JANDAKOT
AIRPORT

2020

JANDAKOT AIRPORT MASTER PLAN 2020

1. DISCLAIMER

The Jandakot Airport Master Plan 2020 has been prepared to satisfy the requirements of the *Airports Act 1996*.

While all care has been taken in the preparation of this Master Plan 2020:

- JAH makes no claim as to the accuracy or completeness of any of the information or the likelihood of any further matter;
- it should not be relied upon by any other party for any purpose;
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FOREWORD

We are pleased to present the Jandakot Airport Master Plan 2020 which outlines the strategic direction for the efficient and economic development of Jandakot Airport for the next 20 years.

Since privatisation of the airport in 1998, our vision has been to successfully develop and manage Jandakot Airport as a strategically significant aviation hub with a supporting business campus.

Over the past 6 years, we have successfully implemented Master Plan 2014, making significant infrastructure investment to facilitate the development of the airport to achieve our vision.

General aviation does not generate sufficient income for the maintenance and development of airport infrastructure. Other income streams are therefore essential and the development of non-aviation land at Jandakot Airport provides this critical income diversity.

Master Plan 2020 retains the principle concepts of Master Plan 2014 including the provision of the fourth runway and associated taxiways, land use areas, mixed business land use areas and the general access management.

Master Plan 2020 has been prepared in accordance with the *Airports Act 1996* and is the guiding document for the development of Jandakot Airport for the next 20 years.

In preparing this Master Plan we have undertaken significant consultation with key stakeholders including Federal, State and Local Governments, aviation users and community groups.

Master Plan 2020 provides for an appropriate balance of aviation and non-aviation sectors of the airport.

John Fraser
Managing Director, Jandakot Airport Holdings

EXECUTIVE SUMMARY

Jandakot Airport is the only general aviation airport in the Perth Metropolitan Region and is an important infrastructure asset for Western Australia. The airport generates substantial economic benefits to the State economy and to the southwest region. Jandakot Airport occupies an area of 622 hectares and is located 16 kilometres south of the Perth Central Business District.

MASTER PLAN 2020

The review of Master Plan 2014 has been undertaken to meet the requirements of the *Airports Act 1996*.

Master Plan 2020 retains the principal concepts of Master Plan 2014 including the provision of the fourth runway and associated taxiways, aviation land use areas, mixed business land use areas and the general access arrangement.

AIRPORT VISION

Jandakot Airport Holding's vision is to successfully develop and manage Jandakot Airport as a strategically significant aviation hub with a supporting business campus.

REGIONAL AND ECONOMIC SIGNIFICANCE

The State Government has recognised Jandakot Airport as a vital piece of infrastructure. The *Airports Act 1996* encourages the airport to adopt a planning philosophy consistent with that of State and Local Government. Master Plan 2020 has been prepared in close consultation with relevant authorities, with the airport commercial areas adopting the City of Cockburn's planning framework.

The ongoing development and growth of Jandakot Airport will result in the sustained economic significance of the airport operations. Major capital works proposed for the future include the construction of a fourth runway, a minor extension to the primary runway, new road access to the east and continued mixed business development.

Jandakot Airport contributes both directly and indirectly to the economy of Western Australia.

FORECAST GROWTH

Jandakot Airport is one of the busiest general aviation airports in Australia in terms of aircraft movements, having averaged 215,000 movements per annum over the last three years. The airport could expect to reach the theoretical operating capacity of 460,000 fixed wing and 66,000 helicopter movements per annum within the 20 year planning horizon of this Master Plan.

AIRPORT LAND USE

The Jandakot Airport Master Plan 2020 projects the following land use and proportion of total land area:

- Conservation 119 hectares (19%);
- Aviation Operations (includes runways and taxiways and aviation development) - 257 hectares (42%);
- Mixed Business - 201 hectares (32%); and
- Roads and Services - 45 hectares (7%).

AVIATION DEVELOPMENT

The planned configuration of the airfield at the ultimate development of the airport includes the following potential new works:

- The proposed fourth runway 12L/30R, which is to be 990 metres in length and 18 metres wide, located parallel to the existing runway 12/30;
- The extension of runway 06L/24R from 1,392 metres to 1,600 metres; and
- The augmentation of the existing taxiway system to support the runway developments.

AIRPORT SAFEGUARDING

Land has been reserved for growth in aviation support facilities. Safeguarding systems such as airspace protection, restrictions to external lighting, bird and animal hazard management and public safety are outlined in the Master Plan.

NON-AVIATION DEVELOPMENT

A development strategy for the airport's non-aviation land has been established. The non-aviation precincts proposed are broadly consistent with the City of Cockburn's mixed business use, Directions 2031, Perth and Peel @3.5 Million, and State Planning Policy Activity Centres for Perth and Peel which recognise Jandakot Airport as a 'Specialised Activity Centre'.

The development of non-aviation land is critical to the future delivery of aviation and environment outcomes on the airport as the non-aviation land provides a strategic diversity of income to secure the sustainability of the airport.

GROUND TRANSPORT PLAN

Access to Jandakot Airport is via the following connections:

1. Existing access from Karel Avenue/Berrigan Drive intersection currently being upgraded to a dual lane roundabout;
2. Existing access from Berrigan Drive via Spartan Street (left in/left out only at Berrigan Drive);
3. Existing access from Pilatus Street via Jandakot Road/Berrigan Drive/Dean Road/Pilatus Street signalised intersection; and
4. Proposed East Link road - consultation with State and Local Governments has resulted in a plan to connect to Johnston Road and through to Ranford Road. JAH proposes to extend Orion Road to meet Johnston Road at the boundary of the airport.

SERVICES INFRASTRUCTURE

JAH has invested significantly in the upgrading of services and infrastructure on the airport and will continue to do this to meet the needs of aviation and non-aviation development within the airport.

ENVIRONMENT STRATEGY 2020

In accordance with the *Airports Act 1996*, the Environmental Strategy 2020 for the Jandakot Airport has been updated in this Master Plan and will act as a guide for environmental management of the airport for the next eight years.

STAKEHOLDER AND COMMUNITY CONSULTATION

Consultation with key stakeholders including airport tenants, State and Local Government and community groups was undertaken during the preparation of Master Plan 2020.

IMPLEMENTATION

Master Plan 2020 will be implemented in a staged manner driven by demand. A review of this Master Plan will be required in 8 years.

1. INTRODUCTION

1.1 JANDAKOT AIRPORT

Jandakot Airport is the main general aviation airport in Perth and is one of the busiest airports in Australia in terms of aircraft movements. The airport operates 24 hours a day, 7 days a week, and is vital to the local and regional economy of Western Australia as it provides facilities for tourism, pilot and aviation training, general aviation, services to resource and pastoral sectors and important emergency services such as the Royal Flying Doctor Service, Police Air Wing, RAC Rescue Helicopter and WA Department of Fire and Emergency Services bushfire response.

Jandakot Airport is a Certified Airport under the Civil Aviation Safety Authority Manual of Standards (MOS) Part 139 - Aerodromes.

1.2 OWNERSHIP OF JANDAKOT AIRPORT

Jandakot Airport is located on Commonwealth Government land.

On 1 July 1998 the Commonwealth Government sold a 50 year lease over Jandakot Airport, with an option of a 49 year lease extension, to Jandakot Airport Holdings Pty Ltd (JAH).

1.3 SITE CONTEXT

Jandakot Airport is located 16km south of the City of Perth and 13km east of the Port of Fremantle. The 622 hectare site is within the boundary of the City of Cockburn. The northern boundary of the airport abuts the City of Melville and the north east airport boundary abuts the City of Canning. Jandakot Airport is in close proximity to major population and commercial/industrial areas, providing easy access to the aviation and non-aviation businesses located at the airport. The Jandakot Airport estate in an aerial photograph context is shown in Figure 1.1.

1.4 AIRPORT HISTORY

Plans for Jandakot Airport began in the mid-1950s when it became clear that the capacity and infrastructure of the Maylands Aerodrome was insufficient for the growth in air traffic. Light aircraft operations had continued at Maylands following the relocation of civilian aircraft services to the Guildford Aerodrome (now Perth Airport) in 1946, but within a decade the aging infrastructure at Maylands was not able to support the light aircraft requirements. Land acquisition for a new general aviation airport began in 1959, with 520 hectares of unproductive farmland in Jandakot acquired before the official opening of Jandakot Airport on 1 July 1963. Over the next 11 years the land size was increased to 622 hectares.

Pilot training has been a main focus at Jandakot Airport since 1965 when the Royal Aero Club of WA (RACWA) relocated to Jandakot from Guildford Aerodrome. RACWA was, and continues to be, the largest pilot training organisation in WA. Jandakot Airport has been utilised for overseas pilot training since the 1970s, with the Aviation Academy of Australia set up to train Air Malawi and Air Zimbabwe pilots and RACWA training Singaporean pilots on a regular basis. In the early 1990s dedicated accommodation and training facilities were constructed on the airport for Singapore Flying College and China Southern WA Flying College. Pilot training activity currently constitutes 80% of all aircraft movements at Jandakot Airport.

The role of Jandakot Airport as a major aviation training facility was further enhanced in 2010 when South Metropolitan TAFE redeveloped its Aerospace Training Centre at the airport. In addition to pilot studies, the Aerospace Training Centre provides courses in engineering and aircraft maintenance, ground and cabin crew operations, and airport management.

1.5 PROXIMITY TO OTHER AIRPORTS

Jandakot Airport is situated 19km south-west of Perth Airport, the domestic and international airport serving Perth. The appeal for commercial pilot training activity at Jandakot Airport is largely as a result of the close proximity to Perth Airport, as pilot training and licensing curriculum require students to be able to fly in and around controlled airspace and have access to a variety of suitable navigational aids.

Serpentine Airport is a small airfield situated 30km south of Jandakot. It has one sealed runway and one grass runway and is used primarily for glider and sports aircraft. The airport is unsuitable for commercial pilot training activity due to the short runways and lack of navigational infrastructure.

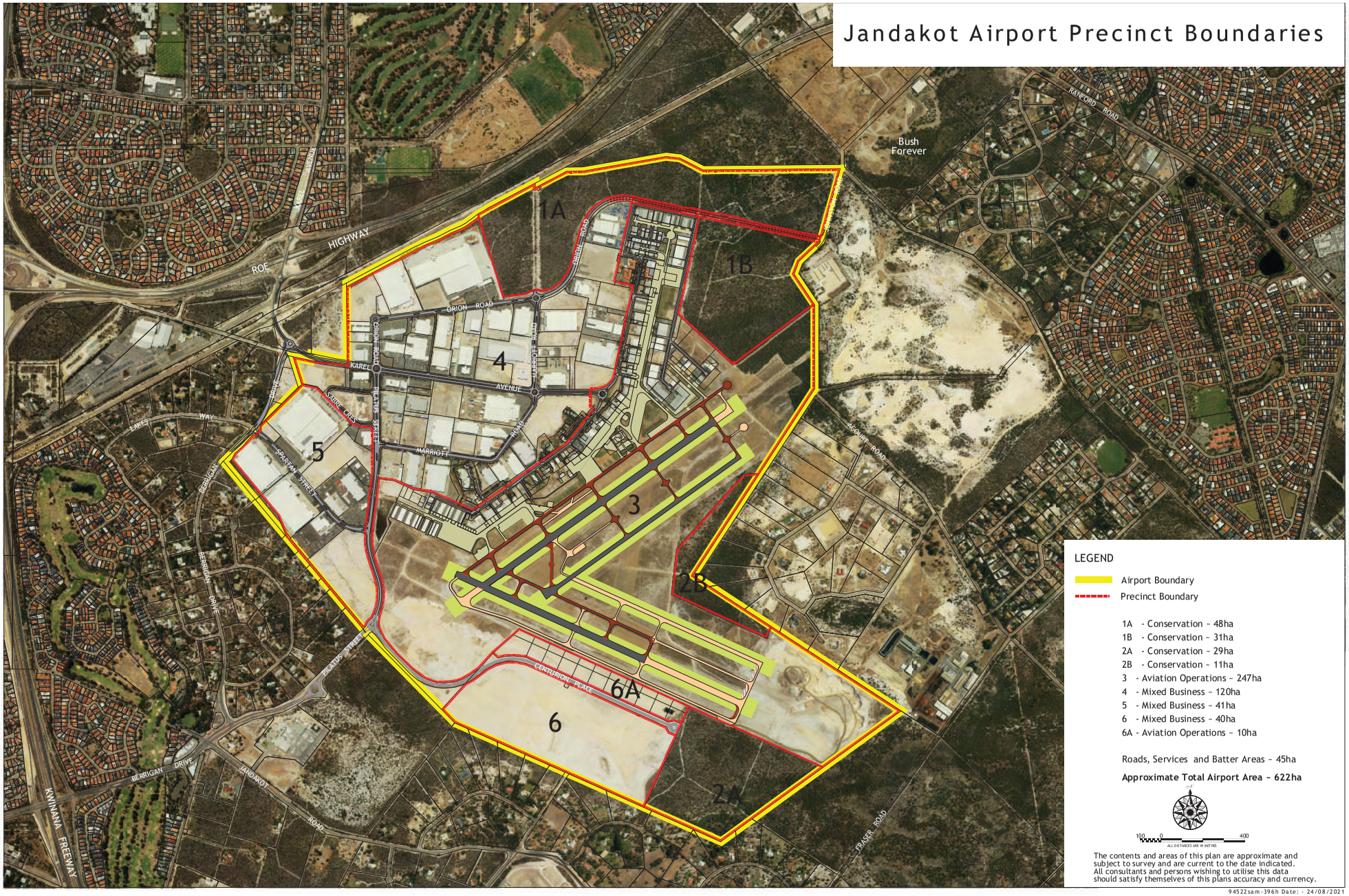


FIGURE 1.1 - JANDAKOT AIRPORT AERIAL PHOTOGRAPH CONTEXT

Rottnest Island Airport is a small single-runway airfield servicing the holiday island. Located 34km west of Jandakot, it is used regularly for private operator and charter operations ferrying workers and holiday makers between Perth and Rottnest Island.

Murray Field Airport is a small airfield located 46km south of Jandakot near the suburb of Mandurah. It is owned and operated by the Royal Aero Club of WA. With one sealed and one gravel runway, it is used primarily for pilot training and private operator use. The limited facilities and lack of navigational infrastructure restrict its use for commercial pilot training activity.

Pearce RAAF Base is located in Bullsbrook, 49km north of Jandakot, and is the main Royal Australia Air Force (RAAF) base in WA. Its primary role is pilot training for both RAAF and Singapore Air Force and it is the busiest RAAF base in Australia in terms of total movement numbers. Civilian aircraft access to the airport is very limited and the airspace surrounding Pearce is restricted military airspace.

