental related costs (such as biodiversity offset costs). As such they are viewed as unfeasible to develop

[10] AAM is the term given to an emerging aviation sector using new types of aircraft to transport passengers and cargo on short-haul, low altitude flights, with eVTOL (electric vertical take-off and landing) aircraft similar in size to helicopters (drones.gov.au/ploicies-and-programs/policies/advanced-air-mobility)

unless there is no other option. The southern runway starter extension is an example that warrants the offset costs, and in this instance the remaining environmental conservation areas on the site would provide like-for-like biodiversity offsets and fisheries offsets, to set against the areas disturbed.

Figure 12 below illustrates the main environmentally sensitive areas on the Airport site, although it should be noted that other areas not shown also have sensitivities**.**

Development is also limited by the clearances required around the runway, from an aviation safety perspective, and by Arthur Kaine Drive to the east.

These constraints mean that, effectively, development is limited in the short- to medium-term to the existing disturbed area extending north and south of the terminal. In this area, there exist some immediate constraints as a result of the historical granting of leases to non-aviation activities.

Council is further investigating the environmental and heritage values of the area east of Arthur Kaine Drive, to better understand the feasibility of future modification of the road alignment to provide additional development area to the west of the road. It is anticipated that, notwithstanding significant engineering requirements, that the environmental and heritage values would require significant impact assessment, most likely in the form of an Environmental Impact Statement, as part of any development approval process. This means that lead times required for any proposals of this nature to be implemented are in the order of 5-10 years and unlikely to be possible until the mid-2030s, if at all.

4.3.2 Flood Prone Land

It is noted that portions of the Merimbula Airport site are subject to the threat of inundation, both now and, increasingly, into the future as a result of sea level rise.

The design of the recently constructed new Commercial and General Aviation precinct took into account the *Merimbula Lake and Back lake Floodplain Risk Management Study* (2020) findings with the precinct hangar RLs ranging from 2.4 6m AHD to 2.70 m AHD, which is also consistent with the runway, which ranges from 2.4 m AHD to 2.6 m AHD.

Flood study adopted coast inundation levels within the Merimbula Lake estuary for 2050 are:

- 1.85 m AHD ‘Almost Certain’;
- 2.48 m AHD ‘Unlikely’; and
- 2.84 m AHD ‘Rare’.

This places the design levels for the precinct hangars and the runway midway between the ‘Almost Certain’ and ‘Unlikely’ levels.

The current terminal RL is 2.109 m AHD, with and it is acknowledged that future extensions of the terminal will need to be at a higher floor level, with provision for disabled access across the change in levels.

Some areas of the existing airfield, including the northern corner of the main apron, the section of Taxiway D leading north from there into the Commercial and GA Precinct, and the existing Merimbula Aircraft Maintenance hangar are below the 2050 ‘Almost Certain’ level.

Detailed design of proposed Master Plan developments should take due account of expected future inundation levels.

Figure 12: Environmental Constraints and Investigation Area

5 Facility Requirements

5.1 Aviation Facilities

5.1.1 Runway

Council has development approval for an additional 80 m extension at each end of the existing runway starter extensions. Constructing these extensions would provide a total of 1,800 m of take-off runway length in each direction. This would maximise the range of destinations the current fleet can operate to on a commercially viable basis. A take-off length of 1,800 m would also make operations by large narrow-body (180-200 seat) aircraft such as the Boeing 737 Max 8 and Airbus A320neo possible (although likely to a limited range of destinations). These aircraft types are commonly used by low-cost airlines, such as Bonza and Jetstar currently in Australia, and their low operating costs per seat allow those airlines to offer very low fares, which has been proven in other markets to stimulate demand. Completing the additional runway extensions will therefore *support the provision of affordable and accessible air transport services* for the local community as well as maximising inbound tourism opportunities.

An airport's runway is the critical piece of infrastructure enabling inbound and outbound visitation through air services, being the primary driver of which aircraft types can be accommodated and which markets can be served. Whilst it is true that to realise full potential, the runway capability must be supported by that of other infrastructure and facilities – particularly adequate taxiways, apron parking, terminal facilities and ground transport access – without the enabling contribution of the runway, investment in other facilities will only have limited ability to provide benefits.

Of comparable NSW regional airports operating the aircraft types envisaged in this Master Plan (large turboprops and medium to large narrow-body jet aircraft) only Dubbo and Wagga Wagga have runway length below 1,800 m. Runway length required is influenced by a range of factors, and so cannot be directly compared between airports. However, the additional approved runway starter extension length will assist in operational flexibility for airline operations as well as emergency services operations, making large air tanker aerial firefighting activity a possibility. Therefore, the additional length will not be worthless, even if jet airline services do not eventuate.

It is noted, however, that protection against jet blast will be required at the northern end, if jet aircraft operations do occur, to reduce the impacts off aircraft take-off on the neighbouring boat ramp car park as well as on any on-airport development to the north of the runway.

The current runway width of 30 m is adequate for the envisaged aircraft fleet and no proposals to widen the runway are included in this Master Plan.

5.1.2 Main Apron

Merimbula Airport is currently served by two airlines, each (during certain periods) operating to both Sydney and Melbourne. In the future, it is expected that these two destinations will continue to represent the majority of passenger traffic to and from Merimbula. The nature of airline competition, as well as efficiencies around ground handling at regional airports, mean there is a high chance that there will be a need for four apron positions available for airline use during peak periods. The future availability of Western Sydney International Airport as an

additional Sydney destination complementing Sydney (Kingsford Smith) for one or both airlines further increases this probability. The Main Apron is already at capacity during peak periods, with all three positions occupied, leaving no room for aeromedical services.

Therefore, a minimum requirement for the Main Apron is to be able to accommodate up to two (2) Dash 8-400 aircraft and two (2) Saab 340 aircraft in the short to medium term.

In the medium to long term the Saab 340 may be replaced by larger ATR42 aircraft, increasing apron space requirements to accommodate the same airline schedule.

In addition to four operational apron parking positions for regular airline regional turboprop services, it is good practice to ensure one additional parking position is available for contingency situations where an aircraft becomes unserviceable on the ground and is unable to depart for a longer-than scheduled period and potentially requires a replacement aircraft to be dispatched to operate the scheduled services.

At the upper end of the passenger traffic projections, infrequent and/or seasonal services by regional jet and/or larger narrow body aircraft types are a possibility. The main apron should therefore also be able to accommodate these aircraft types in some manner.

As well as airline services, other operations, including freight, aeromedical and business/charter operations may need to be parked on the Main Apron, depending on the availability of suitable parking areas elsewhere on the Airport.

With larger aircraft and more frequent services, there comes a need for additional ground servicing equipment (GSE), such as passenger boarding ramps, baggage trolleys, ground power units and, in the case of the envisaged jet aircraft, stairs and baggage belt loaders. Adequate space is required convenient to the apron to accommodate this GSE.

5.1.3 Taxiway C Upgrade

An upgrade of Taxiway C to accommodate larger and heavier aircraft is proposed. This is required to provide access to the expanded main apron parking positions to the south of the existing. The taxiway will be sized to accommodate Dash 8-400 aircraft, similar to Taxiway B, and will allow improved flows between the apron and the runway, reducing congestion and waiting times for airlines.

The upgraded taxiway will be designed to accommodate large narrow-body aircraft, such as the Boeing 737 Max 8, in future subject to suitable pavement strengthening. An associated upgrade of the stormwater drainage culverts under the taxiway, in line with the stormwater management strategy, will make strength provision for these heavier aircraft loads in future.

5.1.4 Itinerant Light Aircraft Parking

While the Commercial and GA Precinct expands the available hangar space for local aviators to store aircraft, Council recognises that the limited remaining development space on the Airport site and competing pressures for land use will displace areas currently used by visiting aircraft for temporarily parking light aircraft. Combined with a possible increase in demand for visiting aircraft, additional light aircraft parking areas are important.

The area to the north of the Commercial and GA Precinct has been identified as the most suitable location for this. Extension of Taxiway F to the north, with light aircraft parking to the east of the taxiway, could potentially provide a further 8 – 10 light aircraft grass parking spaces in addition to the four (4) already provided in the Commercial and GA Precinct. Some engineering earthworks will be required to ensure levels on the taxiway and parking positions meet the aerodrome standards, and the extent of parking that can be achieved will depend on

the engineering costs and requirements for aspects like retaining walls as the site narrows towards the north.

Figure 13 shows how this are might look, together with the continuation of Taxiway F to connect to the runway, as discussed below

Figure 13: Itinerant Aircraft Parking and Taxiway F Extension

5.1.5 Taxiway Foxtrot Connection

With the addition of tie-down parking for light aircraft to the north of the Commercial and GA Precinct, Taxiway F becomes a very long cul-de-sac. This can bring operational congestion and delays to users, as well as potential safety issues, as aircraft have to juggle manoeuvring in both directions nose-to-nose. Extending Taxiway F to connect to the runway would assist in smoothing traffic flows and avoid conflicts. The extension of Taxiway F is limited by the mandated separation distances to the runway and clearance from the airport boundary fence, and would be limited to 15 m wingspan (Code A) aircraft.

