



AVIATION INFRASTRUCTURE

6

AVIATION INFRASTRUCTURE

6.1 Introduction

Fundamental to the successful operation of Adelaide Airport is the ongoing development of both airfield and terminals activities to meet the forecast demands in the future. As outlined in Chapter 4 – Forecasts, the number of movements of all aircraft is predicted to increase by 71.6% in the 20-year planning horizon. Similarly, the number of passenger movements is forecast to increase by 128% between 2014 and 2034.

AAL has considered these forecast increases and planned for the development of aviation infrastructure to enable the growth in aircraft and passenger movements to occur in a well-planned and efficient manner.

Aviation infrastructure includes not only the runways, taxiways and aprons for aircraft movements, but also the terminal capacity capable of processing passengers at the forecast rates.

AAL envisages that the proposed developments discussed in this chapter will meet the needs of planning horizon in the Terminals & Business and Runways Precincts, whilst providing a safe and relaxed travel experience that distinguishes Adelaide Airport from other capital city airports in Australia.

This Master Plan does not foreshadow any major runway development within the 20-year planning period.

6.2 Existing Infrastructure

Adelaide Airport currently operates a two-runway system comprised of the main runway (RWY 05/23) which is 3,100 metres long and 45 metres wide, and a secondary cross-runway (RWY 12/30) which is 1,652 metres long and 45 metres wide.

The main runway accommodates larger, long-haul, wide-body international aircraft, as well as smaller domestic and regional aircraft.

The cross-runway is limited by its length to regional aircraft and some domestic operations. However, it is capable of accommodating larger aircraft such as the Boeing B767 and Airbus A330 (up to Code D) for landing only. The cross runway also provides the necessary runway orientation so that the airport can meet the wind useability criteria described in the CASA Manual of Standards, which requires sufficient runway capacity on the cross runway in the event of a 20-knot crosswind on the main runway.

The existing runway system provides sufficient capacity for arriving and departing aircraft to handle the forecast volumes of air traffic within the 20-year forecast period and beyond to the extent of the perceived ultimate capacity predictions.

The existing taxiway system provides for the safe and efficient movement of aircraft between aprons, holding bays and runways. Consideration has been given to supplementing the existing taxiway system to facilitate improved access and egress from the two runways to the adjacent terminal apron and facilitate queuing of aircraft, but this is not proposed within the timeframe of this document.

Apron parking areas are provided for the safe parking of aircraft, transfer of passengers and freight, and to enable the servicing and maintenance of aircraft.

The current aircraft parking capacity at Terminal 1 is 15 Code C (e.g. Boeing B737 or Airbus A320) equivalent bays. This is currently being expanded to 17 Code C equivalent bays by 2015. Increased demand for aircraft parking is expected during the 20-year forecast period.

Airside roads comprise a mixture of both sealed and unsealed roads. As peripheral development is established, these roads will be realigned and where necessary, sealed.

Airside roads on expanded aprons will be established or varied to ensure the safe movement of vehicles around operational aircraft.

The existing terminal, opened in 2005, comprises a 3-level facility of around 33,000 square metres that provides aesthetic, modern and efficient facilities.

The terminal operates a series of flexible ‘swing gates’, which provides the flexibility of passenger boarding lounges to be used for both international and domestic services to match airline schedules.

6.3 Airfield Infrastructure Development

6.3.1 Capacity Monitoring

AAL monitors passenger forecasts and airline scheduling to maintain a forward planning cycle, which allows development of necessary airfield infrastructure. This monitoring extends to busy hour capacity, aircraft route networking, aircraft fleet management and capacity planning.

Capacity planning then extends to include future flexibility for current and next generation aircraft, principles of common-use facilities and flexibility in design. The ongoing evaluation of capacity enables the ready determination of new aviation infrastructure based specifically on demand.

6.3.2 Projected Developments – 2014 to 2019

Apron expansion to the south occurring in 2014/2015 will provide two additional Code C equivalent (B737, A320) bays, which will be fully serviced and suitable for future terminal expansion integration.

Subsequent apron expansion to the north will include relocation of regional airlines to the western side of the northern pier and establishment of three additional Code C gates at the end of the northern pier, which will require the demolition of the former international terminal structure. A tow-off apron will be established at the northern end of the apron adjacent to the ‘cold storage’ building to facilitate parking for long-stay aircraft and allow future expansion flexibility.