RAAF Gingin is a small airfield that is also owned and administered by the RAAF. It is located approximately 40 km north of RAAF Base Pearce and 70km north of Jandakot Airport, and is used mainly for RAAF pilot training.

Bunbury Airport is located 142km south of Jandakot Airport. It has a single sealed runway and is used for general and recreational flight training as well as charters and emergency services.

Busselton Airport is located on the South West coast 180km south of Jandakot. Due to residential developments adjacent to the airport, the City of Busselton has imposed stringent controls on the use of the airport for flight training purposes.

The location of Jandakot Airport in proximity to other airports is shown in Figure 1.2.

1.6 ECONOMIC SIGNIFICANCE OF JANDAKOT AIRPORT

Jandakot Airport is a significant infrastructure asset in Western Australia and generates substantial economic benefits to the State and local economy.

The airport's location has several natural advantages that make it a preferred location for:

- Pilot training for domestic and international students;
- Servicing the general aviation needs of the metropolitan area, being just 16km south of the Perth CBD;
- Supporting the State's regional and remote areas with charter air transport services to the minerals and petroleum sectors;
- Servicing the public safety and emergency needs of the State through emergency air transport services;
- Capitalising on Western Australia's strong ties, geographical proximity and time zone correspondence to Asia; and
- Taking advantage of very favourable climatic conditions and long daylight hours that allow relatively long periods of flying time.

As a result of these advantages, Jandakot Airport has been able to capitalise on the international demand for flight training facilities. The flying schools based at the airport provide substantial export revenue to the State as well as relationship and reputation benefits from the long-term association with major international aviation businesses, including Singapore Airlines, and previously China Southern Airlines.

The development of the mixed business precincts over the past fourteen years has attracted leading-edge firms to the airport site and generated a number of spinoff service industries such as air tourism and safety training.

Jandakot Airport currently has an estimated 115,000 square metres of aviation related and aircraft hangar floor space, and an estimated 455,000 square metres of non-aviation floor space, of which approximately 330,000 square metres is warehousing, 80,000 square metres is manufacturing space, 40,000 square metres is office space and 5,000 square metres is retail space.

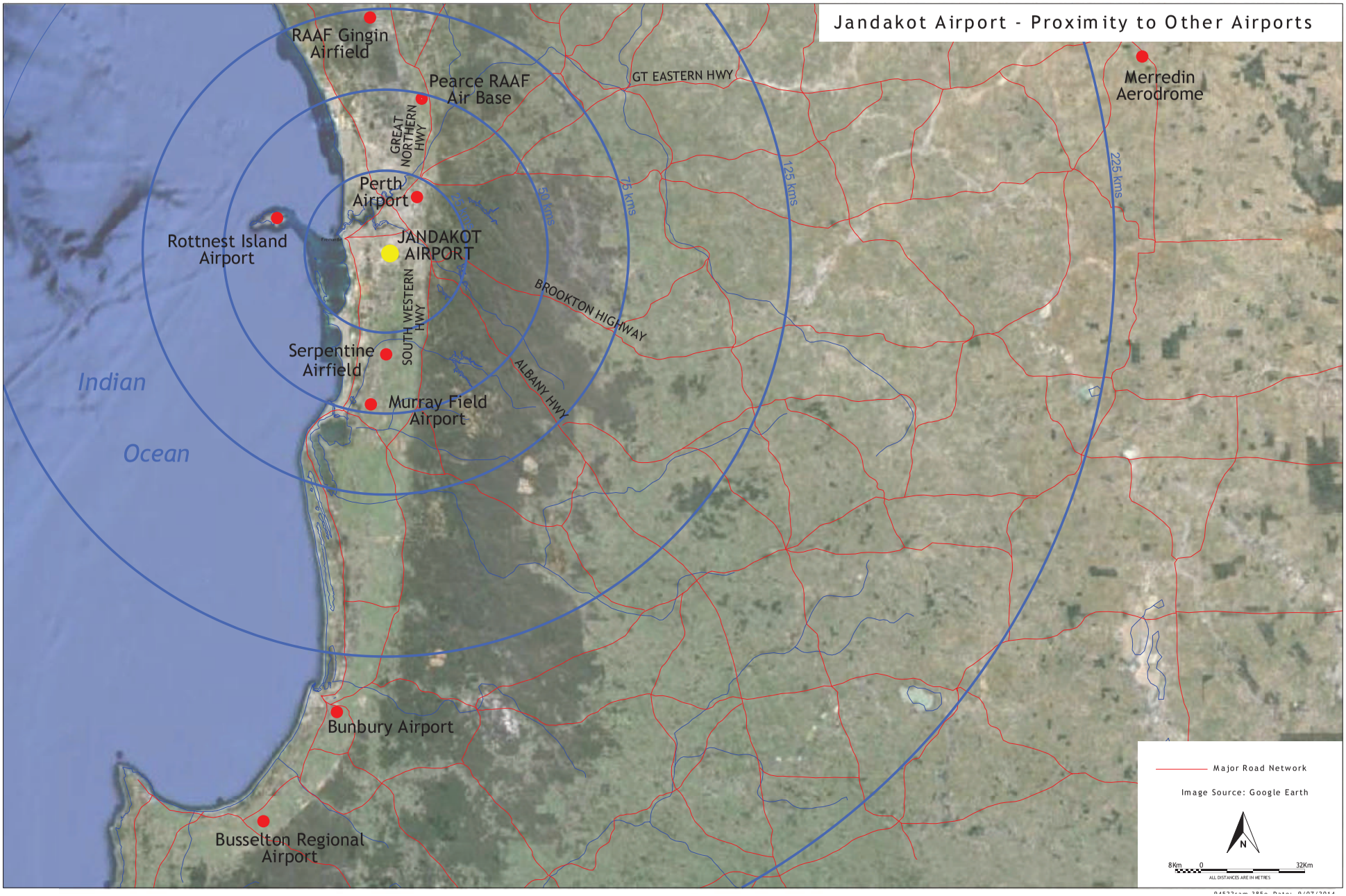


FIGURE 1.2 - LOCATION AND PROXIMITY PLAN

The current (2016) economic contributions of Jandakot Airport are summarised in Table 1.1:

Table 1.1 Current Economic Significance of Jandakot Airport

Number of businesses on site	213
Aviation Related Employees (Direct)	850
Non-Aviation Related Employees (Direct)	2276
Payroll	$213.700 million
Payroll Tax	$11.7 million
Ex-gratia payment in lieu of rates to the City of Cockburn (2018)	$4.0 million
Export revenue international students	$92.3 million
Total taxation revenue (excluding GST and taxes on profits)	$39.0 million

Source: MacroPlan Dimasi, Jandakot Airport Holdings, Australian Bureau of Statistics 2016 Census

1.7 FUTURE ECONOMIC SIGNIFICANCE OF JANDAKOT AIRPORT

The future development and growth of Jandakot Airport will build on the already significant economic value of the airport estate. Proposed major capital works include the expansion of the aviation infrastructure.

The development of the aviation infrastructure and aviation development land in Precincts 6A will allow for additional aviation related businesses at the airport and therefore increase employment, resulting in consequential higher taxation revenues for government.

Upon the ultimate development of the Jandakot Airport estate, it is estimated that the wages and salaries generated by 7,793 employees across 480 businesses will be in the order of $570.4 million. The following are estimates of taxes payable at full development:

- $186.5 million per year in individual and company income tax payable to the Commonwealth Government;
- $60.6 million per year in payroll tax and GST payable to the State Government; and
- $19.2 million per year payment in lieu of rates to the City of Cockburn.

The total value-add or contribution to the Western Australian economy that will be generated by the construction will be in the order of $858.5 million in addition to the initial $319.8 million investment.

Within the eight year period of this Master Plan, the anticipated level of development is expected to employ an additional 2,028 people, generate around 452 full time annual equivalent jobs in the construction industry, and approximately $57.4 million in construction industry salaries along with an additional $69.1 million annually in income, payroll and company taxes and GST to Commonwealth and State Governments, and payments in lieu of rates to the City of Cockburn.

1.7.1 FUTURE AVIATION DEVELOPMENT

The proposed aviation related development at Jandakot Airport will facilitate a significant increase in the economic activity at the site. At full development, estimated within the 20 year period of this Master Plan, it is anticipated that the estate will accommodate approximately 155,000 square metres of aviation-related and aircraft hangar floor space. This increase will predominantly come from the development of Precinct 6A which will accommodate approximately 40,000 square metres of aviation-related and aircraft hangar floor space.

This construction is estimated to cost $41.3 million and will generate substantial economic activity, including:

- 79 full time annual equivalent jobs in the construction industry; and
- $10.2 million in wages and salaries paid to construction industry employees.

The total value-add or contribution to the Western Australian economy that will be generated by the construction will be in the order of $110.9 million in addition to the initial $41.3 million investment.

Upon completion, this future aviation development will generate $15.0 million annually in income, payroll and company taxes and GST to Commonwealth and State Governments, and payments in lieu of rates to the City of Cockburn. When combined with the existing aviation uses at Jandakot Airport, the total annual contribution to all levels of government is estimated at $59.6 million.

It is estimated that at the full development of the estate the number of aviation related businesses will be around 102, with approximately 1,741 employees.

1.7.2 FUTURE NON-AVIATION DEVELOPMENT

At full development, it is anticipated that the estate will accommodate approximately 725,000 square metres of non-aviation floor space, comprising 525,000 square metres of warehouse, 128,000 square metres of manufacturing, 67,000 square metres of office and 5,000 square metres of retail (already constructed) floor space.

The construction of the commercial estate, including the supporting infrastructure and buildings, upon full development is estimated to cost $278.5 million and will generate substantial economic activity, including:

- 540 full time annual equivalent jobs in the construction industry; and
- $68.6 million in wages and salaries paid to construction industry employees.

The total value-add or contribution to the Western Australian economy that will be generated by the construction will be in the order of $747.6 million in addition to the initial $278.5 million investment.

When the commercial estate is fully occupied it will have the potential to accommodate approximately 409 non-aviation related businesses with approximately 6,050 employees. Upon completion the non-aviation development (including existing and new development) will generate $206.7 million each year in income, payroll and company taxes and GST to Commonwealth and State Governments, and payments in lieu of rates to the City of Cockburn.

1.8 DEVELOPMENT OBJECTIVES

The following objectives guide the planning and development of the airport site:

- Maintain Jandakot Airport as a leading General Aviation facility through investment in infrastructure necessary to satisfy the forecast operational requirements;
- Enhance the airport's contribution to WA employment and economic growth through appropriate aviation and non-aviation development;
- Ensure the long-term viability and sustainability of the airport and its stakeholders through effective planning, development and management; and
- Provide a safe, secure, reliable and efficient airport operating environment.

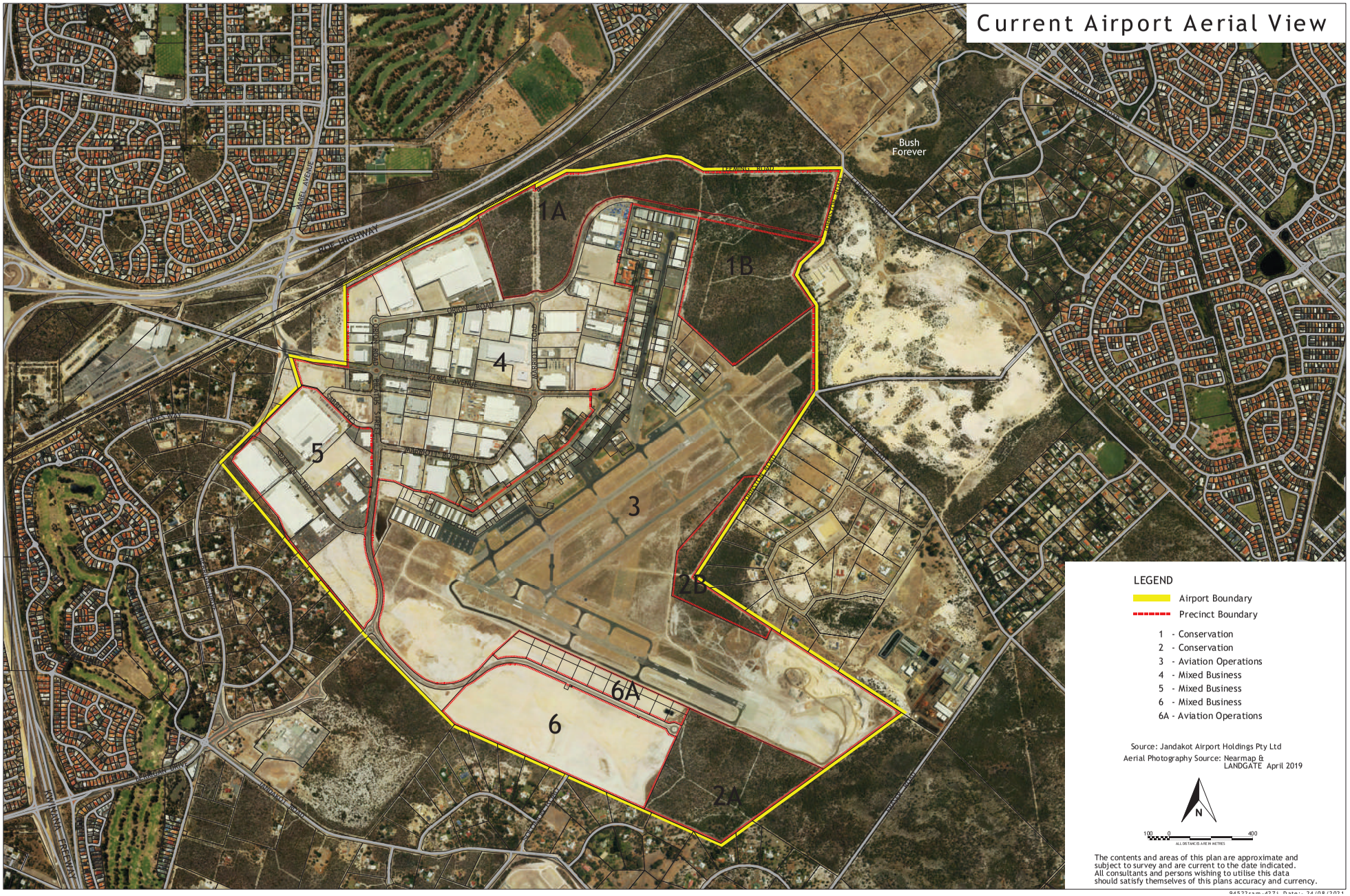


FIGURE 1.3 - AERIAL PHOTOGRAPH PRECINCT PLAN

2. PLANNING FRAMEWORK

2.1 PLANNING HISTORY

Prior to 1998 Jandakot Airport was owned and managed by the Federal Government. Initially this was through the Department of Civil Aviation, then Department of Transport (1973), Department of Aviation (1982), and finally as a Commonwealth business enterprise managed by the Federal Airports Corporation from 1988 to 1998. The Commonwealth had specific requirements for the approval and subsequent development at airports, with environmental and aircraft noise impacts of proposed developments evaluated by the State Environmental Protection Authority and/or Commonwealth Department of the Environment and Energy (or equivalent authority).