5.1.6 Aeromedical

Currently, aeromedical flights utilise Bay 1A, which leaves room for one Saab 340 and one Dash 8 aircraft to operate on the Main Apron. However, there is no further parking available for another concurrent airline service, nor is there capacity if an aircraft becomes unserviceable. At peak periods, all three positions are occupied by airline services, leaving no room on the Main Apron for aeromedical services.

In the future, short to medium term expansion of the Main Apron to four positions, including the retention of the existing Bay 1A/1B plus three positions for up to Q400 aircraft, will provide capacity for aeromedical services to continue on the Main Apron. However, currently, ambulances have to enter the apron via Gate 4, south of the BP fuel facility, requiring airside

driving behind aircraft on Bay 2 to access the aeromedical aircraft. This is undesirable, but manageable at present. With an additional two (2) aircraft positions, and busier airlines operations, this arrangement will become difficult to manage safely. An access point closer to the north of the Main Apron will become increasingly important.

In addition, Merimbula Airport does not have an aeromedical patient transfer facility, as is becoming common at many regional airports. Such facilities allow patients to be unloaded from the ambulance and readied for loading into the aircraft sheltered from the elements and with a greater degree of privacy. Patient privacy is also a consideration in relation to the use of Bay 1A, which is close to public areas including the outdoor café seating/viewing area. This Master Plan provides for alternative aeromedical arrangements in the medium and long term with the possibility of a patient transfer facility located in the area between the Main Apron and the Commercial and GA Precinct as illustrated in **Figure 14** below Road vehicle (i.e. ambulance) access arrangements would need to be resolved in detail and would impact on the future use of the existing hangar to the immediate north of the Main Apron.

5.1.7 Fuel Facilities

The Master Plan makes provision for the existing fuel facility, to the south of the terminal, to be retained, with road access for fuel deliveries accommodated in the landside ground access plan. Access for aircraft to the existing self-service bowser can also likely be retained in a manageable manner in the short-to medium term, even after expansion of the Main Apron to the south.

In the medium to long term however, aircraft access to the bowser may become increasingly limited as Bays 3 and 4 become used for airline operations more frequently. In such a scenario, the existing fuel facility may be limited to the provision of refuelling by fuel truck only.

As part of the Commercial and GA Precinct Expression of Interest process running in parallel with the preparation of this Master Plan, Council is evaluating offers from prospective fuel providers to establish a fuel facility in the precinct. The preferred location is identified in **Figure 15** below and the final outcome will be subject to the conclusion of the Commercial and GA Precinct leasing process. If established, a fuel facility in the Commercial and GA Precinct may offer a long-term alternative to the existing facility and assist in providing a diverse on-airport fuel offering to commercial, private, business and government aircraft operators. There are also sound operational reasons for separating commercial/airline and general aviation fuelling wherever possible, when demand and supply permit.

5.1.8 Pavement Strengthening

The current runway, Taxiway B and Main Apron pavements have recently been re-constructed and are to a strength sufficient to accommodate airline expected Dash8-400 aircraft operations over the current pavement life cycle. In order to have sufficient strength for the next size of regional jet aircraft (E190 or A220) the design has allowed for progressive strengthening through an asphalt overlay at the next pavement surfacing renewal cycle in approximately 8 to 10 years (around 2032). This overlay will also lift the pavement surface level, assisting with flood inundation protection.

In order to accommodate the largest aircraft envisaged, Boeing 737 or Airbus A320 size, a further overlay will be required. This may be implemented with the resurfacing described above, or the subsequent pavement resurfacing cycle approximately 10 years later (around 2042), or it may be brought forward to an intermediate point in response to demand for heavier aircraft use. This second overlay would further assist with flood inundation protection.

Figure 14: Possible Aeromedical Patient Transfer Facility

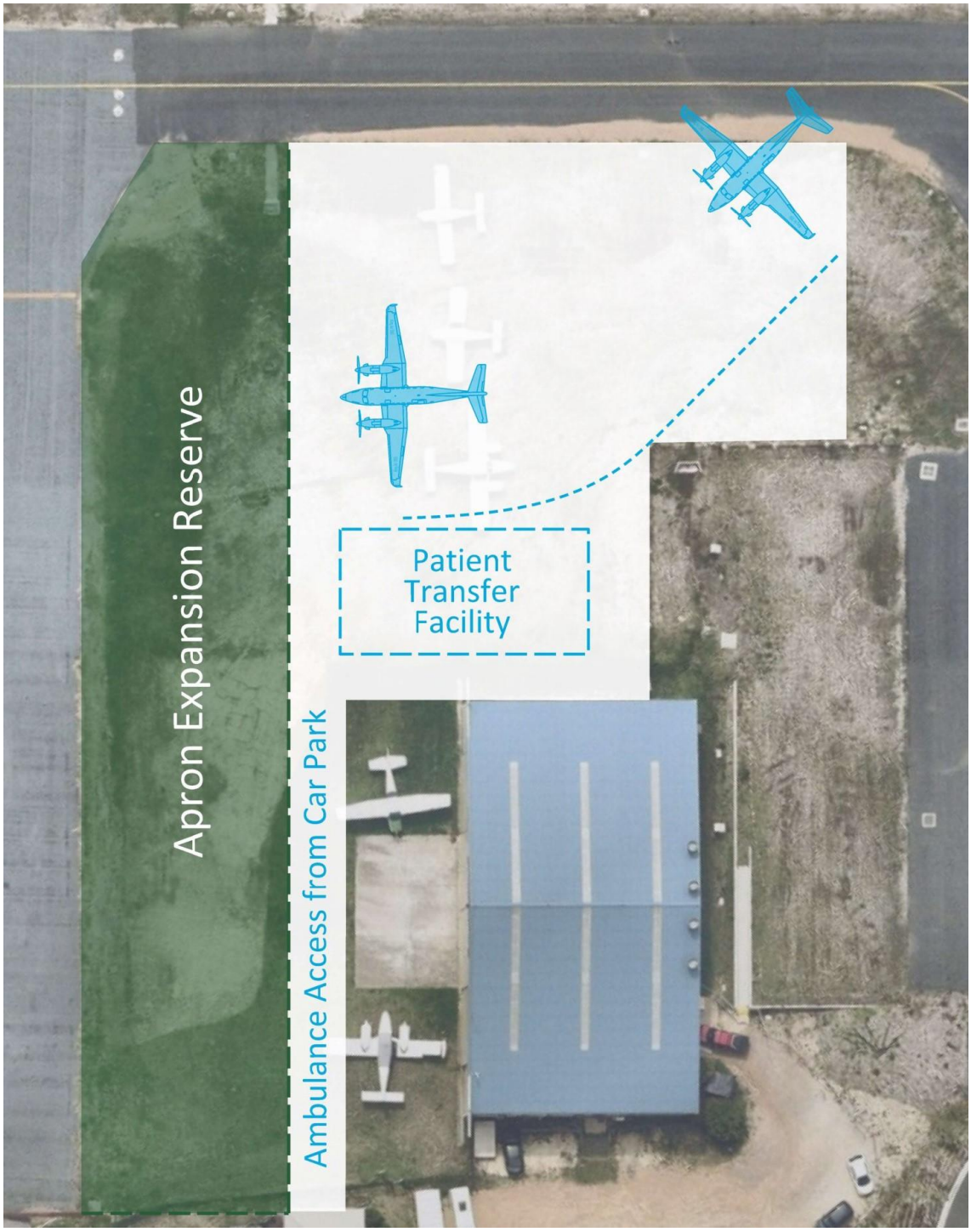


Figure 15: Possible Fuel Facility Location

5.2 Landside Facilities

5.2.1 Terminal

The terminal facilities are adequate and suitable for the current operations, which consist of 36- and 52-seat aircraft. Often, flights coincide, resulting in two (or sometimes three) flight loads of passengers waiting to depart, along with those waiting to meet arriving passengers. In these situations the terminal is busy but remains functional, and the availability of outside areas to accommodate overspill is helpful in relieving congestion.

The 2019 extension includes provision for installation of baggage and passenger screening should the Airport's security designation or the Aviation Transport Security Regulations 1996 change. Implementation would require dedicated (sterile) lounge space for screened passengers, reducing the space available for general circulation. The terminal will be able to facilitate screening, but will be cramped in the period prior to the departure of an aircraft such as the Dash 8-400.

There are two main triggers for a requirement to expand the terminal. These are:

- Incremental growth in aircraft size and peak-period passenger loads cause the current terminal to become unacceptably crowded on an unacceptably frequent basis.
- Changes to the security designation of the Airport, or to the Aviation Transport Security Regulations 1996, mandate the introduction of passenger and baggage screening.

Regardless of whether the introduction of security screening is the trigger for an expansion of the terminal or not, any expansion should make adequate provision for a permanent solution to security requirements to be implemented.

Based on expected flight schedules and aircraft sizes, the terminal will be required to accommodate 150-200 departing passengers during a future peak period, along with a similar number of arriving passengers, plus meeters/greeters.

In considering available areas for expansion, constraints that had to be considered include:

- The need for sufficient height limits under the obstacle limitation surfaces (OLS) for the building and parked aircraft on the main apron;
- Sufficient clearances from the building for aircraft moving on the apron; and
- Ground transport vehicle access, traffic circulation and pedestrian flows.