A new apron and taxiway connection is to be developed to facilitate the establishment of the adjoining Airport East Precinct aligned with new air freight and hangar development.

A new emergency services apron and connecting taxiway adjoining the Tapleys Precinct is forecast to be developed for the Royal Flying Doctor Service. This will be aligned with a new hangar and administration complex planned for construction in 2015. This will further consolidate the location of emergency services in this area.

Provision is also being made for the development of a new Aviation Rescue and Fire Fighting (ARFF) complex for Airservices Australia. This is expected to be located to the northern side of existing helicopter operations if it is unable to occur in its current vicinity in the Runways Precinct due to future taxiway re-alignments. The redevelopment of this ARFF Service relates to the timing of the introduction of much larger Code F aircraft such as the Airbus A380.

6.3.3 Projected Developments – 2020 to 2034

No major runway development is foreseen within the 20-year planning horizon based upon demand projections.

Taxiway systems will be monitored and varied to coincide with future apron expansion. A new connecting taxiway between Runway 05/23 and taxiway A6 is to be constructed after 2020.

Further apron expansion will continue to the south to match the aircraft parking demand. In addition, the southern apron will be developed either side of the southern terminal pier to allow aircraft parking on both sides and the establishment of a new regional apron complex in the south-western area of the apron.

The north-west apron will be expanded from regional service capacity to also accommodate the full range of Code C aircraft.

Figure 6.1 is a representation of both the existing and forecast aviation infrastructure to be developed within the 20-year planning horizon.