Since privatisation of Australian airports commenced in 1996, planning and environmental regulations governing airport development have been significantly enhanced and Jandakot Airport is now subject to the planning framework of the Commonwealth *Airports Act 1996.*

2.2 COMMONWEALTH GOVERNMENT

The Commonwealth Government regulatory framework relative to the planning and development of airports is established by the *Airports Act 1996* and the following key legislation and regulations:

- *Airports Regulations 1997;*
- *Airports (Building Control) Regulations 1996;*
- *Airports (Control of On-Airport Activities) Regulations 1997;*
- *Airports (Protection of Airspace) Regulations 1996;*
- *Airports (Environment Protection) Regulations 1997; and*
- *Environment Protection and Biodiversity Conservation Act 1999.*

2.2.1 AIRPORTS ACT 1996

The *Airports Act 1996* is the principal statute regulating the ownership, management and conduct of the leased federal airports. Part 5 of the Act prescribes a number of controls over land use, planning and building at airports and Part 6 details environmental management.

MASTER PLAN

Under Section 70 of the Act, each Commonwealth airport is required to produce a final master plan. A final master plan is one which has been approved by the Federal Minister of Infrastructure and Transport. Prior to submitting a draft master plan to the Minister, the airport is required to take into account public comments. Subsequent development at the airport must be consistent with the final master plan.

Section 70 of the Act requires that the purposes of a final master plan for an airport are to:

- Establish the strategic direction for efficient and economic development at the airport over the planning period of the plan;
- Provide for the development of additional uses of the airport site;
- Indicate to the public the intended uses of the airport site;
- Reduce potential conflicts between uses of the airport site, and to ensure that the uses of the airport site are compatible with the areas surrounding the airport;
- Ensure that all operations at the airport are undertaken in accordance with relevant environmental legislation and standards;
- Establish a framework for assessing compliance at the airport with relevant environmental legislation and standards; and
- Promote the continual improvement of environmental management at the airport.

A new master plan must relate to a planning period of 20 years. At the time of approval of Master Plan 2014 the Act required that a new master plan be developed every five years, however, relevant to Jandakot Airport, the Act has since been amended to require this to occur every eight years.

Section 71 of the Act requires that a master plan include:

(a) the airport-lessee company's development objectives for the airport; and

(b) the airport-lessee company's assessment of the future needs of civil aviation users of the airport, and other users of the airport, for services and facilities relating to the airport; and

(c) the airport-lessee company's intentions for land use and related development of the airport site, where the uses and developments embrace airside, landside, surface access and land planning/ zoning aspects; and

(d) an Australian Noise Exposure Forecast (in accordance with regulations, if any, made for the purpose of this paragraph) for the areas surrounding the airport; and

(da) flight paths (in accordance with regulations, if any, made for the purpose of this paragraph) at the airport; and

(e) the airport-lessee company's plans, developed following consultations with the airlines that use the airport and local government bodies in the vicinity of the airport, for managing aircraft noise intrusion in areas forecast to be subject to exposure above the significant ANEF levels; and

(f) the airport-lessee company's assessment of environmental issues that might reasonably be expected to be associated with the implementation of the plan; and

(g) the airport-lessee company's plans for dealing with the environmental issues mentioned in paragraph

(f) (including plans for ameliorating or preventing environmental impacts); and

(ga) in relation to the initial period *of the master plan—a plan for a ground transport system on the landside of the airport that details:*

(i) a road network plan; and

(ii) the facilities for moving people (employees, passengers and other airport users) and freight at the airport; and

(iii) the linkages between those facilities, the road network and public transport system at the airport and the road network and public transport system outside the airport; and

(iv) the arrangements for working with the State or local authorities or other bodies responsible for the road network and the public transport system; and

(v) the capacity of the ground transport system at the airport to support operations and other activities at the airport; and

(vi) the likely effect of the proposed developments in the master plan on the ground transport system and traffic flows at, and surrounding, the airport; and

(gb) in relation to the initial period *of the masterplan detailed information on the proposed developments in the masterplan that are to be used for:*

(i) commercial, community, office or retail purposes; or

(ii) for any other purpose that is not related to airport services; and

(gc) in relation to the initial period *of the master plan—the likely effect of the proposed developments in the master plan on:*

(i) employment levels at the airport; and

(ii) the local and regional economy and community, including an analysis of how the proposed developments fit within the planning schemes for commercial and retail development in the area that is adjacent to the airport; and

(h) an environment strategy that details:

(i) the airport-lessee company's objectives for the environmental management of the airport; and

(ii) the areas (if any) within the airport site which the airport-lessee company, in consultation with State and Federal conservation bodies, identifies as environmentally significant; and

(iii) the sources of environmental impact associated with airport operations; and

(iv) the studies, reviews and monitoring to be carried out by the airport-lessee company in connection with the environmental impact associated with airport operations; and

(v) the time frames for completion of those studies and reviews and for reporting on that monitoring; and

(vi) the specific measures to be carried out by the airport lessee company for the purposes of preventing, controlling or reducing the environmental impact associated with airport operations; and

(vii) the time frames for completion of those specific measures; and

(viii) details of the consultations undertaken in preparing the strategy (including the outcome of the consultations); and

(ix) any other matters that are prescribed in the regulations; and

(j) such other matters (if any) as are specified in the regulations.

In accordance with these requirements, Jandakot Airport's first master plan, Master Plan 2005, was approved by the then Minister for Transport and Regional Services on 3 January 2006. The second master plan, Master Plan 2009, was approved by the then Minister for Infrastructure, Transport, Regional Development and Local Government on 9 March 2010. The Jandakot Airport Environment Strategy 2009 was also approved by the Minister on 9 March 2010. As a result of amendments to the *Airports Act 1996* in 2012, the Environment Strategy is required to form part of the master plan. The third master plan, and the first incorporating the Environment Strategy, Master Plan 2014, was approved by the then Minister for Infrastructure and Regional Development on 17 February 2015. This Master Plan 2020 was approved by the Minister for Infrastructure, Transport and Regional Development on 22 August 2021.

A complete table of the requirements of the *Airports Act 1996* and associated key regulations, and the references within the Master Plan is contained in Appendix A.

MAJOR DEVELOPMENT PLAN

Some of the development activities planned for in a master plan may require further consultation and approval. Section 88 of the *Airports Act 1996* requires a major development plan (MDP) for designated major airport developments which are then subject to further community consultation, environmental assessment and Ministerial approval. Section 91 of the Act requires an MDP to be consistent with the final master plan for the airport. The major airport developments subject to a MDP include:

- Constructing a new runway, extending the length of a runway, or altering a runway in any way that significantly changes flight paths or the patterns or levels of aircraft noise;
- Constructing a new building wholly or principally for use as a passenger terminal, where the building's gross floor space is greater than 500 square metres;
- Extending a building that is wholly or principally for use as a passenger terminal, where the extension increases the building's gross floor space by more than 10%;
- Constructing a new building, where the building is not wholly or principally for use as a passenger terminal and the cost of construction exceeds $25 million;
- Constructing a new taxiway or extending a taxiway, where the construction significantly increases the capacity of the airport to handle movements of passengers, freight or aircraft and the cost of construction exceeds $25 million;
- Constructing a new road or new vehicular access facility, or extending a road or vehicular access facility, where the construction significantly increases the capacity of the airport to handle movements of passengers, freight or aircraft, and the cost of construction exceeds $25 million; and
- A development of a kind that is likely to have significant environmental or ecological impact; or a development which affects an area identified as environmentally significant in the environment strategy.

The following MDPs have been approved since, or were approved shortly prior to, the approval of the Master Plan 2014:

- ALDI Distribution Centre, located within Precinct 4; approved by the Minister for Infrastructure and Regional Development on 12 August 2014;
- K Mart Distribution Centre, located within Precinct 5; approved by the Minister for Infrastructure and Regional Development on 12 January 2015;
- Extension of Runway 12/30 and Taxiway System, located within Precinct 3; approved by the Minister for Infrastructure and Transport on 15 June 2016; and
- Western Power Depot, located within Precinct 6; approved by the Minister for Infrastructure and Transport on 2 March 2018. This Major Development Plan was subsequently withdrawn.

2.2.2 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the key environmental legislation of the Commonwealth Government that provides a framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, defined in the EPBC Act as matters of national environmental significance.

In addition, the EPBC Act confers jurisdiction over actions that have the potential to have a significant impact on the environment where the actions affect, or are taken on, Commonwealth land or are carried out by a Commonwealth agency.

EPBC referral 2009/4796 (Jandakot Airport Expansion, Commercial Development and Clearance of Native Vegetation, WA) was approved with conditions by the then Minister for Environment, Water, Heritage and Arts in March 2010. This approval allowed for clearing of native vegetation within Precincts 1B, 3, 4 and 5 to enable commercial development and the proposed airfield development as detailed in Master Plan 2009 and Master Plan 2014. The conditions of approval included conserving in perpetuity the remaining vegetation in Precincts 1A, 1B, 2A and 2B, and the development and implementation of various management plans, including an Offset Plan, Conservation Management Plan, Construction Environmental Management Plan and Groundwater Management Plan. All of these plans have been developed and implemented (refer to Chapter 9). The majority of the proposed actions associated with this EPBC referral have been completed, with the remaining actions scheduled to be undertaken as part of the implementation of Master Plan 2020. Annual compliance reports, addressing the conditions of approval, and the implementation of associated management plans, are required to be submitted to the Department of Agriculture, Water and the Environment and the Department of Infrastructure, Transport, Regional Development and Communications.

EPBC Referral 2013/7032 (Jandakot Airport Precinct 6 and 6A) was approved by the then Department of the Environment in July 2014. This approval allowed for the clearing of native vegetation within Precincts 6 and 6A for mixed business and aviation developments. The conditions of approval included the acquisition of offset land, the development and implementation of a Construction Environmental Management Plan, and measures to protect the Jandakot Groundwater Mound. The proposed actions associated with this EPBC referral have been completed and all conditions have been satisfied.

2.2.3 AVIATION TRANSPORT SECURITY ACT 2004

Jandakot Airport was a category 6 security controlled airport under the *Aviation Transport Security Act 2004* and *Aviation Transport Security Regulations 2005*. This requirement was revoked in October 2020 and Jandakot Airport is no longer a security controlled airport.

2.2.4 NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK

The National Airports Safeguarding Advisory Group was established to prepare a National Airports Safeguarding Framework (NASF). The 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 national land use planning framework will ensure future airport operations and their economic viability are not constrained by incompatible residential development and activities.

The draft NASF was released for public comment in March 2012 and endorsed by Commonwealth, State and Territory Ministers at the Standing Council on Transport and Infrastructure meeting in May 2012.

JAH supports the measures to improve the long-term safety and viability of Jandakot Airport and has considered the NASF guidelines in Chapter 8.

2.3 STATE GOVERNMENT PLANNING FRAMEWORK

The State Government recognises Jandakot Airport as a vital piece of infrastructure and has identified the airport as a 'specialised activity centre', as outlined in Section 2.3.3. As the land on which the airport is located is owned by the Commonwealth Government and the airport is subject to Commonwealth legislation, State planning laws do not apply to the airport site.

However, the Act and subsidiary regulations require that a master plan, where possible, describe proposals for land use planning and zoning in a format consistent with that used by the State or Territory in which the airport is located.

Where possible, this Master Plan has considered State planning requirements and has incorporated zoning and land use descriptions derived from the surrounding local government planning frameworks.

The developments anticipated at Jandakot Airport will complement the existing and future land uses in the surrounding locality and are considered to be consistent with the respective local government land use zones. This future development will be entirely consistent with the activity centre and employment generation objectives of the State Government as identified in the planning framework.

State Government planning is controlled by the Western Australian Planning Commission, which, with the professional and technical support of the Department of Planning, Lands and Heritage, administers the Metropolitan Region Scheme and publishes policies on a wide range of planning matters.

2.3.1 STATE AVIATION STRATEGY (2015)

A draft State Aviation Strategy was prepared by the WA Department of Transport and released for public comment in September 2013. The final State Aviation Strategy was published in February 2015. The State Aviation Strategy is the first developed for Western Australia and is aimed at supporting the economic and social development of WA through the provision of safe, affordable, efficient and effective aviation services and infrastructure. It seeks to respond to current opportunities in the State's aviation infrastructure, airport governance and levels of aviation service competition.

The Strategy proposes a suite of actions whereby the State will work in partnership with airports, regional shire councils, airlines and the resources and energy sector to ensure adequate services continue to meet demand. The Strategy is designed to provide a sound framework for policy setting, and future planning and investment in Western Australian international and domestic air services and airport infrastructure.

The Strategy acknowledges that *"For several decades, successive WA governments have encouraged the development of aviation training facilities in WA. The objective has been to attract international pilot and other aviation skills training to provide increased economic opportunities for WA's aviation industry and infrastructure."*

A finding of the Strategy is that *"There are opportunities to improve and develop aviation training in WA, building on the State's strong track record and its inherent advantages of clear skies and good flying weather."*

Jandakot Airport has been the largest pilot training airfield in Australia since opening in 1963. With the development included in this Master Plan, the airport will continue to play a significant role in maintaining, encouraging and enhancing pilot training activities.

2.3.2 STATE PLANNING STRATEGY 2050

The State Planning Strategy 2050 is the lead strategic planning document of the State Government. The Strategy provides the strategic guide for land use planning through to the year 2050 and provides a vision and a set of principles by which coordinated, sustainable development will be implemented. The strategy does not provide a specific land use plan for the Perth metropolitan area, but identifies as a principle the need to provide efficient transport routes and hubs. Specifically, the draft strategy seeks to protect land for key transport hubs where air, road and rail transport is integrated and identifies Jandakot Airport as an airport in the Perth region.

2.3.3 DIRECTIONS 2031 AND BEYOND – METROPOLITAN PLANNING BEYOND THE HORIZON

Directions 2031 and Beyond – Metropolitan Planning Beyond the Horizon (Directions 2031) is the State's high level strategic plan that establishes a spatial framework and vision for the future growth of the Perth and Peel regions.

Directions 2031 predicts a population increase of more than half a million people over the next 20 years, growing to a city of 3.5 million people after 2050.The plan identifies Jandakot Airport as a 'specialised activity centre', which provides an important and high level logistical function in the metropolitan region. Directions 2031 identifies that specialised centres have features in common with other activity centres and which complement, rather than compete, with other activity centres.

The continual development of the airport as envisaged under this Master Plan is consistent with, and represents the implementation of, the specialised activity centre status of Jandakot Airport as designated by Directions 2031.