Preliminary analysis suggests an internal floor plan of approximately 2,250 m^2 will be necessary to accommodate the necessary internal functions including check-in with six (6) counters,

baggage screening, passenger screening point, sterile departures area with capacity for 150 passengers at a good level of comfort (sufficient for two full 74-seat flights) and an arrivals area with bag reclaim and car rental counters. Adjacent baggage loading and unloading areas, together with associated kerbside pedestrian spaces lead to an overall footprint of around 4,000 m^2.

Benchmarking against other NSW regional airports suggest this footprint is a little smaller than the average for airports with a similar type of operation as that envisaged for Merimbula Airport in this Master Plan, but is nonetheless comparable with the current terminal facilities at Dubbo, Port Macquarie, Tamworth and Wagga Wagga which are handling around 200,000 passengers per year each (as of 2019).

Testing of the terminal location indicates that an expansion southwards from the existing terminal provides the greatest available space and assists with landside traffic flows, due to the tapering nature of the Airport site. Again, from a traffic flow perspective, it makes sense to convert the existing terminal to an arrivals area (which could also handle unscreened departures), and to locate new check-in and security screening functions further to the south. A central area would provide a sterile departures area for screened passengers. **Figure 16** illustrates the concept.

Figure 16: Proposed Terminal Expansion Concept

5.2.2 Ground transport plan

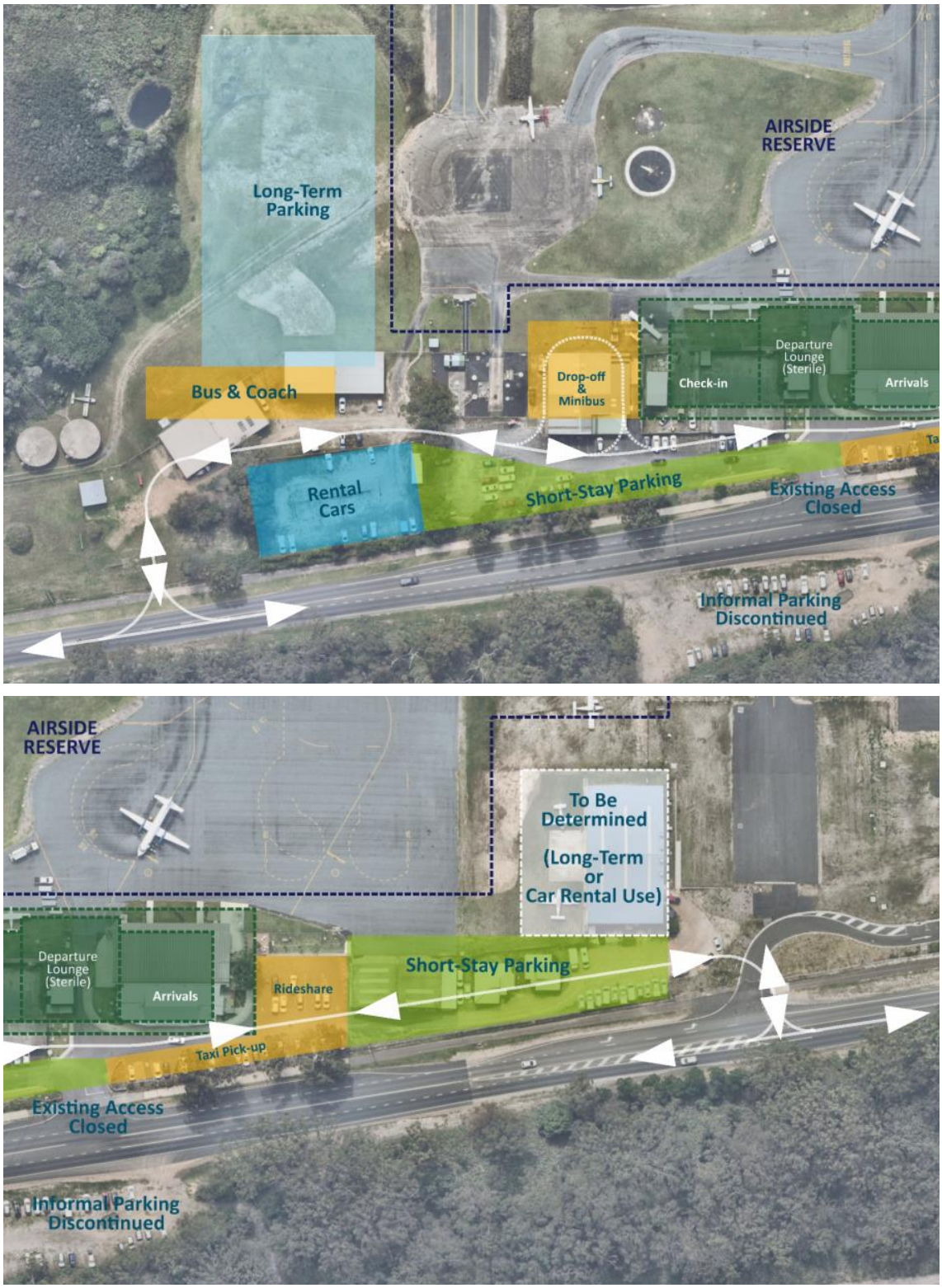
To deliver the Vision for Merimbula Airport, the ground access arrangements need to accommodate a wide range of road vehicle activity. Including:

- Private cars parked for the duration of the passenger's trip (long-term parking).
- Private cars parked while passengers are being picked up or dropped off by others.
- Airport employee parking.
- Rental cars being collected or returned.
- Licensed taxis and rideshare vehicles.
- Minibuses and minivans operated by private tour operators.
- Public bus services and private charter coaches.
- Fuel tanker deliveries to the existing fuel facility.

Of these, some require access immediately adjacent to the terminal, while others can be located further away.

Figure 17 below illustrates the proposed ground transport access concept, the key elements of which are described in the following sub-sections.

Figure 17: Ground Transport Concept Layout



5.2.2.1 On site circulation

Due to the shape of the site and the increasingly constrained area available for ground transport access moving north, the Master Plan adopts the principle of limiting, as much as possible, the need for the largest vehicles to traverse northward. This places bus and coach activity furthest south, minibuses in the centre of the precinct, and only cars and the like to the north of the terminal. In addition, to simplify traffic flows and avoid the need for two-way traffic across the narrowest part of the road network, no set down or pickup is proposed along the eastern façade of the terminal. Instead, set down for all passengers will be at the southern end of the proposed check-in area, and pick-up will be to the north of the arrivals area. A designated taxi rank can be provided and other pickups will utilise the short-stay car parking, which will be expanded in this area as described below.

5.2.2.2 Car parking

An estimate of total car parking demand has been undertaken, to gain a high-level view of the space requirements for car parking. For safety reasons to avoid pedestrians crossing Arthur Kaine Drive car parking is required to be confined to the western (i.e. terminal) side of that road. An estimated requirement of between 450 and 600 total car parking spaces has been identified, based on indications of passenger travel patterns. Benchmarking suggests this range is consistent with car parking provision at similar regional airports, however takes no account of the location-specific ground transport demand drivers and supply factors in play at Merimbula.

The exact number of spaces required at Merimbula Airport will be subject to a range of factors including:

- Airline traffic patterns and actual peak period passenger flows.
- Evolution of travel patterns and mode usage as passenger traffic grows and alternative ground transport options, such as bus services, coaches and minibus, taxis and rideshare become more available.
- The influence of pay-to-use parking options on passenger ground transport choices and distribution of mode usage.
- Public appetite for how difficult it is to find an available parking space at busy times.

Car parking will benefit from segmentation into different uses, with each use suiting a different location on the site. Long-stay parking is typically situated further from the terminal and would suit the area to the south of the Main Apron, where the walking distance to and from the terminal is greatest. Short-stay parking is more suited to areas close to the terminal, where meeters and greeters can park for a shorter time to farewell departing passengers or while waiting for arriving flights. Short-stay parking is also suited to the pick-up and return of rental vehicles and as traffic grows, these processes may be smoothed by allocation of rental cars to a dedicated area within the short-stay parking zone.

It is estimated that the Master Plan concept can deliver between 400 and 470 public parking spaces, depending on the area available for public parking in the area currently occupied by Merimbula Aircraft Maintenance. If the current hangar building is retained, that could be re-purposed for rental car overnight storage and valet, with approximately 10-15 external spaces available for either public parking or reserved for rental car collection/return. If the building is removed and the area dedicated to public parking, then around 65-70 spaces are possible in this area.

If this total number of spaces proves to be insufficient, then the options to deliver additional parking spaces are as follows:

- Provision of overflow parking in the Southern Precinct (around 50 spaces are possible in the northern part of this precinct, which would have walking distances to the terminal comparable with the proposed long-term parking south of the Main Apron. More are possible but would have considerable walking distances).
- Multi-storey addition to the long-term parking (the eastern half of the proposed long-term parking south of the Main Apron has potential for an additional parking level below the obstacle limitation surfaces, which could provide a further 50 or so spaces).
- Re-alignment of Arthur Kain Drive to the east, subject to the outcomes of further investigations, which could potentially deliver 100-150 spaces.