6. AVIATION INFRASTRUCTURE

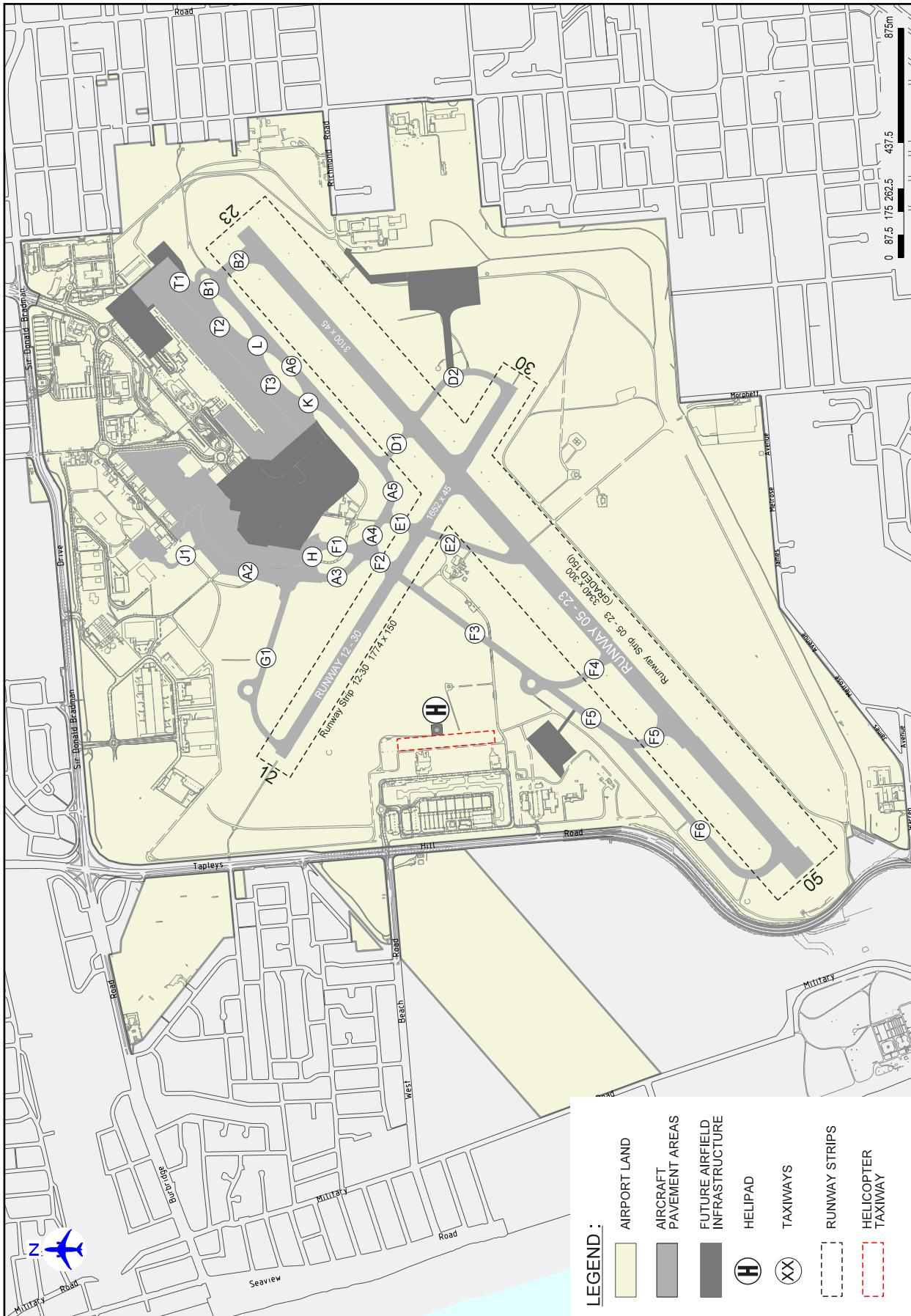


Figure 6.1 Airfield Infrastructure

6.4 Terminals Development

6.4.1 Planning considerations

An integral aspect of Adelaide Airport relates to terminals and associated landside infrastructure that directly service these terminals and passengers, and includes access roads, taxis, bus and valet facilities, plaza open spaces, and car parks.

The ongoing planning for terminals infrastructure is intended to meet and support future passenger and commercial demand within the overall airport precinct taking into account the exceptional growth over the past 10 years.

Future plans to enhance the terminals' landside infrastructure include addressing road, public transport and parking demands, as well as connectivity to surrounding road networks. These objectives are more fully addressed in Chapter 9 – Ground Transport Plan.

The major supporting infrastructure criteria considered within the development process includes:

- performance monitoring of the multi-level car park, road configuration including linking public terminal pick-up / drop-off, taxi and bus services, and the plaza between the terminal and multi-level car park;
- pedestrian and bicycle connectivity between all precinct activities, including terminals, car park, drop off / pick up points, and bikeways external to the airport boundary;
- ongoing enhancement and expansion of retail and amenities within the landscaped plaza to provide a relaxed and unique travel experience;
- efficient vehicle parking facilities offering a range of products, and accommodating the full range of customers that are likely to access the airport, including valet services and car rental expansion;
- relocation of air cargo and freight, and hangars, to the Airport East Precinct;
- development of a new long-stay and staff car park to allow airside expansion;
- a traffic network providing efficient and intuitive flow for all transport modes, including – but not limited to – public and private vehicles, future light rail, and buses and taxis;

- road development that enhances safety and security measures;
- segregation of the various modes of transport where practical, including separation of pedestrians from traffic;
- expansion of the existing multi-level short-stay car park to satisfy future demand; and
- connectivity of a new hotel development to Terminal 1, the multi-level car park, and links to an adjoining new office park fronting Sir Richard Williams Avenue and James Schofield Drive.

Future terminal expansion will include consideration of:

- enhanced security and baggage servicing outcomes for 'front-of-house' areas incorporating flexibility and adaptability;
- expansion of passenger services within the terminal, including the relocation of some ancillary offices nearby;
- the integration and expansion of retailing operations;
- the enhancement of amenities to a level of service standard reflective of existing and future traveller expectations and best class sentiments; and
- redevelopment to match A380 wide-bodied aircraft, including additional aero bridges and lounges.

6.4.2 Projected Development – 2014 to 2019

The expansion of terminal infrastructure will be commensurate with the need to meet passenger growth, service standards, aircraft parking demand, facilitation requirements, regulatory compliance and commercial opportunities.