2.3.4 PERTH AND PEEL @ 3.5 MILLION

Since the release of the Directions 2031 strategic plan in 2010, the State Government has built on the key principles and vision of this document in publishing the Perth and Perth @ 3.5 Million suite of land use planning and infrastructure frameworks. The intent of the Central, North-West, North-East and South Metropolitan Peel frameworks is to guide the future growth of the Perth and Peel regions as a compact, consolidated and connected city that can accommodate a population of 3.5 million by 2050.

Jandakot Airport is located within the South Metropolitan Peel Sub-Regional Planning Framework (Framework) which identifies the airport as a 'specialised activity centre', that has the potential to provide regionally-significant economic and institutional activities that attract substantial numbers of people, particularly focused on aviation and logistic services. The Framework also recognises the specialised education and training facilities available at the airport.

The continual development of the airport as envisaged under this Master Plan is consistent with, and represents the implementation of, the specialised activity centre status of Jandakot Airport as designated by Perth and Perth @ 3.5 Million and the associated South Metropolitan Peel Sub-Regional Planning Framework.

2.3.5 STATE PLANNING POLICY 4.2 – ACTIVITY CENTRES FOR PERTH AND PEEL

Published in 2010, and developed in conjunction with Directions 2031, State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP 4.2) identifies Jandakot Airport as a 'Specialised Centre' with a primary aviation and logistic services function.

The policy acknowledges that as Jandakot Airport is subject to Commonwealth legislation, it is outside of the realm of the policy provisions which address activity centre planning requirements. With respect to the 'Specialised Centre' designation, the policy notes that:

"Specialised centres provide opportunities for the development of complementary activities, particularly knowledge-based businesses. A range of land uses that complement the primary function of these centres will be encouraged on a scale that will not detract from other centres in the hierarchy."

The continual development of the airport as envisaged under this Master Plan will enable aviation and logistics related businesses to locate at the airport, taking advantage of the available developable land whilst not detracting from other centres.

2.3.6 STATE PLANNING POLICY 5.3 – LAND USE PLANNING IN THE VICINITY OF JANDAKOT AIRPORT

The State Government recognises Jandakot Airport as a vital piece of infrastructure in terms of the aviation facilities it provides, as well it being a strategic employment hub. As a result, the Western Australian Planning Commission (WAPC) has prepared State Planning Policy 5.3 – Land Use Planning in the Vicinity of Jandakot Airport in January 2017 (SPP 5.3), replacing the previous SPP 5.3, titled Jandakot Airport Vicinity, that was prepared in March 2006.

The objectives of SPP 5.3 are to:

- Protect Jandakot Airport from encroachment by incompatible land use and development, so as to provide for its ongoing, safe, and efficient operation; and
- Minimise the impact of airport operations on existing and future communities with particular reference to aircraft noise.

The policy seeks to control the zoning, development and subdivision of land outside of Jandakot Airport to protect both the operations of the airport and noise impacts for surrounding residents.

The previous version of SPP 5.3 (March 2006) included the Australian Noise Exposure Forecast (ANEF) 2025 contours from the Jandakot Airport Master Plan 2005, which included the proposed fourth runway. The current SPP 5.3 (January 2017) takes a different approach, in that the ANEF is referenced into the policy, via the ANEF prepared by Jandakot Airport, and endorsed for technical accuracy by Airservices Australia in accordance with the requirements of the *Airports Act 1996*.

This approach ensures that the current ANEF, as endorsed by Airservices Australia, applies via the policy.

2.3.7 STATE PLANNING POLICY 2.3 – JANDAKOT GROUNDWATER PROTECTION

State Planning Policy 2.3 – Jandakot Groundwater Protection (SPP 2.3) has been prepared by the WAPC to protect the Jandakot Groundwater Protection Area from development and land uses that may have a detrimental impact on the water resource.

2.3.8 STATE PLANNING POLICY 3.7 – PLANNING IN BUSHFIRE PRONE AREAS

State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7) has been prepared by the WAPC to appropriately recognise and plan for the risk associated with bushfire in those areas identified by the Department of Fire and Emergency Services (DFES) as being "bushfire prone". Parts of Jandakot Airport are identified as bushfire prone, with DFES mapping updated annually to reflect changes in clearing, development, and the scientific evidence informing the level of bushfire risk. A working group involving State and Commonwealth Government agencies is presently undertaking a review of the State's bushfire planning framework and it is anticipated that an updated map and proposed changes to SPP 3.7 will be released for public comment in 2021.

As individual developments are proposed, the bushfire risk can most appropriately be addressed as part of the further development approval requirements, as outlined at Section 11.1, for example through the requirement for a Bushfire Management Plan as part of a Major Development Plan or Application for Development Approval.

2.3.9 STATE PLANNING POLICY 2.8 - BUSHLAND POLICY FOR THE PERTH METROPOLITAN REGION

State Planning Policy 2.8 - Bushland Policy for the Perth Metropolitan Region (SPP 2.8) has been prepared by the WAPC to identify measures that will apply to proposals or decisions that are likely to have an adverse impact on regionally significant bushland within a 'bush forever' area. Bush forever is not binding on Commonwealth land and does not prevent any use or development at Jandakot Airpport. Whilst one of the objectives of SPP 2.8 is to seek to protect regionally significant bushland, it recognises that the airport site can be developed in accordance with its purpose as an airport owned by the Commonwealth Government and subject to Commonwealth legislation.

2.3.10 METROPOLITAN REGION SCHEME

The Metropolitan Region Scheme (MRS) is prepared and administered by the Western Australian Planning Commission as the principal planning scheme for the Perth metropolitan region. The MRS provides broad scale land use zones and sets out regional reservations.

The whole of the Jandakot Airport estate is reserved for 'Public Purposes: Commonwealth Government' under the MRS, along with the whole of the estate being identified as 'Bush Forever Area' notice of delegation area (which does not affect the 'Public Purposes: Commonwealth Government' reserve). The western and southern extent of Jandakot Airport is also identified as a 'Water Catchments' reserve overlay (which does not affect the 'Public Purposes: Commonwealth Government' reserve), consistent with the alignment of the Jandakot Groundwater Protection area, as identified in SPP 2.3.

The MRS does not place any limitations on permissible uses in the designated reservations. That is, under the provisions of the MRS, any use can be approved on any reserved land. The 'Public Purposes: Commonwealth Government' and 'Water Catchments' reservations, and 'Bush Forever Area' identification do not prevent the approval of any use or development on the Jandakot Airport site.

Current land use zoning and reservations in the area surrounding Jandakot Airport, as depicted in the Metropolitan Region Scheme, include:

- Public Purposes – Special Uses;
- Other Regional Roads;
- Railways;
- Urban;
- Rural;
- Parks & Recreation;
- Industrial; and
- Rural – Water Protection.

The Jandakot Airport estate in the context of the MRS is shown in Figure 2.1.

2.4 LOCAL GOVERNMENT PLANNING FRAMEWORK

2.4.1 CITY OF COCKBURN LOCAL PLANNING SCHEME NO. 3

The Jandakot Airport estate lies wholly within the boundary of the City of Cockburn. Part of the northern boundary of the estate (Leeming Road and Ken Hurst Park) abuts the southern boundary of the City of Melville, and the western boundary of the City of Canning abuts the north east airport boundary.

The majority of the City of Cockburn local government area is predominantly zoned for residential development, with significant industrial zones and areas reserved for regionally significant open space.

The continual development of the airport as envisaged under this Master Plan is consistent with the aims of the Local Planning Scheme, which seeks to ensure that the development and use of land is appropriate with regard to public amenity, convenience, quality of life, and compatible land uses. This is established by the City of Cockburn's Local Commercial and Activities Centres Strategy outlined below, which identifies Jandakot Airport as a strategic employment centre with a high density of jobs in a single location, where more of the future businesses and jobs are forecast to be located.

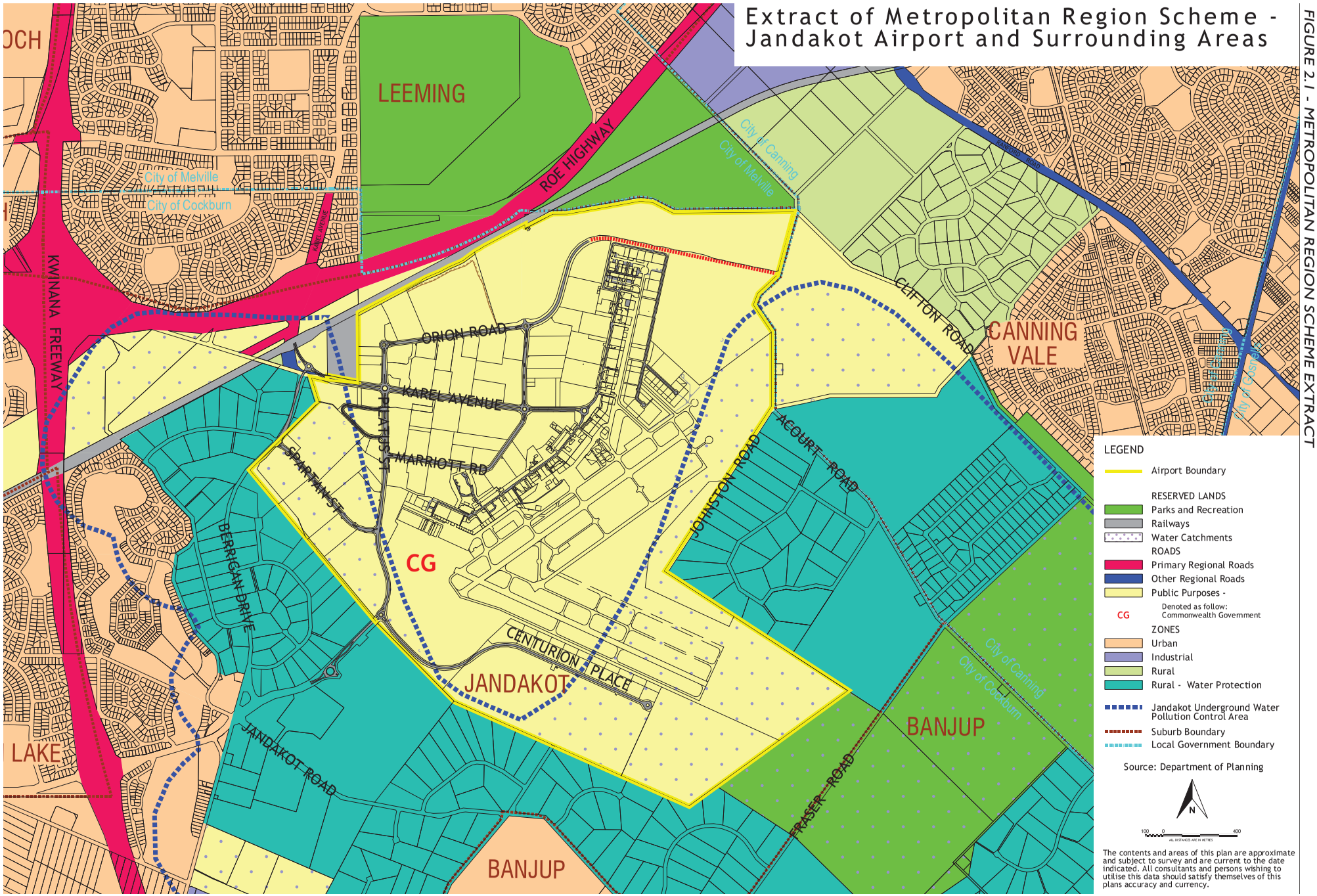
The ongoing aviation use and development of Jandakot Airport is also consistent with the Local Planning Scheme, in that land surrounding the airport has been zoned 'Resource' so as to prevent more intensive residential development which may be sensitive to aircraft noise.

2.4.2 CITY OF COCKBURN LOCAL COMMERCIAL AND ACTIVITIES CENTRES STRATEGY (2012)

In December 2012 the Council of the City of Cockburn adopted the Local Commercial and Activities Centres Strategy for the local government area. This strategy was prepared in the context of the WAPC's Directions 2031 and SPP 4.2 documents and represents the strategic guide for the planning and development of activity centres within the City of Cockburn. With respect to Jandakot Airport the strategy identifies that the estate provides a strategic employment centre with a high density of jobs in a single location. The strategy notes that the airport (along with other strategic employment centres) is forecast to contain more of the future businesses and jobs within the City of Cockburn.

Consistent with the WAPC documents identified above, the strategy identifies the airport as a specialised activity centre, and notes that as it is subject to Commonwealth legislation, State planning laws do not apply.

Extract of Metropolitan Region Scheme - Jandakot Airport and Surrounding Areas



The contents and areas of this plan are approximate and subject to survey and are current to the date indicated. All consultants and persons wishing to utilise this data should satisfy themselves of this plans accuracy and currency.

FIGURE 2.1 - METROPOLITAN REGION SCHEME EXTRACT

3. JANDAKOT AIRPORT LAND USE

JAH is committed to maintaining and upgrading infrastructure for the airport to operate safely, efficiently and effectively. The cost of the aviation infrastructure development and maintenance is not sustainable without income from diversified commercial activities.

The *Airports Act 1996* provides for the efficient economic development of the airport site and development for additional uses.

3.1 JANDAKOT AIRPORT LEASE

On 1 July 1998 the Commonwealth Government sold a 50 year lease over Jandakot Airport, with an option of a 49 year lease extension, to Jandakot Airport Holdings Pty Ltd.

An essential term of the lease is that the lessee must comply with all legislation relating to the airport site, including the *Airports Act 1996*. Whilst the Act requires that JAH operate the airport site as an airport, it also provides for the efficient economic development of the site and for its development for additional uses. The non-aviation development of the airport estate is crucial for the economic viability of Jandakot Airport.

3.2 INTERESTS ON AIRPORT LAND

There are a number of existing interests registered on the Certificates of Title for Jandakot Airport which pre-date the lease of the airport site to Jandakot Airport Holdings. These are identified in Appendix B, in accordance with Section 71(5) of the *Airports Act 1996* and Regulation 5.02(3) of the *Airports Regulations 1997*.

3.3 MASTER PLAN 2020

This Master Plan 2020 provides for the development of the airport, taking into account aviation operations, the environment, non-aviation land use, services infrastructure and ground transport. In accordance with the Act, this Master Plan relates to a planning period of 20 years with the Master Plan to be replaced every eight years. This Master Plan replaces the existing Master Plan 2014 and fulfils JAH's statutory obligations under the *Airports Act 1996*.

This Master Plan retains the precincts as shown in the existing Master Plan 2014.

The precincts of the airport site are shown on Figure 3.1.

The land use precincts and discretionary land uses for each of the Precincts are outlined in Sections 3.5.3 and 3.5.4.