5.2.2.3 External intersections

To facilitate the internal traffic flows outlined above in Section 5.2.2.1, a new external intersection to Arthur Kaine drive is proposed to the south of the existing development area. The location is similar to a temporary access that has previously been used for construction works. This intersection would be designed to accommodate all vehicle movements (i.e. left and right turns into and out of the site) and is intended to be the primary entry and exit point for public drop-off (whether kerbside or via short stay parking), long-term parking, bus, coach and minibuses.

In addition, the existing entry-only intersection to the Commercial and GA Precinct internal access road would be converted to allow a similar range of turning movements as the proposed southern intersection. This is intended to be the primary access point for short-stay parking for passenger pickups.

The existing intersection, which is approximately equidistant between the proposed southern and northern accesses would be closed.

5.2.3 Other Facilities and Development

Other elements that are required to be incorporated into the development considerations include:

- The possibility of a solar generating facility in the area between the northern end of the runway and the boat ramp car park[11].
- Additional solar energy generation through the inclusion of solar panels on the terminal roof, car park shelters and other buildings including private hangars.
- The provision of suitable electric vehicle (EV) charging stations, both for airport patrons to use but potentially for the convenience of the wider public. These are likely to be located throughout the long-term and short-stay parking and fast charging stations could potentially be provided in the Southern Precinct as part of a commercial facility.
- Car rental overnight storage and depot facilities (wash and valet, charging and potential refuelling) could be located in the Southern Precinct.
- In the long-term, facilities for accommodating Advanced Air Mobility vehicles could be beneficial, depending on the extent of uptake of these new technology opportunities with

[11] Whilst there are acknowledged risks in relation to glare from solar photovoltaic arrays and aircraft operations, recent experience in the US indicates that the impacts to aircraft are largely fleeting and transitory, and similar in nature to that experienced from water bodies and other phenomena. A number of solar generating facilities have been successfully implemented at Australian airports include Melbourne (Tullamarine) without adverse impact. A preliminary solar glare hazard analysis of a conceptual facility at the northern end of the Merimbula Airport site indicates that there would be no unacceptable adverse impact on pilots. This would need further investigation and validation of both aviation and non-aviation (glare/amenity impact to residences and other off-airport users) as part of the detailed design of such a facility.

the region. A 'vertiport' to handle the landing, take-off and parking of eVTOL vehicles could be investigated for inclusion in the Southern Precinct.

5.3 Implementation triggers and anticipated timing

Implementation triggers and anticipated timing of delivery of the key aviation and landside facilities described in Section 5.1 and 5.2 above are summarised in Table 2, in approximate expected order of delivery. Implementation timing will vary dependent on timing of trigger events and funding opportunities.

Table 2: Key projects, implementation triggers and anticipated timing

Key projects, implementation triggers and anticipated timing		
Project	**Trigger**	**Anticipated timing**
Short stay car park expansion	Existing car park demand	2025
Southern long term car park, new southern intersection, bus & coach access	Existing car park demand	2025
Ultimate runway extensions (80m each end)	Council D.A. time constraint	2027
Main Apron Expansion	Requirement for two overlapping Dash 8 aircraft on apron	2027 (2025 – 2029)
Terminal expansion, external works, public and mini-bus drop-off	Security screening introduction Required to operate Dash8-Q400 to full capacity	2028
Asphalt overlay resurfacing of existing runway, taxiway B and main apron areas	Existing seal end-of-life replacement Required to accommodate E190 / A220 operations	2032
Pavement strengthening overlay	Required to accommodate B737 / A320 operations	2032 – 2043

6 Development Concept

The facility requirements identified in the previous section have been used to inform the overall development concept for Merimbula Airport over the coming 20 years to 2043. The concept and land use plan provide a framework to guide development decisions, with flexibility to adapt the uses in some areas to suit future needs as demand eventuates.

6.1 Land Use Plan

The land use plan is shown in **Figure 18** below and maximises the available land for development within the Merimbula Airport site, taking account of the identified constraints.

6.2 Airside Development Concept

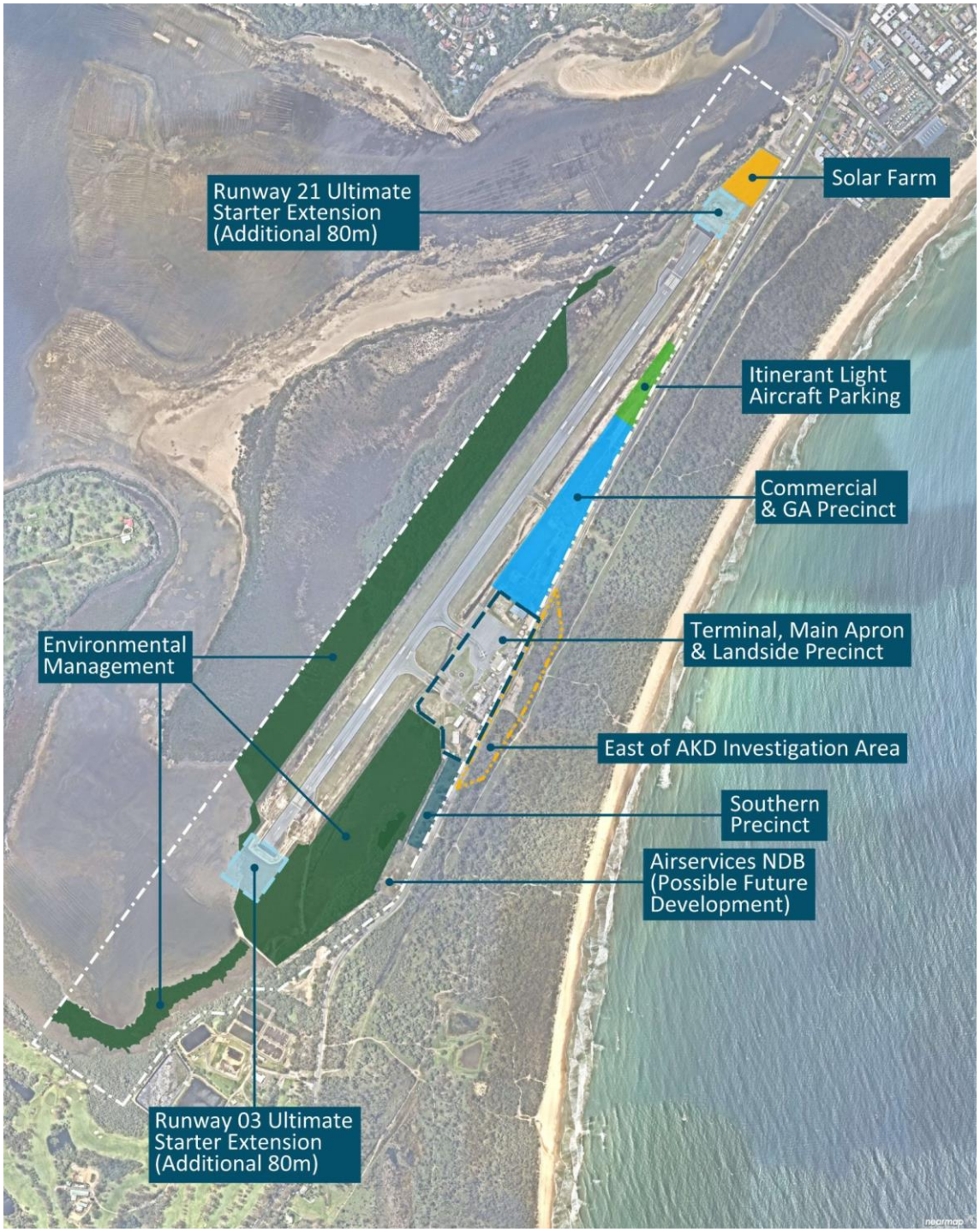
The key components of the airside facilities development concept are:

- Provision of the Runway 03 and Runway 21 ultimate starter extension additional length of approximately 80m at each end. Council has development approval for these ultimate extensions, with completion required by December 2027. Securing funding and agreeing design with CASA are a priority in terms of airside development.
- Additional light aircraft itinerant parking provision to the north of the Commercial and GA Precinct, with an extension of Taxiway F to provide an additional connection to the runway and improve aircraft flows.
- Extension of the Main Apron to the south to provide an additional two (2) airline parking positions, along with the upgrade of Taxiway C to accommodate heavier aircraft in the future.
- Reservation of space adjacent to the northern edge of the Main Apron to allow future reconfiguration of the parking positions to provide additional capacity and flexibility for freight and aeromedical aircraft usage, and contingency airline parking in the event of breakdown.
- Provision of a possible dedicated aeromedical aircraft position and associated patient transfer facility in the area between the Main Apron and the Commercial and GA Precinct (east of the current Merimbula Aircraft Maintenance hangar).

6.3 Landside Development Concept

The landside development concept encompasses two adjacent precincts which are required between them to accommodate the future needs of the Merimbula Airport terminal and ground access arrangements. These are the areas north, south and east of the existing terminal and Main Apron (the Terminal, Main Apron and Landside Precinct) and the area further south between the existing development and the Airservices NDB (the Southern Precinct). Key elements of each precinct are noted under the relevant sub-sections below.