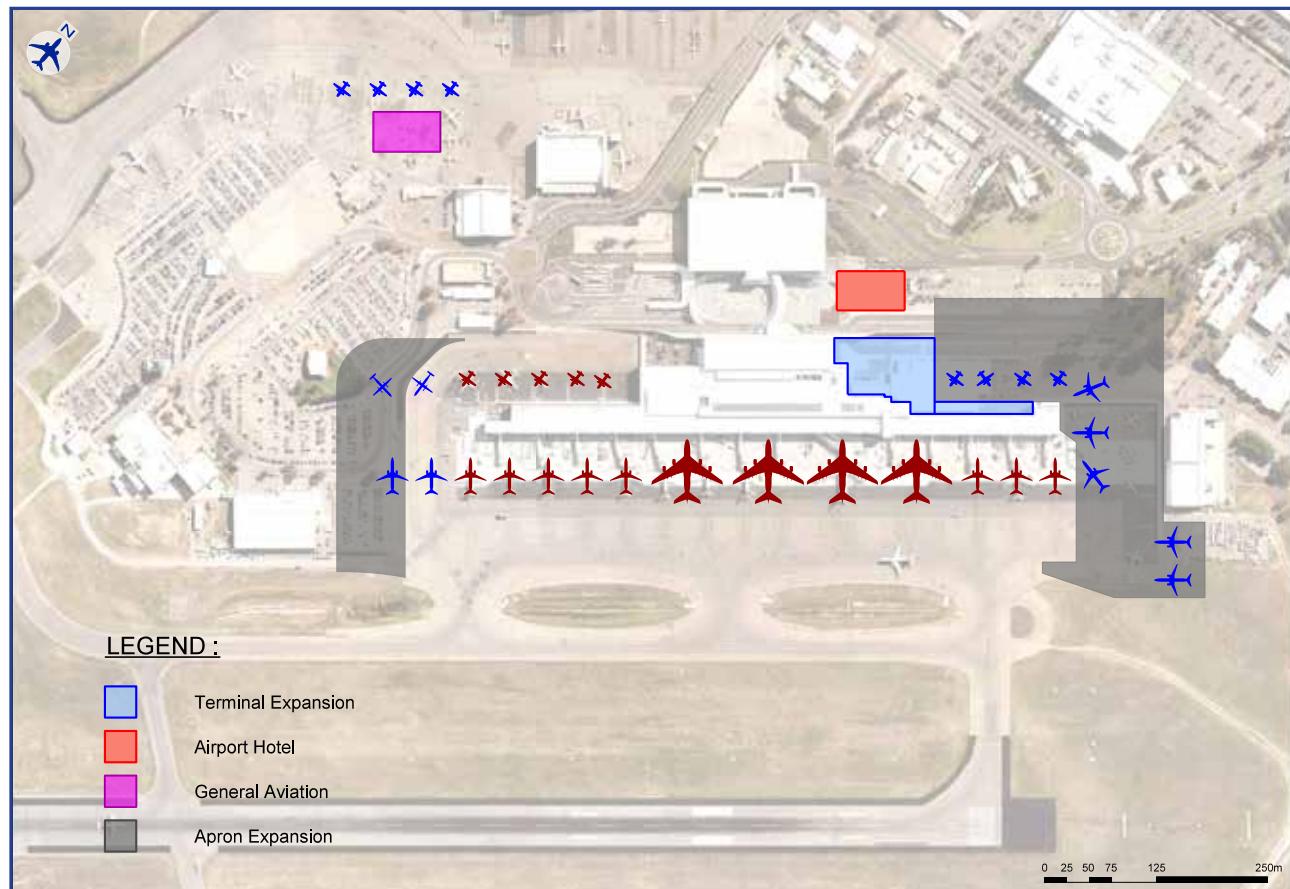
A new general aviation terminal will be developed to replace the existing structure in the vicinity of the former domestic terminal building site and apron area. It will provide facilities for intrastate operations, general aviation and charter operations; particularly relating to the resources sector.

The following schedule of activities describes the planned developments for this timing horizon. Figure 6.2 is an indicative diagram of projected development between 2014 and 2019.

Chapter 11 – Development Program provides information is included on development scale and the economic and environmental aspects of aviation infrastructure expansion to meet demand.

Scheduled Activities: 2014-2019

- hotel development
- demolition of former international terminal building and integration of regional aviation services within Terminal 1
- construction of new northern regional apron
- relocation of terminal offices to adjoining and linked new premises where practical
- provision of expanded and common user self check-in facilities
- dedicated taxi drop off point north of plaza
- expansion of emigration and immigration areas (phase 1)
- expansion of international baggage claim (phase 1)
- expansion of international arrivals hall (phase 1)
- expansion of main security check point
- expansion of northern pier and additional apron parking north
- expansion of retail area and development of new airline lounges at an expanded third level
- construction of general aviation facility (phase 1)
- relocation of existing general aviation facilities.



6.4.3 Projected Development

- 2020 to 2034

The second stage of terminals development during the 20-year planning horizon is scheduled below and Figure 6.3 indicates projected development up until 2034.