3.4 JANDAKOT AIRPORT LAND USES

- Conservation – 119 hectares (19%);
- Aviation Operations (includes runways and taxiways) – 257 hectares (42%);
- Non-Aviation Development – 201 hectares (32%); and
- Existing and Proposed Internal Roads and Services Area – 45 hectares (7%).

3.5 LAND USE PRECINCTS

Figure 3.1 identifies the Master Plan 2020 land uses precincts for the estate, which are as follows:

- Precinct 1A (48ha) – Conservation.
- Precinct 1B (31ha) – Conservation.
- Precinct 2A (29ha) – Conservation.
- Precinct 2B (11ha) – Conservation.
- Precinct 3 (247 ha) – Aviation Operations.
- Precinct 4 (120 ha) – Mixed Business.
- Precinct 5 (41 ha) – Mixed Business.
- Precinct 6 (40 ha) – Mixed Business.
- Precinct 6A (10 ha) – Aviation Operations.

The remainder of the 622ha site is allocated to existing and proposed roads and service areas.

3.5.1 CHANGES IN LAND USE FROM THE MASTER PLAN 2014

Regulation 5.02 of the *Airports Regulations 1997* requires that a master plan must specify an area of the airport where a change of use is proposed of a kind described in sub-regulation 6.07(2) of the *Airports (Environment Protection) Regulations 1997*.

The boundary between Precinct 4 and Precinct 3 has been marginally amended to exclude the site of the former China Southern Accommodation Facility from Precinct 3.

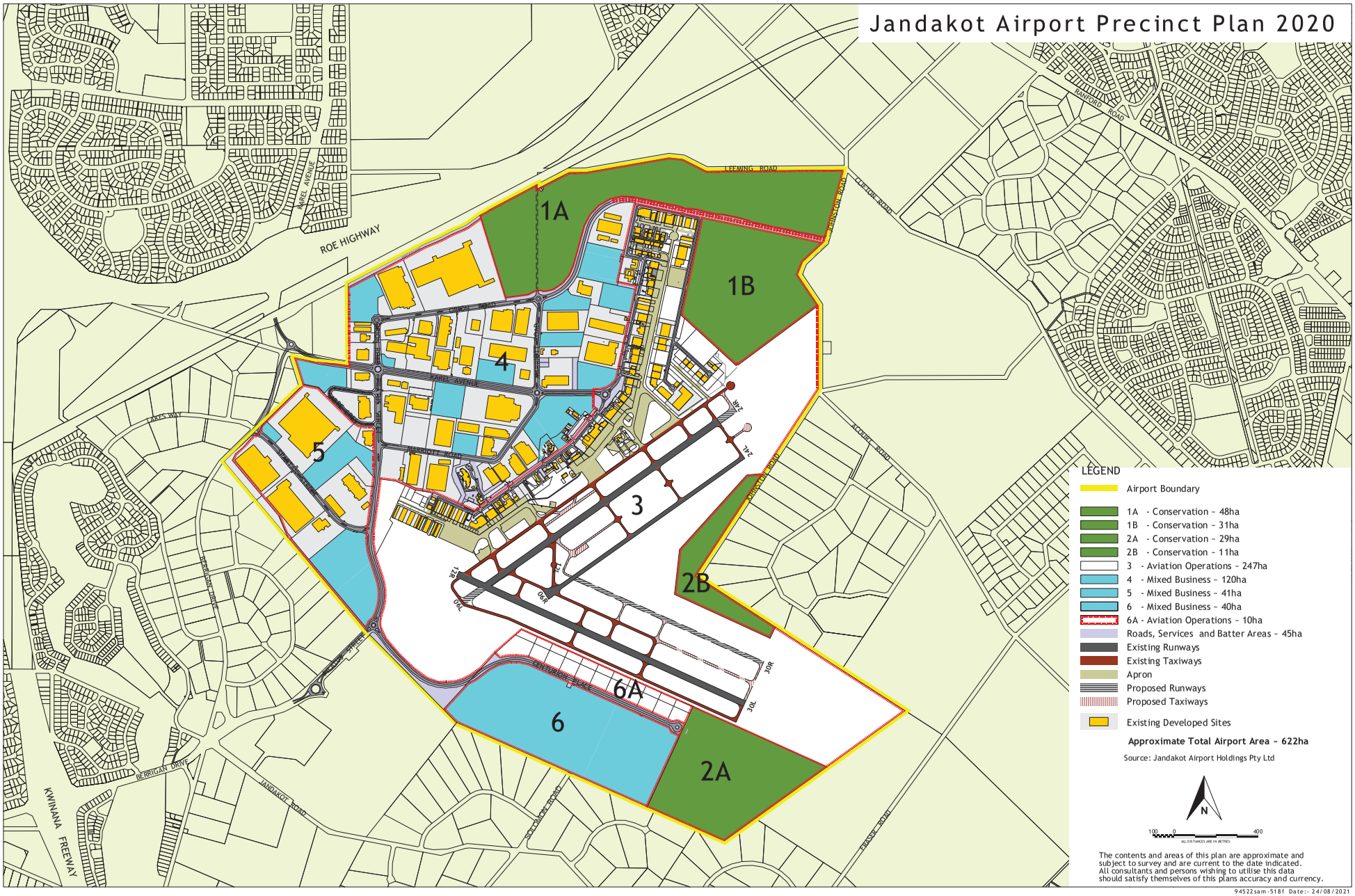


FIGURE 3.1 - JANDAKOT AIRPORT PRECINCT PLAN

3.5.2 CONSERVATION (PRECINCTS 1A, 1B. 2A AND 2B)

Precincts 1A, 1B, 2A and 2B are identified 'Conservation', with these areas to be retained as bushland.

3.5.3 AVIATION OPERATIONS (PRECINCTS 3 AND 6A)

Precinct 3 and 6A are set aside for Aviation operations which comprises the runway, taxiways, aprons, helicopter landing sites and all associated infrastructure required for the current and future movement of aircraft. This Precinct also includes navigation aids, aviation fuel storage, aircraft maintenance facilities, aircraft hangars, and administration offices associated with the operations of aviation related tenants.

The airport has some land reserves available to cater for the near future expansion of aviation facilities.

3.5.4 NON-AVIATION (MIXED BUSINESS) DEVELOPMENT (PRECINCTS 4, 5 AND 6)

Precincts 4, 5, and 6 are identified as 'Mixed Business' land use areas for non-aviation development. This land use area is based on the 'Mixed Business' zone, as contained in the City of Cockburn Town Planning Scheme No. 3.

PRECINCT 4

The objective of Precinct 4 is to provide a mixed use business park-like setting supporting a landscaped entrance to the airport, taking advantage of this entrance location by supporting high activity generating uses. The Precinct has been developed for, and will continue to support warehouse, manufacturing, storage, office, business and professional services and existing retail type development land uses.

PRECINCT 5

The objective of Precinct 5 is to provide a mixed use business park-like setting and to provide uses appropriate for the Jandakot Underground Water Protection Control Area (JUWPCA) outlined in Section 9.2.1. The Precinct has been developed for, and will continue to support warehouse, manufacturing and storage type development and land uses that will be generally consistent with the City of Cockburn's 'Mixed Business' zone and will be controlled to prevent impacts to the Jandakot Water Mound. In this regard no bulk chemical storage operations are to be located within the portions of the Precinct within the JUWPCA.

PRECINCT 6

The objective of Precincts 6 is to provide a mixed use business park-like setting and to provide uses appropriate for the JUWPCA (for the eastern half of Precinct 6). Precinct 6 will support warehouse, manufacturing and storage type development and land uses that will be generally consistent with the City of Cockburn's 'Mixed Business' zone and will be controlled to prevent impacts to the Jandakot Water Mound. In this regard no bulk chemical storage operations are to be located within the portions of the Precincts within the JUWPCA.

Discretionary land uses within Precincts 4, 5, and 6 are identified in Table 3.1.

Table 3.1 Precincts 4, 5, and 6 – Discretionary Land Uses

Animal Establishment	Amusement Parlour
Bank	Betting Agency
Club Premises	Commercial Vehicle Parking
Farm Supply Centre	Fast Food Outlet
Garden Centre	Hardware Store
Hotel/Tavern	Industry – Cottage
Industry – Light	Industry – Service
Market	Motor Vehicle, Boat or Caravan Sales
Motor Vehicle Hire Premises	Motor Vehicle Wash
Motor Vehicle Repair	Lunch Bar
Nursery	Office
Service Station	Public Amusement
Reception Centre	Recreation – Private Private
Restaurant	Showroom
Storage Yard	Vehicle – Disused
Veterinary Centre	Warehouse

3.6 CONSISTENCY WITH STATE AND LOCAL PLANNING FRAMEWORK

Regulation 5.02(2) of the *Airports Regulations 1997* states that *"an airport master plan must, in relation to the landside part of the airport, where possible describe proposals for land use and related planning, zoning or developments in an amount of detail equivalent to that required by, and using terminology (including definitions) consistent with that applying in, land use planning zoning and development legislation in force in the State or Territory in which the airport is located."*

Whilst the terminology of land use 'precincts' has been used in this Master Plan, consistent with the two previous master plans for Jandakot Airport, these precincts effectively operate as, and are consistent with, land use 'zones', being the terminology used in the State and Local Government planning framework. To demonstrate this, and as stated in Section 3.5.4, the 'Mixed Business' Precincts have been based on the 'Mixed Business' zone as contained in the City of Cockburn Town Planning Scheme No. 3. In this regard, the land uses that may be developed on Jandakot Airport within the Mixed Business Precincts 4, 5, and 6, as identified in Table 3.2, are consistent with the range of land uses that may potentially be approved for development by the City of Cockburn within the 'Mixed Business' zone under Town Planning Scheme No. 3.

In this regard, where possible the Jandakot Airport land use plan as contained in this Master Plan has been developed in an amount of detail and using terminology and definitions consistent with that of the Western Australian Planning Commission Model Provisions, as contained in the *Planning and Development (Local Planning Schemes) Regulations 2015*, and is also consistent as far as practicable with the local planning scheme of the City of Cockburn.

The Cities of Cockburn, Canning and Melville have been involved in the preliminary consultation at the initiation of the master plan review process. Consultation with the City of Cockburn regarding the envisaged development and land uses for the airport estate, has been ongoing during the preparation of this Master Plan 2020.

3.7 SENSITIVE DEVELOPMENTS

Section 71A of the Act requires a master plan to identify any proposed 'sensitive developments', defined as development, or redevelopment that increases the capacity, of the following:

- Residential dwelling;
- Community care facility;
- Pre-school;
- Primary, secondary, tertiary or other education institution; and
- Hospital.

Sensitive developments are prohibited on Commonwealth leased airports apart from in exceptional circumstances, and require an airport to apply to the Minister for Infrastructure and Transport for approval to prepare a draft major development plan for the proposed development. The Minister may approve the preparation of the draft major development plan only if he or she is satisfied that there are exceptional circumstances that support its preparation.

There are no specific proposals for sensitive developments in this Master Plan 2020.

4. AVIATION DEVELOPMENT

4.1 AIRCRAFT MOVEMENTS

4.1.1 NATIONAL TRENDS

Many of the cost pressures that have negatively affected general aviation activity in Australia over the past five years continue to impact the industry, most notably the price of aviation fuel and more recently Covid 19. it is uncertain whether training bases such as Jandakot Airport stand to benefit from an upsurge in flying training activities in the next eight years as previously anticipated. Although flying training numbers are steady at this time there may be a temporary future drop off of training activity due to the difficulties of international students being granted access into Australia during the Covid19 pandemic, Flying training and charters continue to make up the largest categories in the general aviation sector, whilst other categories such as private and aerial work remain relatively flat. Helicopter activity will continue to grow, as evidenced by the increasing proportion of helicopters within the overall Australian general aviation fleet mix.

Figure 4.1 shows the number of aircraft movements at Jandakot Airport compared with the other major general aviation airports in Australia over the last 10 years.

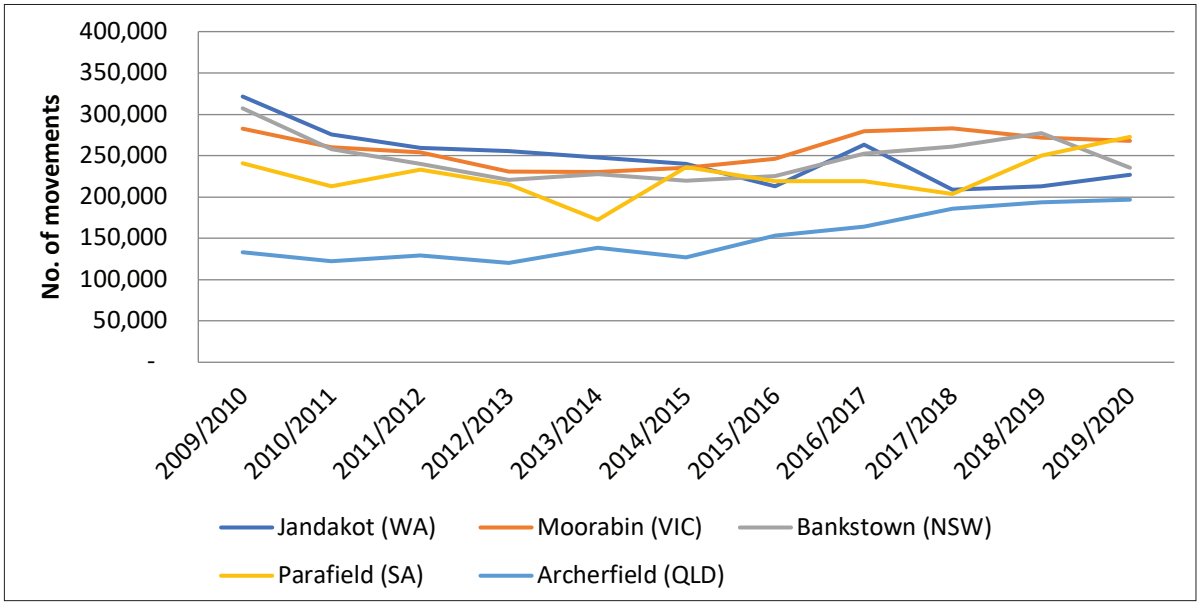
4.1.2 JANDAKOT AIRPORT

Jandakot Airport operates 24 hours, 7 days a week. The airport has a significant role as a major training base for both local and international pilots. Flying training activities account for approximately 80% of the annual movements conducted at the airport, with some 60% of movements being repetitive 'touch-and-go' circuit operations.

Pilot training is provided by two major flying schools at Jandakot Airport – Singapore Flying College, and the Royal Aero Club of Western Australia other training organisations include Airflite, Air Australia International, Minovation, Cloud Dancer, Jandakot Flight Centre, Major Blue Air, Pacific Flight Services and the University Flying Club. Heliwest and Corsaire are the largest providers of helicopter training.