Figure 18: Land Use Plan



6.3.1 Terminal, Main Apron and Landside Precinct

Key elements of this precinct are:

- Expansion of the terminal to accommodate peak flows of 150-200 passengers each way.
- Provision of a mix of long-term, short-stay and rental car collection/drop-off parking spaces, with an expected minimum requirement of around 450 total spaces required and potentially as many as 600.
- Access for public bus and private coach operators.
- A public drop-off area with space for minibus drop-off and pick-up.
- Pick-up areas for taxis and rideshare operators as well as public waiting in the short-stay parking areas.
- Retention and servicing of the existing fuel facility.

Given the tightly constrained area available to accommodate this intensive use, and the interrelationships between the different components of the precinct, this Master Plan has put considerable emphasis on investigating how this area could work. Although some aspects, such as the detailed design of the external intersections and the exact allocation of different car parking uses, will need to be determined as the design development process unfolds, taking into account data and statistics on actual use and demand, a visualisation of the possible precinct layout is provided in **Figure 19** to **Figure 22** below.

6.3.2 Southern Precinct

The Southern Precinct presents an opportunity to provide flexibility to accommodate a range of uses that do not require direct adjacency to the terminal. The actual uses will be determined based on evolving needs but for the purposes of the Master Plan, the following potential uses have been identified:

- Rental car overnight storage, valet and wash facilities.
- Possible overflow public parking.
- Electric vehicle (EV) fast charging facilities.
- Valet parking services.
- Council/airport operations depot.
- Vertiport and AAM facilities.

Figure 19: Perspective View of Terminal Area Concept

Figure 20: Perspective View of Car Park, Bus and Coach Access

Figure 21: Concept View Looking North

Figure 22: Perspective of Northern Car Park Concept

7 Airport Safeguarding Plan

Safeguarding of the airport from incompatible development in the vicinity of the runway is essential to maintain the safety of aircraft operations. The Australian government has developed the National Airports Safeguarding Framework to assist airport operators and local governments in managing land use and development in the vicinity of airports to achieve this goal.

7.1 National Airports Safeguarding Framework

The National Airports Safeguarding Framework (NASF) is a national land use planning framework that aims to:

- Improve community amenity by minimising aircraft noise-sensitive developments near airports including through the use of additional noise metrics and improved noise-disclosure mechanisms; and
- Improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by jurisdictions on various safety-related issues.

The NASF was developed by the National Airports Safeguarding Advisory Group (NASAG), comprising of Commonwealth, State and Territory Government planning and transport officials, the Australian Government Department of Defence, the Civil Aviation Safety Authority (CASA), Airservices Australia and the Australian Local Government Association (ALGA).

NASF currently consists of a set of seven principles and nine guidelines. The full NASF principles and guidelines can be found on the Department of Infrastructure and Regional Development's website[12]. The NASF principles are as follows, and each Guideline is described in the following subsections.

- **Principle 1:** The safety, efficiency and operational integrity of airports should be protected by all governments, recognising their economic, defence and social significance
- **Principle 2**: Airports, governments and local communities should share responsibility to ensure that airport planning is integrated with local and regional planning
- **Principle 3:** Governments at all levels should align land use planning and building requirements in the vicinity of airports
- **Principle 4**: Land use planning processes should balance and protect both airport/aviation operations and community safety and amenity expectations
- **Principle 5**: Governments will protect operational airspace around airports in the interests of both aviation and community safety
- **Principle 6:** Strategic and statutory planning frameworks should address aircraft noise by applying a comprehensive suite of noise measures
- **Principle 7:** Airports should work with governments to provide comprehensive and understandable information to local communities on their operations concerning noise impacts and airspace requirements.

[12] https://www.infrastructure.gov.au/infrastructure-transport-vehicles/aviation/aviation-safety/aviation-environmental-issues/national-airports-safeguarding-framework.

7.2 Aircraft Noise

The established Australian Noise Exposure Forecast (ANEF) system and the Australian Standard AS *2021:2015 Acoustics – Aircraft noise intrusion – Building siting and construction* are recognised by a number of jurisdictions and represent the principal tools for ensuring compatibility in land use planning around airports with respect to aircraft noise intrusion in Australia.

However, the 20 and 25 ANEF zones do not capture all high noise affected areas around an airport. NASF Guideline A: *Measures for Managing Impacts of Aircraft Noise* provides guidance to Commonwealth, State, Territory and Local Government decision makers to manage the impacts of noise around airports. NASF Guideline A provides additional complementary noise measures that may be considered in conjunction with the ANEF system, specifically N-Above contours which indicate areas subject to a given number of events reaching or exceeding a specified noise level. Guideline A recommends using 60 dB(A), 65 dB(A) and 70 dB(A) noise levels for N-Above contours, termed N60, N65 and N70 respectively.

The 2013 Merimbula Airport Master Plan included an Australian Noise Exposure Concept (an informal version of the ANEF that has not been endorsed for technical accuracy by Airservices Australia) as well as N60 and N70 contours. These were based on the 2033 forecast aircraft movement levels of around 16,500 movements per year and are described in Section 7 of the *Merimbula Airport Master Plan 2033* with maps of the contours in Appendix B of that document.

As part of this Merimbula Airport Master Plan, council has had the noise modelling updated to take account of the forecast movement level for 2043 of 24,000 movements and to upgrade the ANEC to a formal ANEF through endorsement by Airservices Australia. **Figure 23** below shows the ANEF Contours resulting from the modelling as endorsed by Airservices Australia. The ANEF 20 contour, which represents the outer limit of land use planning restrictions in accordance with AS2021:2015 *Acoustics – Aircraft Noise Intrusion Building Siting and Construction*, is shown with a dashed line. (Note: A formal version of the ANEF chart has been prepared separately for reference in the Bega Valley Local Environmental Plan 2013).

Figure 24 presents the updated N60 contours and **Figure 25** shows the updated N70 contours, both of which are based on the same modelling as the endorsed ANEF.

The projected noise levels vary from those in the *Merimbula Airport Master Plan 2033* and cover a greater extent, for reasons including (but not limited to) the following:

- An increase in forecast aircraft movements from 16,500 to 24,000 per year (a 45% increase).
- Inclusion of some larger aircraft types, in particular Airbus A220 and Boeing 737 MAX 8, in the forecast airline mix and a greater number of larger private jet aircraft in the GA forecasts.
- A more realistic potential aircraft mix based on better understanding of airline fleet replacement opportunities and better records of existing GA aircraft types gathered by Council.
- A change in the industry-standard noise modelling software used to develop the contours, from the FAA's Integrated Noise Model to the Aviation Environmental Design Tool (AEDT) with updated noise propagation algorithms.
- Calibration of some aircraft noise levels, particularly those of the Dash 8 aircraft, to improve the correlation with actual recorded noise levels of these operations at other Australian airports.