Scheduled Activities: 2020-2034

- extension of multi-level car park and car rental facilities by 2000 spaces, and taxi drop-off activities
- expansion of domestic baggage claim/arrivals hall (phase 1)
- expansion of international baggage claim (phase 2)
- expansion of international arrivals hall (phase 2)
- expansion of southern pier and apron parking (phase 2)
- additional international gates; including allowances to suit Airbus A380 arrivals and departures and associated lounges
- expansion of baggage make-up (phase 2)
- further expansion of southern pier and apron parking
- expansion of general aviation facilities (phase 2).

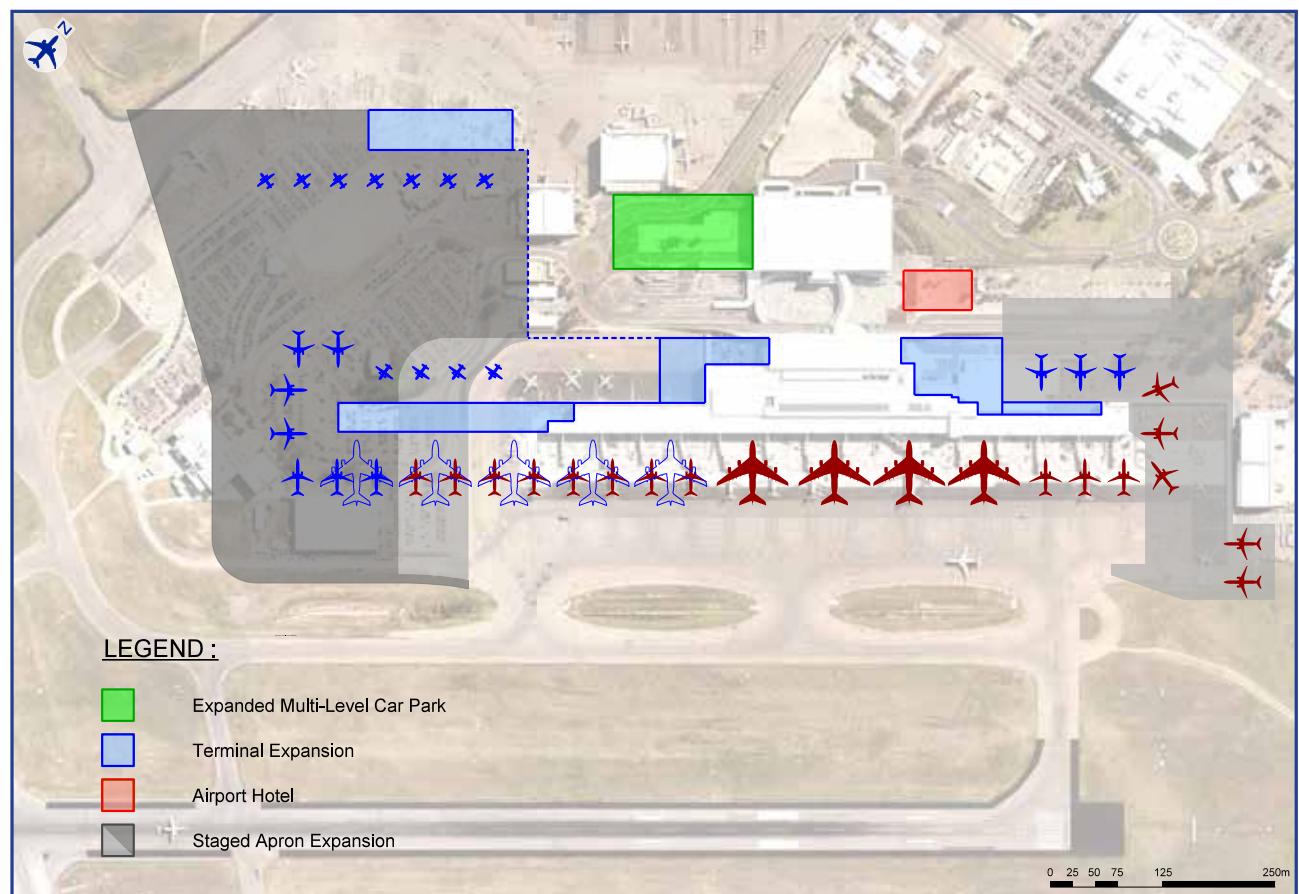


Figure 6.3 Projected Terminals Development 2020-2034