Charter and aerial work operations related to agriculture, mining, tourism related activities and rural services have been estimated to contribute about 16% of the total aircraft movements at Jandakot Airport. Flights related to mining are mainly ad-hoc charters that fly out to remote areas not covered by major airline routes or 'fly-in fly-out' operators. Aerial work services include air ambulance (e.g. Royal Flying Doctor Service and Formula Aviation), bushfire surveillance and water

FIGURE 4.1 - GENERAL AVIATION AIRPORTS MOVEMENT COMPARISON



bombing, media, aerial spraying and surveying. Other operations relate to private flying and general helicopter operations.

Figure 4.2 shows the total aviation movements recorded by Airservices Australia for the last 10 years for Jandakot Airport.

Airservices Australia data summarises movements of helicopter, military, fixed wing under 7 tonne maximum take-off weight and fixed wing above 7 tonnes. These are shown in Table 4.1 for the past five years.

FIGURE 4.2 - JANDAKOT AIRPORT TOTAL ANNUAL AIRCRAFT MOVEMENTS

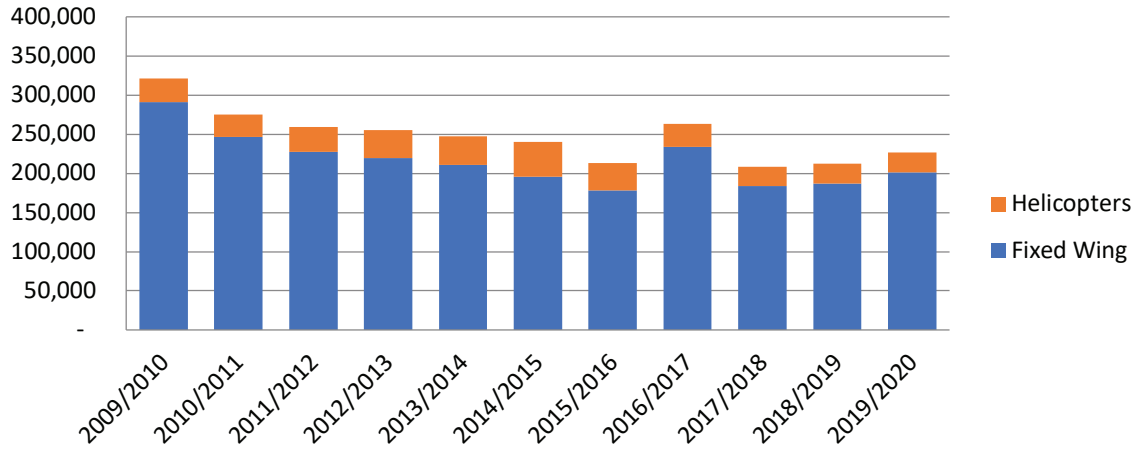


Table 4.1 Jandakot Airport Aircraft Movements

Aircraft Weight/Type	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2019/2020 %
Between 7-136 tonnes	1,466	580	778	1,428	2,398	1.06
Under 7 tonnes	176,422	230,012	181,576	185,306	198,214	87.6
Helicopter	35,092	29,698	24,664	25,586	25,636	11.33
Military	80	56	66	36	16	0.007
Total	**213,060**	**260,346**	**207,084**	**212,356**	**226,264**	

Source: Airservices Australia

4.2 MOVEMENT CAPACITY

Identifying overall future aircraft movement capacity is important for planning purposes.

When endorsing the Australian Noise Exposure Forecast (Refer to Chapter 8), Airservices Australia needs to be satisfied that the forecast numbers of aircraft movements, operating times and the aircraft types carrying out operations are not greater than the physical ultimate capacity of the existing or proposed runways at the airport.

Jandakot Airport movement capacity was assessed in Master Plan 2014 showing the airport's maximum theoretical operating capacity as 460,000 fixed-wing movements and 66,000 helicopter movements per annum. This has been reviewed and the movement capacity remains the same.

It should be noted that any future changes to airspace or operational procedures, such as circuit area restrictions or other aircraft separation requirements, will impact the movement capacity of the airport.

4.3 MOVEMENT FORECASTS

Future demand for pilot training is extremely difficult to predict. Student intake is largely driven by the forecast demand for pilots by the airline industry.

Private general aviation operators are vulnerable to cost, administrative impacts and more recently the impact of Covid 19. Increasing operating costs and additional regulatory controls are cited as the major reasons for private operators reducing their flying hours.

Air traffic movements at Jandakot Airport reached a peak of 415,284 annual movements in 2005/2006, and declined significantly after the Global Financial Crisis. While the past ten years have seen very little movement growth and local training schools previously indicated that the demand for pilot training was expected to increase in 2015/2016, this did not eventuate. China Southern Flying College Western Australia (CSFCWA) was grounded by CASA for the majority of 2018 which accounted for the overall decrease in movements at the airport for the financial year 2017/2018. The training schools were confident of continued growth over the next eight years. This view is supported by the addition of three new flying schools commencing operations at Jandakot Airport in the latter half of 2018, the resumption of operations at CSFCWA and the commencement of a large flying school in 2020 (Pacific Flight Services). All of these flying schools have been impacted by Covid 19. CSFCWA no longer operates at Jandakot Airport.

There are currently 700 students undertaking fixed-wing pilot training at Jandakot Airport, resulting in approximately 70,000 flying hours per annum. The training schools have estimated that over the next 5-10 years student numbers will increase by 40% and their flying hours will reach 126,000 hours per annum.

At an average projected growth rate of 4.0% per annum for fixed-wing movements and 3.4% average growth rate for helicopter movements, the theoretical operating capacity of 460,000 fixed wing and 66,000 helicopter movements identified in this Master Plan could be reached within the 20 year planning horizon. While the assumed average growth rate of 4% is higher than growth rates forecast at similar general aviation airports, the expected student pilot intake, and aircraft fleet changes have been taken into consideration and it is likely that this growth could be achieved.

4.4 FLEET MIX

Due to runway and taxiway pavement characteristics, aircraft operating regularly at Jandakot Airport are restricted to types with a maximum take-off weight less than 5,700kg.

Fixed-wing aircraft currently account for 87% of all movements at Jandakot. Over 60% of all fixed-wing traffic is attributed to three of the most popular aircraft types used for pilot training at Jandakot Airport – the Cessna 172 (35% of all fixed-wing movements), Cessna 152 (16% of all fixed-wing movements), and Grob 115 (10% of all fixed-wing movements). Fixed-wing movements have declined substantially from 390,940 in 2005/2006 to 184,100 in 2017/2018 primarily due to a downturn in commercial and private pilot training demand following the Global Financial Crisis as well as the suspension of CSFCWA operations.

A number of flying schools have indicated that aircraft fleets will be upgraded within the next 5-10 years. The majority of the upgrades are replacing older aircraft with a similar aircraft type, so the type of aircraft currently used at the airport is not expected to change. The Royal Flying Doctor Service continues to operate mainly Pilatus PC-12 aircraft and added two PC-24's in 2019. PC-12s are also used by Police Air Wing and private charter companies. Formula Aviation is operating two Lear Jets for medical mercy flights to Indonesia and far reaches of Australia.

Helicopter activity showed a substantial increase between 2005 and 2014 and this rate of increase appears to be slowing. Helicopter circuit training operations represent over 50% of all rotary-wing movements. Nearly 53% of all helicopter activity is conducted by Robinson R22 types (2 seater single engine), with a further 23% attributed to the larger

Robinson R44 (4 seater single engine). The high percentage of R22 activity is due to the small helicopters being favoured for pilot training, with circuits accounting for 80% of all R22 activity.

Helicopters are also increasingly being used for emergency services response and support activities. Helicopters are preferred over fixed-wing aircraft due to the immediate deployment capability, manoeuvring flexibility and ability to be stationary for observation and reporting of events. This includes the Department of Fire and Emergency Services and Department of Biodiversity, Conservation and Attractions bushfire season surveillance and incident support operations, Police Air Wing surveillance and incident response, RAC Rescue helicopter medical and emergency response and seasonal activities such as aerial spraying and summer shark patrols. These operations are generally conducted in the larger helicopter types, such as the Bell 206 JetRangers, Eurocopter AS-350, Eurocopter AS-365, BK-117, Bell 214 and Bell 412. Each of these helicopter types make an average of 5 or less daily movements.

4.5 AVIATION DEVELOPMENT

Since approval of the Master Plan 2014, JAH has continued to develop aviation facilities at the airport. These works include:

- New apron for RFDS PC24 aircraft and new hardstand for fixed wing water bombers (completed in 2019);
- Extension of runway 12/30 by 500m and the construction of 2000m of associated new taxiways (completed in 2019);
- Construction of Centurion Road and services for new aviation development land in Precinct 6A (completed in 2019);
- Replacement of the entire airfield lighting system including new runway lights, taxiway lights and ATC interface (completed in 2019); and
- Continuation of the runway and taxiway resurfacing programme.

The current airfield layout is shown at Figure 4.3.

Of the 622 hectare land holding, 257 hectares (42%) has been identified in this Master Plan 2020 as being for aviation operations. JAH is committed to providing appropriate aviation infrastructure to accommodate future growth. The growth in aviation infrastructure will need to be undertaken in parallel with increased commercial activity to sustain the economic future of the airport. Without diversifying income to support aviation infrastructure the operating cost of aviation activities would need to increase significantly which would not be viable for the airport or its tenants.

Further aviation development to achieve the vision of a strategically significant aviation hub is proposed to include a fourth runway with associated taxiways and aviation support facilities as described below.

Airport development by 2040 is shown in Figure 4.4 Aviation Development Plan. Primary facilities shown in Figure 4.4 include:

- Extensions to runway 06L/24R;
- Proposed new runway 12L/30R;
- Proposed taxiways and aprons;
- Proposed non-directional beacon relocation;
- Potential future compass swing bay;
- Existing and proposed run-up bays; and
- Proposed aviation support facilities (eg wind indicators).

As detailed in Section 2.2.1, a major development plan is required to be prepared for the construction of a new runway and altering existing runways.

4.6 PLANNING STANDARDS

The International Civil Aviation Organization (ICAO) determines international standards and recommended practices for aviation operations. Australia also has its own regulatory requirements pertaining to the operation of aerodromes. These are based on the ICAO standards and recommended practices.

Australia's Civil Aviation Safety Authority (CASA) is responsible under Section 9(1)(c) of the *Civil Aviation Act 1988* for developing and promulgating appropriate clear and concise aviation safety standards through the Civil Aviation Safety Regulations 1998 Part 139. CASA prescribes the detailed technical requirements that are determined to be necessary for the safety of aerodromes and air navigation.

The Manual of Standards (MOS) Part 139 – Aerodromes sets out the standards to be adopted for Australian aerodromes. These standards are generally based on the standards and recommended practices set out in

ICAO Annex 14. Siting and operating standards for all airfield infrastructure at Jandakot Airport is determined in accordance with MOS Part 139.

ICAO has developed international standard Aerodrome Reference Codes for airport classifications which relate to particular aircraft groupings. These standard groupings are also adopted in MOS Part 139.

A critical aircraft of Code 2B is used as the basis for planning the layout of the primary runway 06L/24R, runway 12R/30L and associated taxiways at Jandakot Airport. A typical Code 2B aircraft in widespread use in Australia is the Fairchild Metro II, which is a twin engine turbo- prop aircraft with a passenger carrying capacity of up to 19. The bulk of Jandakot fixed wing traffic is made up of light single engine types such as Cessna 172 and Piper PA28 series aircraft which are Code 1A types. Code 1A aircraft types are adopted for planning the secondary runways 06R/24L and 12L/30R.

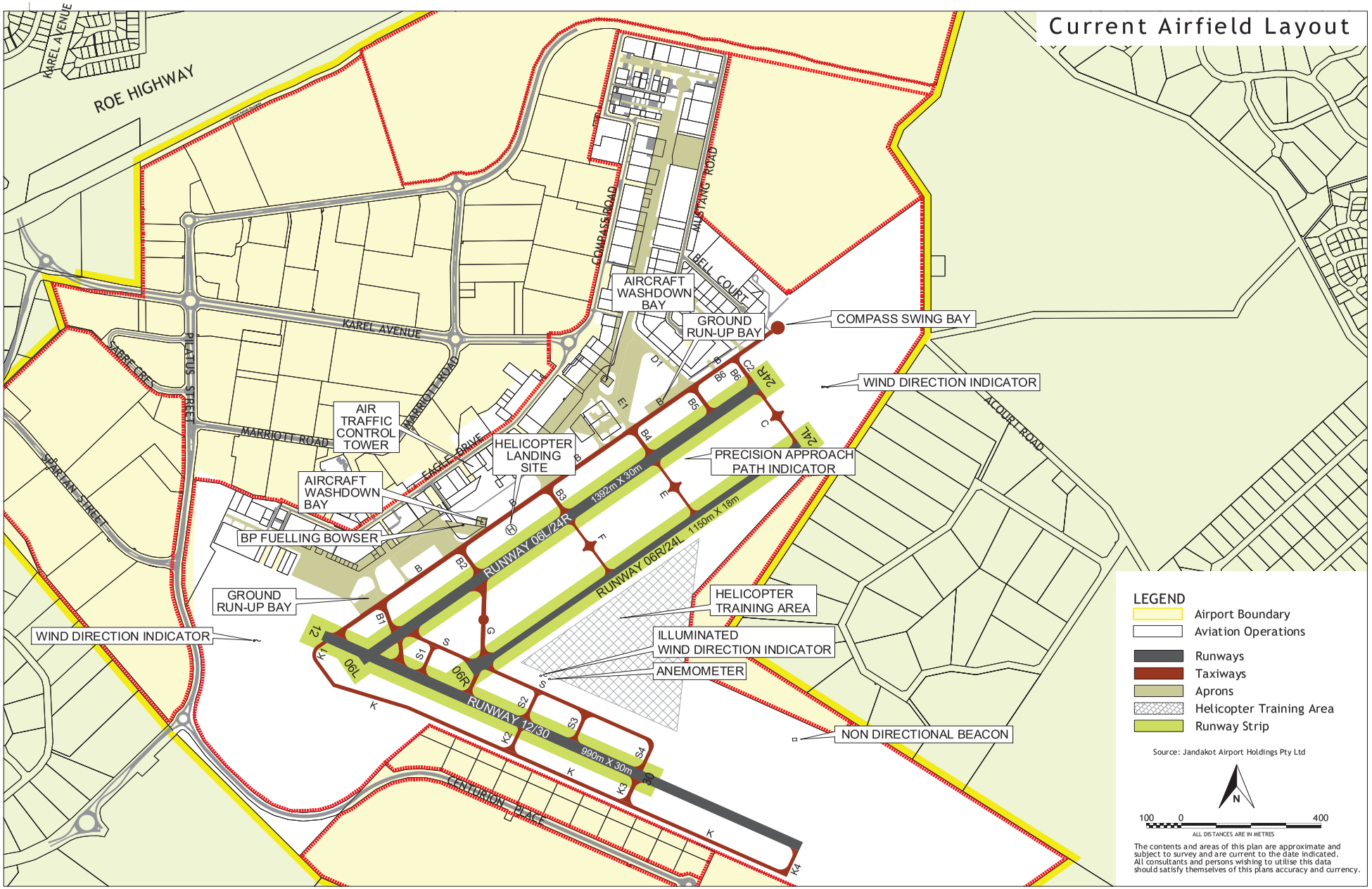


FIGURE 4.3 - CURRENT AIRFIELD LAYOUT

4.7 AIRFIELD INFRASTRUCTURE

4.7.1 RUNWAYS

Jandakot Airport has a multi-runway configuration, comprising two NE/SW parallel runways and a SE/NW cross runway. The proposed fourth runway will also run SE/ NW.