Figure 23: ANEF Contours

Figure 24: N60 Contours

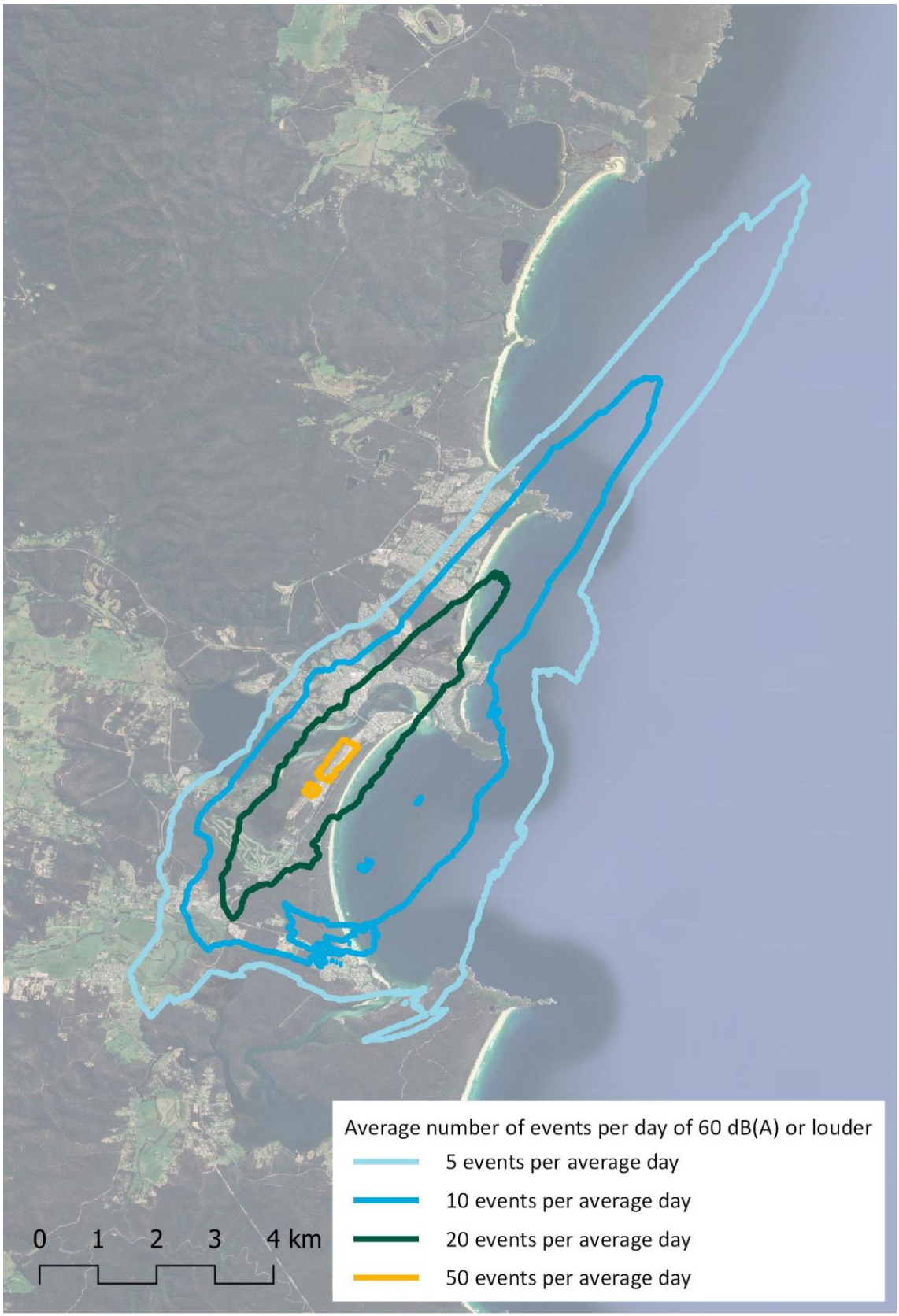


Figure 25: N70 Contours

7.3 Building Generated Windshear and Turbulence

The purpose of NASF Guideline B: *Managing the Risk of Building Generated Windshear and Turbulence at Airports* is to assist land use planners and airport operators in their planning and development processes to reduce the risk of building generated windshear and turbulence at airports near runways.

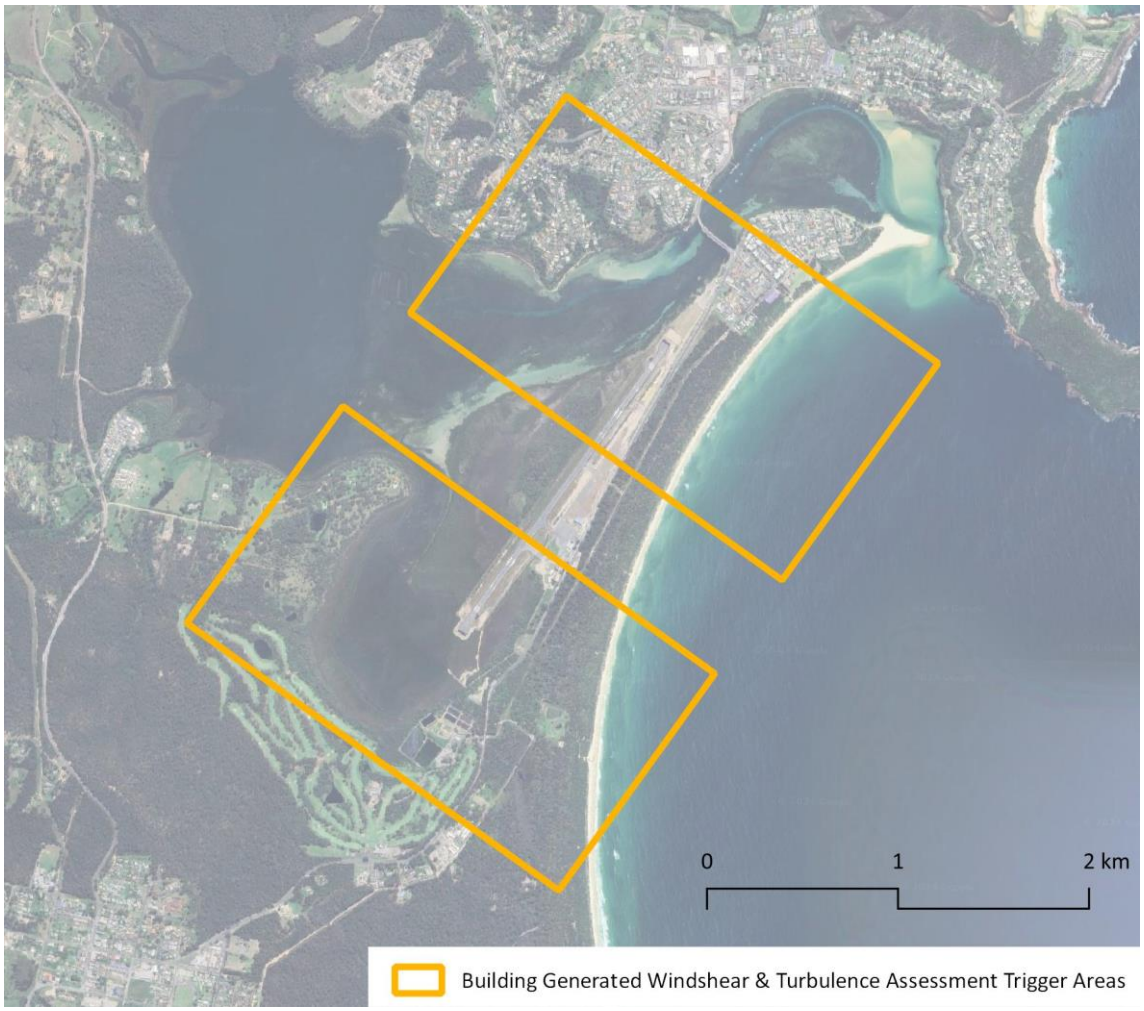
Applicability of this Guideline is initially determined by the location of the building within an 'assessment trigger area' around the runway ends, that is:

- 1200 metres or closer perpendicular from the runway centreline (or extended runway centreline);
- 900 metres or closer in front of runway threshold (towards the landside of the airport); and
- 500 metres or closer from the runway threshold along the runway.

The guideline recommends that all developments within the assessment trigger areas which will infringe a 1:35 sloping surface from the runway centreline should be subject to further assessment.

Figure 26 shows the assessment trigger areas for Merimbula Airport Runway 03/21 based on the threshold locations.

Figure 26: Building Generated Windshear and Turbulence Assessment Trigger Areas



7.4 Wildlife Hazards

NASF Guideline C: *Managing the Risk of Wildlife Strikes in the Vicinity of Airports* provides guidelines to State/Territory and local government decision makers to manage the risk of collisions between wildlife and aircraft at or near airports where that risk may be increased by the presence of wildlife-attracting land uses.

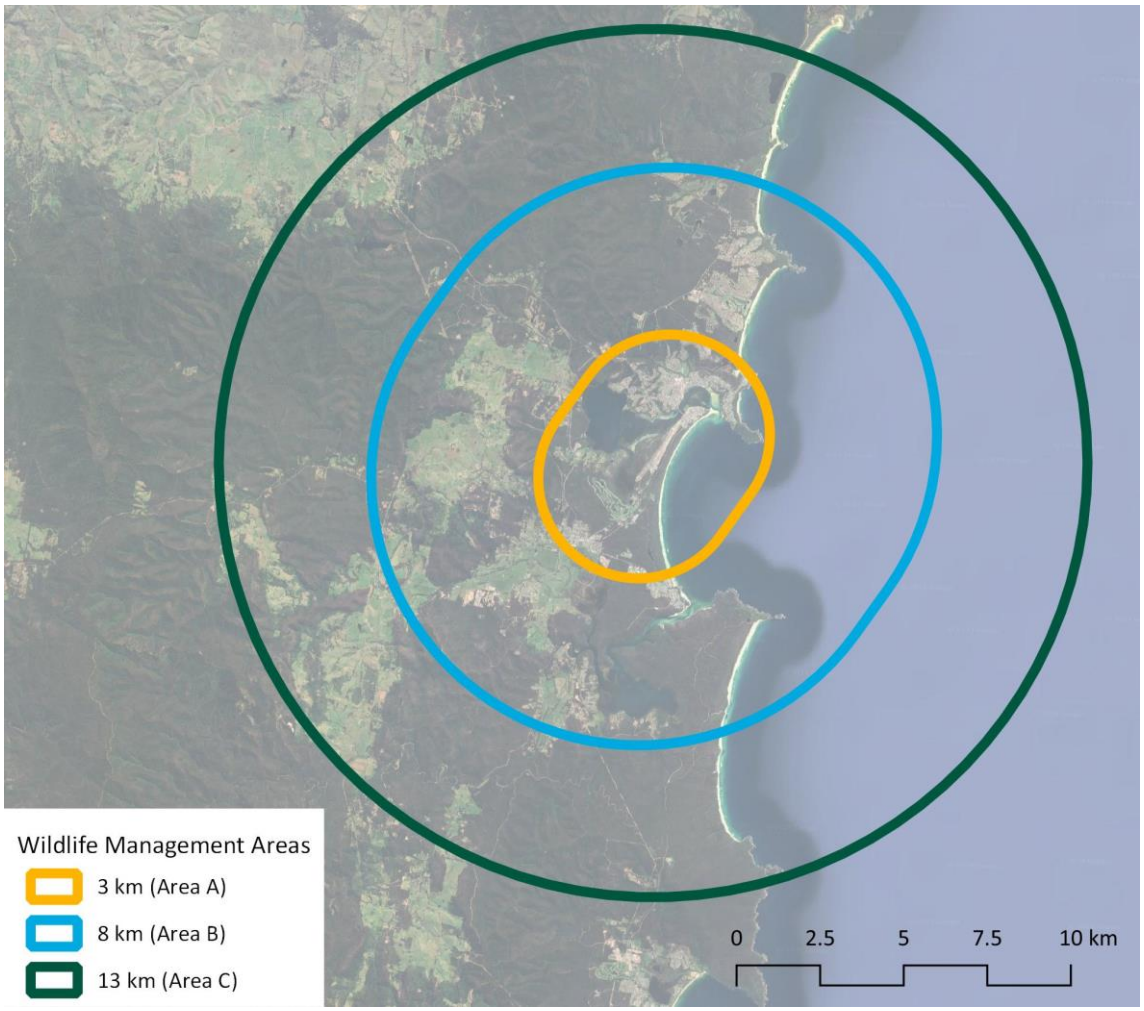
Guideline C recommends that airport operators identify and make public three (3) wildlife management areas for the airport, as follows:

- Off-airport land within 3 km of the aerodrome reference point (Area A);
- Land between 3 km and 8 km from the aerodrome reference point (Area B); and
- Land between 8 km and 13 km from the aerodrome reference point (Area C).