The bearing strength of an aerodrome pavement is expressed as a Pavement Classification Number (PCN). Aircraft can operate unrestricted on a runway pavement that has a PCN rating equal to or greater than the Aircraft Classification Number (ACN). The ACN value expresses the relative damaging effect of the aircraft on a pavement for the specified standard subgrade strength.

Runway pavement strengths at Jandakot Airport are designed primarily for aircraft with a maximum take- off weight of 5,700kg. The primary runways do have the capacity to accommodate occasional movements by heavier aircraft. A Pavement Concession may be issued by JAH for aircraft with a maximum take-off weight greater than 5,700kg, dependent on the PCN-ACN assessment of the specific aircraft type and subject to the aircraft wing-span satisfying the taxiway separation requirements.

RUNWAY 06L/24R

Runway 06L/24R is the primary runway and is used for the majority of aircraft operations. Constructed for the opening of the airport in 1963, the runway is currently 1,392m in length and 30m wide. This length is adequate for the current needs of most operators, although some aircraft types may experience payload restrictions on very hot days. For planning purposes, Master Plan 2009 and this Master Plan have allowed for a minor extension at each runway end, potentially providing for an overall length of 1,600 metres.

RUNWAY 06R/24L

Parallel runway 06R/24L was constructed in 1991 to support the increasing pilot training activities. The existing runway length of 1,150 metres and the width of 18 metres is adequate for the touch-and-go circuit training by current types of aircraft used for training and there are no changes proposed to this runway.

RUNWAY 12/30

Constructed for the opening of Jandakot Airport in 1963, runway 12/30 is the primary runway used for aircraft operations in north-westerly and south-easterly wind conditions.

The length of runway 12/30 is 1508 metres and the width is 30 metres.

Less than 15% of all movements at the airport are on runway 12/30 due to the prevailing weather conditions at Jandakot. Because of the nature of the wind conditions that exist for operations to revert to the 12 or 30 directions and the extra runway length preferred for pilot training operations

Due to the circuit capacity restrictions of single runway operations, use of the 12 or 30 runway directions is currently only implemented when cross-winds exceed 12 knots. Once the fourth runway is operational, the 12/30 direction will be used for a higher proportion of flight movements than currently occurs as the standard cross-wind criterion of 10 knots will be implemented in common with other Class D Airspace airports. In terms of movement numbers, runway 12/30 currently has an average of 85 movements per day. Once the fourth runway is operational, at the maximum airfield operating capacity there could be expected to be an average of 126 movements per day on runway 12/30 and 189 movements per day (or 94 touch-and-go circuits) on the fourth runway 12L/30R.

RUNWAY 12L/30R

The development of the fourth runway was first proposed by the Federal Airports Corporation in 1986 to support the growth in pilot training activity.

This new runway, to be called 12L/30R when operational, is planned to be 990 metres long and 18 metres wide, located parallel to the existing runway 12/30. This runway will perform essentially the same role as runway 06R/24L, which is touch-and-go circuit training for aircraft under visual meteorological conditions during daytime hours.

Provision of the fourth runway will not significantly add to the airport's overall movement capacity. The fourth runway will add to efficiency by providing an equivalent level of capacity in any wind condition, with both a primary runway and dedicated parallel training runway that can be used. This will benefit the flying training

schools that can currently be forced to curtail training activities when the 12 or 30 directions are in use due to the airspace capacity restriction of a single runway operation. The fourth runway will be built if it is required and if it is financially viable.

4.7.2 TAXIWAYS

The existing taxiway system will be augmented to support the proposed fourth runway.

The taxiway design was discussed in detail with local Air Traffic Controllers and flying schools to determine the most efficient layout. Particular attention has been given to avoiding surface movement conflict points and the potential for head-to-head taxiing conflicts. The taxiway layout also reduces the amount of time runways are occupied by taxiing aircraft.

Taxiways supporting runways 06L/24R and 12/30 (future 12R/30L) will be 10.5 metres wide meeting Code B standards, and taxiways supporting runways 06R/24L and fourth runway12L/30R will be 7.5 metres wide meeting Code A standards.

The taxiway layout is shown in Figure 4.4

4.7.3 RUNWAY END SAFETY AREAS

A runway end safety area (RESA) is provided at the end of a runway strip for safety reasons, in the event of an aircraft undershooting or overrunning the runway. MOS Part 139 requires provision of RESAs for new runways and existing runways when lengthened, unless the runway is Code 1 or 2 and is not an instrument runway. Thus RESAs exist for runways 06L/24R and 12/30 (future 12R/30L) at Jandakot Airport, The fourth runway will not require RESAs.

As the critical design aircraft is Code 2 for both runways 06L/24R and 12R/30L, in accordance with MOS Part 139, the minimum required length of a RESA is 60m (being twice that of the associated runway width). RESAs must be prepared or constructed so as to reduce the risk of damage to an aeroplane, enhance aeroplane deceleration and facilitate the movement of rescue and fire fighting vehicles. As most aircraft operating at Jandakot Airport have a maximum take-off weight of below 5,700kg, the RESA surface can be grass or gravel with sufficient strength to meet the above requirements.

4.7.4 PUBLIC SAFETY ZONES

Public Safety Zones (PSZ's) also termed Public Safety Areas (PSA's) or Runway Protection Zones (RPZ's) are designated areas of land at the end of airport runways within which development may be restricted in order to control the number of people on the ground at risk of injury or death in the event of an aircraft accident on take-off or landing.

While air crashes are rare events and Australia has an excellent safety record, there will always be an inherent risk associated with the operation of aircraft around airports. The consideration of PSAs in land use planning can further reduce this already low risk.

The National Airports Safeguarding Framework (NASF) is a national land use planning framework which has introduced a new guideline in November 2018 to provide guidance on the planning of Public Safety Areas (PSA's). Guideline 1 - Managing The Risk In Public Safety Areas At The Ends Of Runways. The guideline mentions the different PSA models that have been applied around the world such as the United Kingdom (UK), the Netherlands and United States of America. Queensland was the only state in Australia which had a recommended policy for PSA's.

JAH prepared a Major Development Plan (MDP) for the extension of runway 12/30 and taxiway system which was approved by the Federal Government in June 2016. The MDP incorporated provision of PSA's based on the US Federal Aviation Administration (FAA) requirements. The PSA's extended 300m from the end of each runway strip and were contained within the airport boundary, with the exception of a small portion at the north-eastern end of Runway 06R/24L which falls onto land zoned "Rural – Water Protection" under the Metropolitan Region Scheme.

The US FAA is a recognized and a significant aviation authority, with many ICAO rules and regulations being based or originating on work done by FAA.

Planning at Jandakot Airport to date has been based on a PSA consistent with the MDP and the Master Plan maintains this consistency.

The WA State Government does not yet have a policy addressing PSA's, and at the time of drafting this Master Plan has yet to create a policy based on the recently published NASF guidelines.

Whilst there is no policy yet, Jandakot Airport will continue to work with the State on planning policies to implement airport safeguarding including consideration of PSA's in local planning in the airport environs.

Figure 4.4 illustrates the PSA's at each of the future runway ends.

4.8 NAVIGATIONAL AIDS AND LIGHTING

4.8.1 AIRFIELD LIGHTING

Runways 06L/24R and 12/30 (future 12R/30L) are equipped with medium intensity LED runway lighting, LED holding point lighting and blue LED edge taxiway lighting. The Northern, Central and Southern aprons are equipped with green LED centreline lighting.

Existing runway 06R/24L is not lit and therefore only permits operations during full daylight hours. As the proposed fourth runway 12L/30R will fulfil the same operational use as 06R/24L (being touch-and-go circuit operations in visual meteorological conditions), lighting will not be installed on this runway.

4.8.2 NON-DIRECTIONAL BEACON

Airservices Australia provides a Non-Directional Beacon (NDB) at Jandakot Airport to facilitate location navigation for aircraft arrivals and departures. Master Plan 2009 acknowledged that the development of the fourth runway would require the relocation of the NDB.

Airservices undertook a review of NDB locations around Australia and has subsequently taken some NDBs out of service. However, it has been determined that the NDB at Jandakot Airport will need to be retained and upgraded. Due to the runway configuration at Perth Airport and Perth Airport flight tracks, other navigational aids, such as an Instrument Landing System (ILS) or Distance Measuring Equipment (DME), are not considered suitable for Jandakot Airport.

A large part of the pilot training syllabus involves flight practice using an NDB. The State Aviation Strategy (outlined in Section 2.3.1) identifies that the lack of access to common use navigation aids, such as an NDB, is a concern to the general aviation sector. Local flying schools have confirmed the importance of the NDB for pilot training activity at Jandakot. In addition, the majority of the aging aircraft fleet at Jandakot are not equipped with suitable equipment for an alternate instrument procedure. It is estimated that the NDB will be required for at least 5 years to allow time for aircraft operators to install newer navigational equipment to suit alternate instrument procedures.

Following analysis of procedural design and engineering requirements by Airservices and JAH, a preferred site for the NDB relocation has been selected in the south-west corner of the airside area as shown in Figure 4.4. The specific requirements for the siting of a NDB are detailed in the Manual of Standards. The main limitations affecting suitable locations for the NDB are the proximity to buildings and equipment such as overhead power and telephone lines, and the Obstacle Limitation Surfaces and Procedures for Air Navigation Services - Aircraft Operations which is the boundary of airspace protected by Commonwealth Legislation from intrusion or interference by anything which could affect aviation safety.

4.8.3 MOVEMENT AREA MARKINGS AND MARKERS

The airport is equipped with the prescribed movement area markings and markers, including a Movement Area Guidance (MAG) signage system. The MAG system is unlit and due to the low volume of movements at night there are currently no plans to provide illuminated signs.

4.8.4 PRECISION APPROACH PATH INDICATOR

The runway 24R approach has a Precision Approach Path Indicator (PAPI), which will be relocated as part of the runway 24R extension. A preliminary review of the Obstacle Assessment Surface for the PAPI relocation has been conducted in accordance with the MOS Part 139 standards and no obstacles were identified.

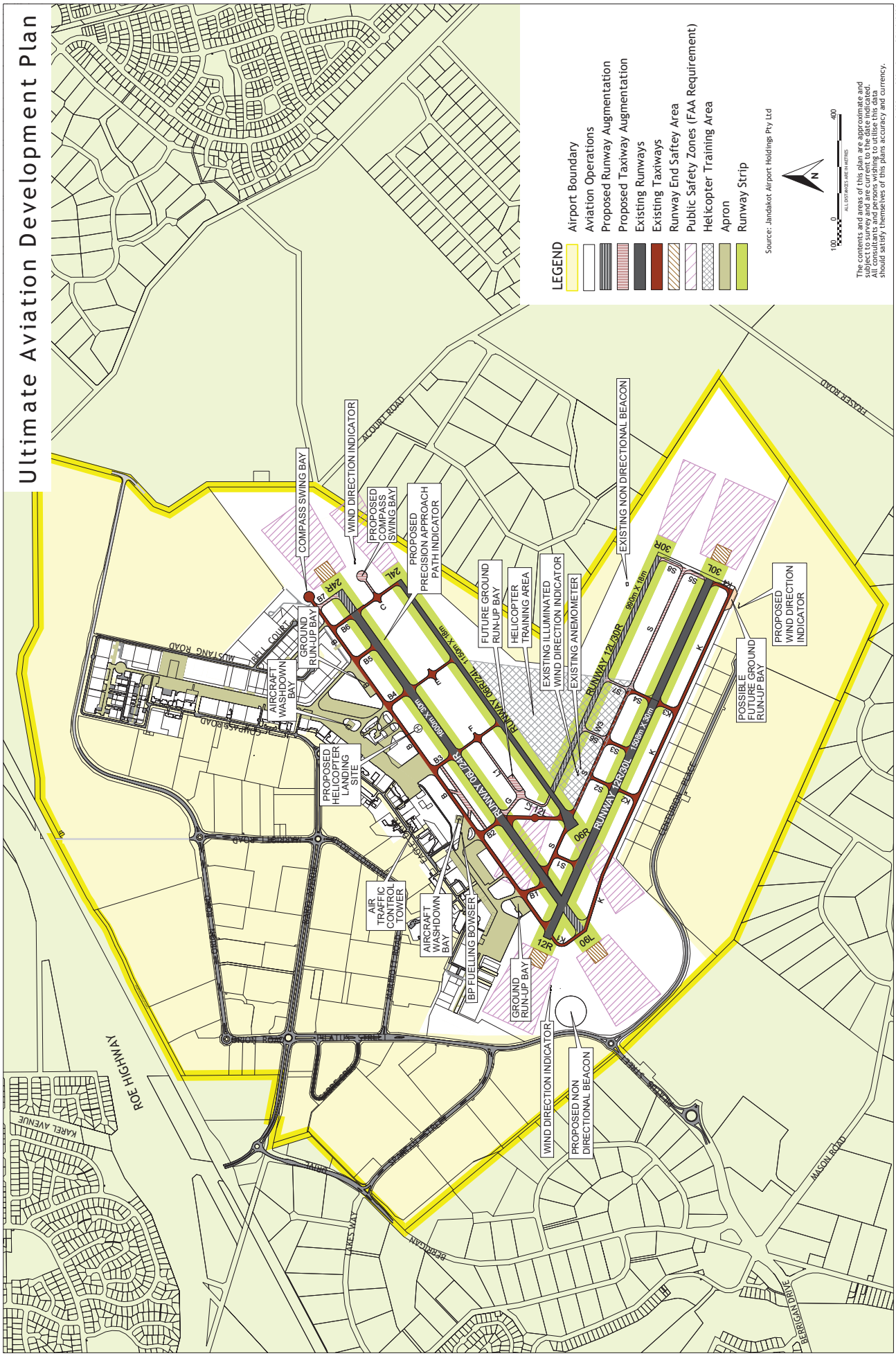
4.8.5 WIND INDICATORS

Wind indicators are required for runways with non-precision approach operations. The wind indicator, or windsock, provides pilots with a visual representation of the wind direction and velocity.