The Guideline permits airport operators to adjust the perimeters of Areas A and B based on a wildlife hazard expert recommendation and with the agreement of the relevant state or territory government. This is typically done so that the 3 km and 8 km distances are measured from the ends of the runway(s), rather than the aerodrome reference point.

Figure 27 illustrates the 3 km, 8 km and 13 km wildlife management areas in relation to Merimbula Airport. The 3 km and 8 km areas in Figure are illustrated from the ends of the published Runway 03/21 strip (60 m prior to the thresholds at each end).

Figure 27: Wildlife Management Areas



7.5 Wind Farms

NASF Guideline D: *Managing the Risk to Aviation Safety of Wind Turbine Installations* (Wind Farms)/Wind Monitoring Towers, provides guidance to State/Territory and local government decision makers, airport operators and developers of wind farms to jointly address the risk to civil aviation arising from the development, presence and use of wind farms and wind monitoring towers.

Proponents of such installations should take account of Guideline D in undertaking assessments of the impacts of the proposals, including on aviation.

Council should be aware of Guideline D and it may assist in evaluating and commenting on any wind farm proposals within 30 km of Merimbula Airport.

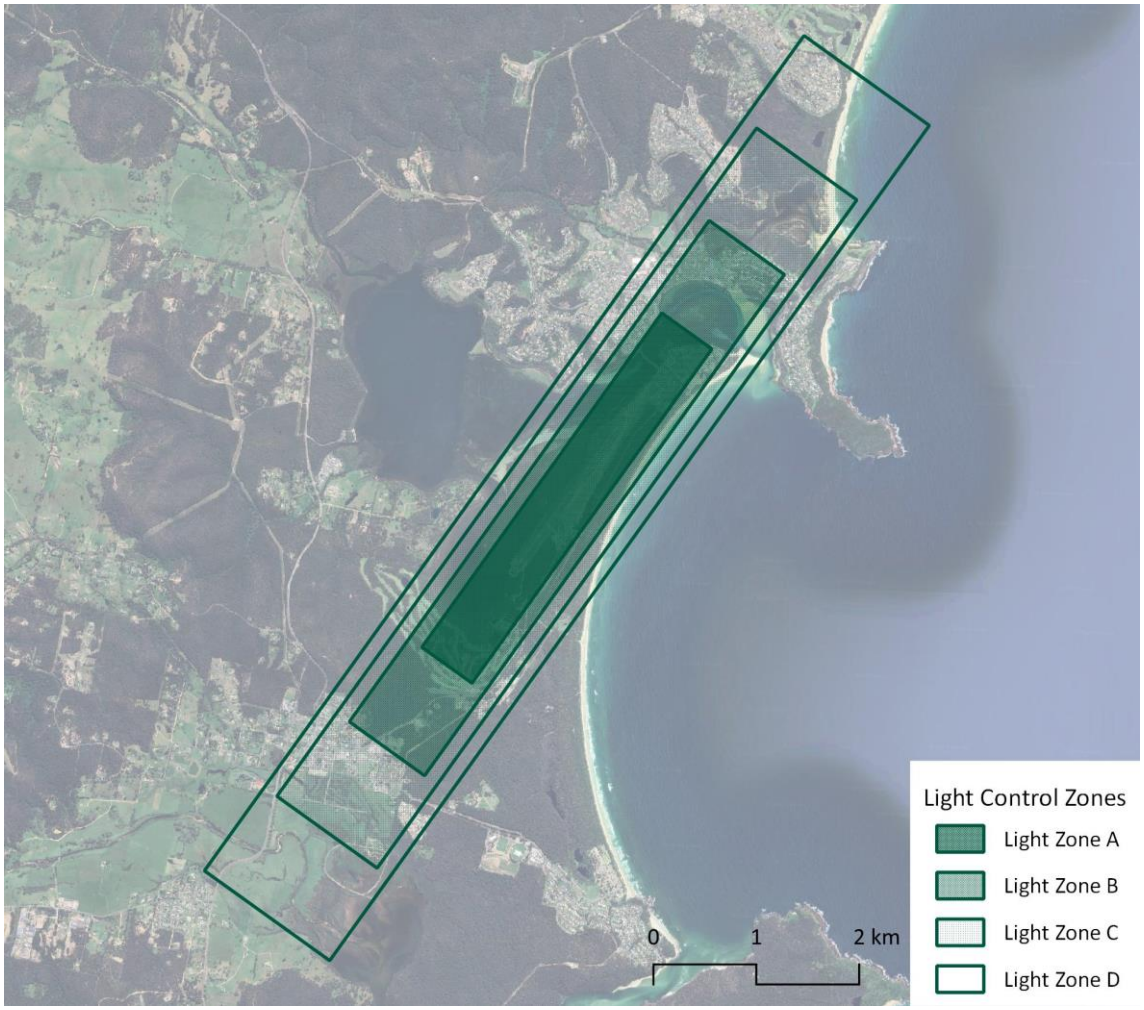
7.6 Lighting

NASF Guideline E: *Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports*provides guidance on the risk of distractions to pilots of aircraft from lighting and light fixtures near airports. The CASA Part 139 (Aerodromes) Manual of Standards 2019 Section 9.144: Lights – requirements for zones sets out the restrictions and the degree of interference ground lights may acceptably cause as a pilot approaches and provides advice to lighting suppliers on the general requirements for lighting within a 6 km radius of a known aerodrome.

Within this 6 km area there exists a primary area which is divided into four light control zones: A, B, C and D. These zones reflect the degree of interference ground lights can cause pilots as they approach. **Figure 28** illustrates the light control zones and restrictions on lighting levels for Merimbula Airport. These zones are based on the ends of the ultimate starter extensions as these are to be lit in accordance with the requirements for runways and it is important to ensure pilots can clearly understand the runway layout when approaching to land.

Council should consider Guideline E in relation to any proposed lighting installations on airport, as well as off-airport (for example, associated with sports fields, industrial facilities and similar) within six (6) kilometres of Merimbula Airport.

Figure 28: Light Control Zones



7.7 Protected Operational Airspace

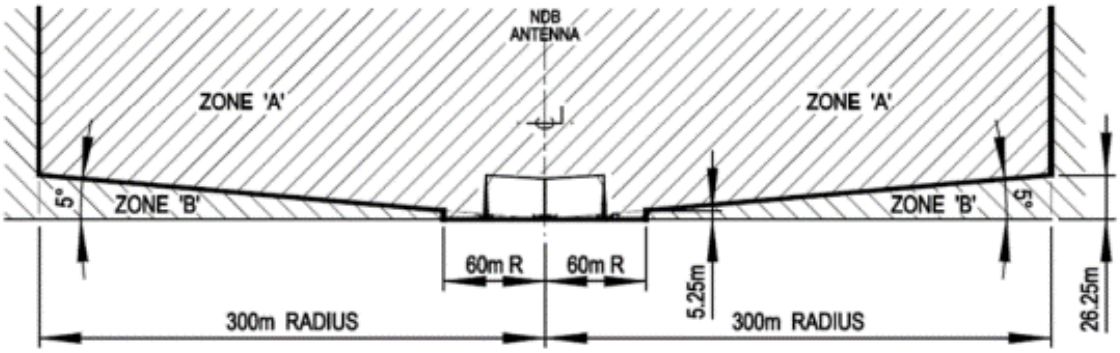
A map of the Obstacle Limitation Surfaces (OLS) required to be protected under the CASA Part 139 (Aerodromes) Manual of Standards 2019 is provided on Council's website. No changes to these OLS are proposed under this Master Plan 2023-2043. As noted previously, in order to provide for the possible introduction of larger aircraft operations (subject to regulatory safety case), a 150 m runway strip and associated transitional obstacle limitation surfaces must be preserved.

Future changes to OLS requirements are understood to be in preparation by the International Civil Aviation Organisation (ICAO). These changes may make it more straightforward to accommodate larger aircraft types without the need for detailed site-specific safety case at Merimbula Airport. At the time of Master Plan preparation, these changes are expected to be finalised by ICAO by approximately 2026, with formal adoption and incorporation into Australian aerodrome standards taking a further three years or so. These changes, if and when introduced, are unlikely to substantially change the requirement for a 150 m wide runway strip as a prerequisite for larger aircraft.

7.8 Communication, Navigation and Surveillance (CNS) Facilities

The purpose of Guideline G: *Protecting Aviation Facilities – Communication, Navigation and Surveillance (CNS)* is to provide a consistent approach to land use planning protection of CNS facilities. Guideline G assists land use planning decision makers with guidance for assessing development proposals in Building Restricted Areas (BRA). A non-directional beacon (NDB) is located on Merimbula Airport, towards the south of the site. Attachment 3 to the Guideline provides the BRAs for aviation facilities, including the NDB, as shown in **Figure 29**.

Figure 29: NDB Building Restricted Area Requirements



Building Restricted Area	Location of development	Action required
Zone A	If development is located: a. within 60 metres of the Non-Directional Beacon antenna; or b. between 60-300 metres from the Non-Directional Beacon antenna and the development will cross the zone boundary (defined as an elevation angle of 5° from ground level at the centre of the Non-Directional Beacon antenna).	All applications must be referred to Airservices Australia for assessment.
Zone B	If development is located between 60-300 metres from the centre of the Non-Directional Beacon antenna and the development will not cross the zone boundary.	No requirements.
General guidance: • within a 60 metres radius from the centre of the Non-Directional Beacon antenna vegetation should be kept to less than 60cm high. Naturally occurring native flora may be allowed to exceed 60cm subject to a site environment plan. • high voltage overhead powerlines 33kv or greater should be at least 300 metres from the centre of the Non-Directional Beacon antenna.		

Source: NASF Guideline G

Although there are at present no indications that the Merimbula NDB is likely to be decommissioned in the foreseeable future, it is nevertheless possible that at some point the NDB will become unnecessary and could ultimately be decommissioned. In the meantime, development will need to accommodate the NDB Building Restricted Area (BRA) as defined in NASF Guideline G.

7.9 Public Safety Areas

NASF Guideline I: *Managing the Risk in Public Safety Areas at the Ends of Runways* provides guidance on approaches for the application of a Public Safety Area (PSA) planning framework in Australian jurisdictions. The Guideline is intended to ensure there is no increase in risk from new development and to assist land-use planners to better consider public safety when assessing development proposals, rezoning requests and when developing strategic land use plans.

Guideline I provides two examples of most relevance to Australia (the UK and Queensland approaches) to developing PSA extents, however it is notable that since publication of Guideline I the UK has updated its policy regarding the establishment, size and shape of PSAs.

Figure 30 illustrates the current Queensland PSA template and the current UK Public Safety Zone template for airport with 18,000 – 45,000 air transport movements. Under the Queensland State Planning Policy (SPP), PSAs are applicable at state strategic airports (as designated under the SPP) for runways with jet airline services or those handling more than 10,000 movements per year (excluding light aircraft movements).

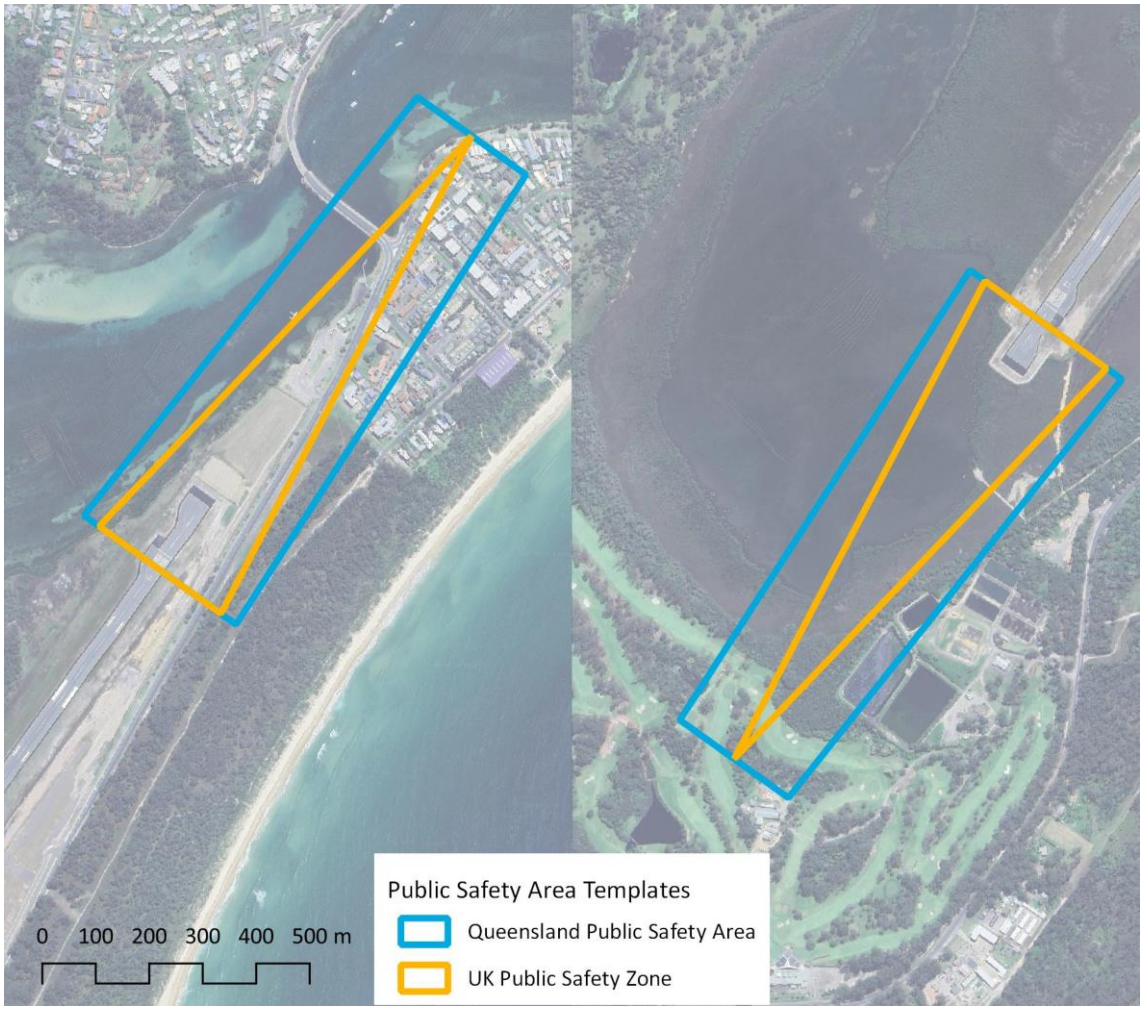
Under NASF Guideline I, an alternative approach is to establish a PSA based on an estimated individual risk level of 1 in 100,000 per year. To do this requires detailed forecasts of future aviation activity.

The general principles applicable to public Safety areas, whether under NASF, Queensland or the UK policies, are that development within a public safety area does not involve:

a. An increase in the number of people living, working or congregating in the area.
b. The manufacture, use or storage of flammable, explosive, hazardous or noxious materials.

NASF Guideline I provides more detailed guidance on compatible and incompatible land uses within public safety areas.

Figure 30: Queensland and UK Public Safety Templates



8 Summary

This Merimbula Airport Master Plan 2043 has been developed to update the previous Master Plan which was adopted by Council in 2013 and covered the period to 2033. As a result of considerable change for Merimbula Airport over the intervening 10 years, including changes to the regulatory environment, evolved usage of the airport, and a better understanding of relevant constraints derived through the delivery of recent upgrades, an update to the Master Plan was necessary to appropriately map out development requirements over the next 20 years.

The updated Master Plan has been prepared following the Australian Airports Association's (AAA) Airport Practice Note 4 *Regional Airport Master Planning Guideline*, which has involved targeted consultation with key stakeholder and broader consultation with the wider community, over four key stages.

Council, as the Merimbula Airport owner, has an obligation to protect the operational capability of the Airport from the encroachment of incompatible land uses that may lead to restrictions on the use of the Airport that are contrary to the adopted vision. The most significant of these relate to the protection of operational airspace, and aircraft noise. However there are other matters that can impinge on the Airport's operational capability, and these are identified under the Commonwealth Government's National Airports Safeguarding Framework (NASF). In line with the AAA's guidance for regional airport master planning, the Merimbula Airport Master Plan 2043 incorporates a comprehensive Airport Safeguarding Plan addressing the relevant NASF Guidelines, consistent with national application and as adopted by all State and Territory governments across Australia.

Airport master planning is a specialised area of expertise that also requires accredited planning tools and so Council engaged L+R Airport Consulting, who are consultants experienced in the discipline and also familiar with the context of Merimbula Airport, to assist in the preparation of this Master Plan.

The Merimbula Airport Master Plan 2043 documents a framework for development of the Airport that envisages a 20-year planning horizon. It outlines the preferred development concept over that timeframe, to meet expected requirements in a logical manner that balances the various competing demands for limited available space. The framework also recognises there is inherent uncertainty in a 20-year timeframe, including that associated with emerging aviation technologies including industry decarbonisation strategies and the roll-out of Advanced Air Mobility, for which there is no reliable precent on which to base planning strategies. The Master Plan therefore allows for flexibility in implementation based on how events, in particular passenger traffic levels and airport travel habits, develop in reality.

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