ILLUMINATED WIND INDICATOR

The illuminated wind indicator, currently located north of taxiway S4, will need to be relocated when the fourth runway is constructed. The illuminated wind indicator will be relocated at least 21.5m north of taxiway S4 in order to comply with clearance requirements from this taxiway and to be below the transitional airspace surfaces associated with runway 12/30 (future 12R/30L) and the proposed fourth runway.

FIGURE 4.4 - 2034 AIRPORT AVIATION DEVELOPMENT PLAN



NON-ILLUMINATED WIND INDICATORS

Non-illuminated wind indicators are located close to the runway 24L and 24R thresholds, and near the runway 12 threshold.

4.8.6 AUTOMATIC WEATHER STATION

The Bureau of Meteorology's existing automatic weather station (AWS), which includes an anemometer mast to measure wind speed, is co-located with the Illuminated Wind Indicator.

Construction of the fourth runway will require the AWS to be relocated due to the height of the anemometer mast infringing into the proposed new runway's Obstacle Limitation Surface (transitional surface). Discussions with the Bureau of Meteorology have identified two possible preferred locations which will satisfy the communication and power requirements of the AWS. These locations are the existing Non- Directional Beacon site and the proposed Non- Directional Beacon relocation site. The exact location for the AWS relocation will be determined as part of the detailed NDB relocation design brief.

4.8.7 AERODROME BEACON

An aerodrome beacon is a visual cue for pilots that is required to be visible from all angles of aircraft operations and not shielded by any obstacles. An aerodrome beacon is located on top of the Air Traffic Control tower and is activated when the runway lights are activated.

4.9 GENERAL AVIATION FACILITIES

4.9.1 APRONS AND AIRCRAFT PARKING

Sealed aprons are provided in front of most existing aircraft hangar building areas. It is a JAH requirement that all new hangar developments provide adequate apron space for aircraft parking.

JAH also provides both hardstand and grass aircraft parking bays at various locations within the apron area. These bays are available for long-term or short-term (casual) aircraft or helicopter parking. Tie-down facilities are provided as required on some hardstand areas.

4.9.2 AVIATION FUEL

The two aviation refuellers operating at Jandakot Airport are Air BP and Viva Energy. Jet A-1 and AVGAS fuel is mainly provided to aircraft by mobile re-fuelling vehicles. Air BP also has a fuel storage facility and a dispensing bowser on the southern apron.

4.9.3 COMPASS SWING BAY

Compass swings are required as a component of some aircraft maintenance activities to determine and reduce magnetic deviation coefficients and record the residual deviations.

The current compass swing bay at the northern end of taxiway B is closer to the hangar at the end of Bell Court than what is suggested in the design guidelines detailed in Advisory Circular 139-15, however surveys over the last ten years have indicated that the hangar has no magnetic effect on the swing bay. A potential new compass swing bay position has been identified to the north of taxiway C3/C4 (between runways 06L/24R and 06R/24L).

4.9.4 GROUND RUN-UP

Engine ground running is required for pre-flight run-up and for engine testing after maintenance. The airport has two existing designated engine ground run-up bays, with a further two potential locations identified.

The existing northern bunded run-up bay is located opposite the north-eastern end of runway 06L/24R, adjacent to taxiway B5. This bay is located close to major aircraft maintenance facilities and is frequently used for engine run-up after maintenance or overhaul.

The existing southern run-up bay is located near the Royal Aero Club of WA building, adjacent to taxiway B1.

An un-bunded central run-up bay is proposed between the two 06/24 runways adjacent to taxiway L1 to be used primarily for proposed runway 12L departures.

A fourth possible run-up bay could be provided at the end of new taxiway K to serve aircraft operating on runways 30R and 30L, depending on operator requirements.

The tie down run-up position on taxiway G is no longer used and will be decommissioned when proposed runway 12L/30R is constructed.

4.9.5 AIRCRAFT WASH BAYS

There are two common-user aircraft wash bays which are currently provided free-of-charge to operators. The bays are located on the southern and central aprons, away from the Jandakot Underground Water Pollution Control Area.

4.10 AIR TRAFFIC CONTROL

Jandakot Airport is designated as a general aviation aerodrome and operates to Class D Airspace procedures. The Jandakot Control Zone encompasses the airspace within a 3 nautical mile radius of Jandakot Airport, with an airspace upper limit of 1,500 ft (457.2 meters) Above Mean Sea Level.

4.10.1 AIR TRAFFIC CONTROL TOWER

Air Traffic Control (ATC) is administered by Air services Australia from a control tower located centrally along the airfield apron. The interior of the tower was refurbished in 2013.

4.10.2 TOWER LINE OF SIGHT

The ATC Tower is required to be sited in a location that enables clear lines of sight, unimpaired by direct

or indirect external light sources such as apron lights, car parking lights, surface traffic and street lights and reflective surfaces. There is no development proposed in this Master Plan that will compromise appropriate lines of sight from the ATC Tower.

4.10.3 HOURS OF OPERATION

The current hours of operation of the ATC Tower are:

- 7.00 am to 9.00 pm weekdays (or 7.00 am to 8.00 pm June to August only); and
- 8.00 am to 6.00 pm weekends.

The ATC Tower is currently operational for over 95% of all movements. There is no expected change to ATC Tower operating hours as a result of the airfield development as the proposed fourth runway will not be lit and will therefore be used in daylight hours only.

The airport continues to operate while the ATC Tower is closed, with set Common Traffic Area Frequency procedures for pilots to make mandatory radio calls advising their position and to sequence themselves within the Jandakot Control Zone.

4.10.4 NOMINATING DUTY RUNWAYS

Runway selection is determined by wind direction and strength as pilots prefer to take-off and land into the prevailing wind. During ATC Tower operating hours, the Air Traffic Controllers stipulate which runway direction must be used. When the tower is closed, the pilot will determine which runway to use based on the direction and speed of the wind.

Currently the two parallel runways (06L/24R and 06R/24L) are used for approximately 85% of all movements and runway 12/30 is used for 15% of all movements. While use of the runway 06 and 24 directions is consistent throughout the year, use of the runway 12 and 30 directions is very seasonal. Nearly 95% of all movements in the runway 12 direction occur between October and May due to the easterly winds that favour use of runway 12. The runway 30 direction is generally only used in north-westerly winds experienced during periods of stormy weather (currently less than 6% of all movements use runway 30).

Jandakot Airport procedures will revert to the standard 10 knot crosswind criteria for use of the 12 and 30 runway directions once the proposed fourth runway is constructed. It is expected that the use of the 12 and 30 runway directions will then increase from 15% to 25% of all movements.

4.10.5 SEQUENCING OF AIRCRAFT

The high volume of aircraft traffic and radio frequency congestion add to convoluted sequencing requirements and instructions when single runway 12/30 is in use. The addition of the proposed fourth runway 12L/30R will minimise and simplify sequence instructions to aircraft as arriving aircraft will no longer be required to be sequenced with aircraft conducting circuits, thereby facilitating additional capacity for training aircraft.

4.11 HELICOPTER OPERATIONS

4.11.1 LANDING SITES

Jandakot Airport currently has two helicopter landing sites. The central pad is located in front of the ATC Tower and is used mainly for itinerant (casual) helicopter operations. The landing site will be relocated 300m north-east, adjacent to taxiway B4 as shown in Figure 4.4, to make way for a taxiway parallel to B3 that will act as a bypass lane during times of heavy surface

traffic. The proposed helicopter landing site remains within line of sight of the ATC Tower. Due to increased helicopter movements in the helicopter precinct a second helicopter landing site (the eastern pad) was constructed in 2015. This pad is situated 50m north east of taxiway C, opposite the helicopter precinct, and also has direct line of site to the control tower.

During tower hours all helicopter movements are controlled by ATC. During CTAF hours all helicopter arrivals/departure are required to occur on either of the two helicopter landing sites or on the runways.

4.11.2 TRAINING AREA

A dedicated grass helicopter training area is provided in the area bounded by the runway 06R/24L strip, taxiway S and the airport boundary as shown in Figure 4.4. An auto-rotative aiming point is identified by an asphalt marker within the training area.

Unless otherwise directed by ATC, helicopter operations in the training area are required to be conducted 100m away from the runway and are limited to a maximum height of 200ft (61m) above ground level.

When the 06 and 24 runway directions are in use, helicopter training can also be conducted on runway 30. Similarly, the runway 06R/24L strip can be utilised for helicopter training activities when the 12/30 runway is in use. This allows three helicopters to conduct training concurrently, subject to ATC workload and approval.

Helicopter aiming points will be positioned between each of the parallel runway systems to assist with ATC control and appropriate separation of helicopter training activity.

5. NON-AVIATION DEVELOPMENT

This chapter outlines a development strategy for the precincts identified for non-aviation (mixed business) development in Chapter 3. The purpose of the strategy is to provide development direction guided by sound on-airport and off-airport planning principles to achieve the objectives of the Master Plan.

Airport development since Master Plan 2014 was approved includes:

- The extension of Pilatus Street to Jandakot Road beyond the boundary of the airport, to provide another access point for the airport;
- Clearing, earthworks and construction of roads and services for Precincts 6 and 6A;
- Upgrade of water supply, streetlights and footpath to Eagle Drive;
- Installation of a secondary water supply and pump station; and
- Development of a number of mixed business sites.

5.1 NON-AVIATION DEVELOPMENT OBJECTIVES

The non-aviation development objectives of JAH are consistent with the development objectives of the airport site as identified at Section 1.9. The non-aviation development objectives are to:

- Integrate the airport's overall aviation and non-aviation development;
- Integrate the current regional and local planning schemes surrounding the airport with the aviation and non-aviation land uses, as required by the *Airports Act 1996*;
- Ensure that development provides a pleasant environment for visitors to, and workers at, the airport; and
- Provide alternative revenue streams to diversify income and reduce the risk of a single source income.

5.2 DEVELOPMENT DRIVERS

5.2.1 COMPETITIVE ADVANTAGE

Jandakot Airport is located 16km south of the Perth city centre and is a short distance from direct access points to Kwinana Freeway and Roe Highway. During off-peak periods, travel time by car is 15-20 minutes to the Perth CBD and 35 minutes to Perth's east, west and northerly suburbs and industrial areas.

Strengths of the Perth metropolitan region and Western Australia that are especially relevant to non-aviation development include:

- Proximity to the south east Asian market - which is projected to enjoy strong economic growth in the coming decades;
- Strong resource industries - with the strong mining, agricultural, oil and gas industry base, the long term economic outlook for Western Australia is strong;
- Good lifestyle - Western Australia enjoys a quality lifestyle;
- Attractive tourist destination - Western Australia is expected to continue to grow as a tourist destination;
- Above average population growth - by maintaining a strong economic base and providing a quality lifestyle, Western Australia is experiencing strong population growth;
- High demand for commercial and industrial property - the Perth metropolitan region is experiencing a shortage of commercial and industrial land. As a result, the non-aviation land at Jandakot Airport offers attractive opportunities, particularly given its convenient access to the port of Fremantle and the surrounding major regional and district road systems and its flexibility in providing for larger lot sizes;
- Economic stability - Western Australia's economy remains stable in the current difficult economic conditions being experienced worldwide;
- Political freedom and stability - Western Australia enjoys a stable political and social environment;
- High quality infrastructure - development and growth in the Perth metropolitan region is supported by well managed governance and high quality infrastructure; and
- Educated and skilled workforce - economic growth in the Perth metropolitan region is supported by an educated and skilled workforce.

5.2.2 COMMERCIAL OPPORTUNITIES

Based on the development of Jandakot Airport to date, demand for non-aviation development is envisaged to predominantly be warehouse, business, office, workshop

and storage type uses. Jandakot Airport has become an oil and gas hub with tenants such as General Electric (Oil & Gas), Halliburton, Schlumberger, Oceaneering and IOT Group based at the airport.

5.2.3 DIVERSIFIED INCOME STREAM

The Commonwealth lease for Jandakot Airport stipulates that the lessee (JAH) must maintain the runways, taxiways and all parts of the airport. The incomes derived from general aviation activities falls well short of that required to maintain the airport in accordance with the lease. The shortfall in income was one of the key reasons for the "privatisation" of airports by the Commonwealth. It is essential therefore that the lessee derives income from other sources.

The lease provides for the development of airport land not required for aviation purposes. Development of this land, as outlined in this Master Plan will provide essential income for the maintenance of the airport.

5.3 DEVELOPMENT STRATEGY

The 622 hectares of land which comprise the Jandakot Airport estate has been divided into six precincts (plus sub-precincts), as shown in Figure 3.1, with the three land uses as outlined in Chapter 3 being 'Conservation', 'Aviation Operations' and 'Mixed Business'. The land use identified for the precincts will facilitate the identification of specific activities and will assist with the development programming and marketing.

The precincts have been formulated with regard to:

- Location and access;
- High value bushland;
- Aviation constraints (e.g. aircraft noise and airspace requirements);
- Flexibility of use and subdivision; and
- Provision of infrastructure.

5.4 RECENT NON-AVIATION DEVELOPMENT

As noted at Section 2.2.1, the following MDPs for non-aviation development were approved since, or were approved shortly prior to, the approval of the Master Plan 2014, and have since been completed:

- ALDI Distribution Centre, located within Precinct 4; approved by the Minister for Infrastructure and Regional Development on 12 August 2014; and
- K Mart Distribution Centre, located within Precinct 5; approved by the Minister for Infrastructure and Regional Development on 12 January 2015.

These developments comprise a total built footprint area of approximately 87,000sqm and will provide direct employment for approximately 420 staff.

Non-aviation development that has occurred over the last 5 years is summarised as follows:

- Civil and services infrastructure for Precinct 6 and 6A;
- Extension of Pilatus street from the airport to the Berrigan Drive/Jandakot Road intersection; and
- Commercial development (inclusive of the MDPs noted above): 460,000sqm of land, 138,000sqm of warehouse space, 17,000sqm of workshop space and 10,000sqm of office space.

Detail on the non-aviation development that has occurred at Jandakot Airport to-date more generally is provided at Section 1.6, and also at Section 5.2.2 which notes a number of oil and gas industry tenants that have chosen to locate at Jandakot Airport.

5.5 MIXED BUSINESS PRECINCTS

Development on airport land is not subject to State or Local Government planning processes, however, the designation of the Mixed Business Precincts is consistent with the City of Cockburn's 'Mixed Business' zone.

5.6 DEVELOPMENT OVER THE NEXT EIGHT YEARS

Over the eight year period of this Master Plan, it is forecast that the following floor space could be developed, providing for approximately 2,028 employees:

- 146,250 square metres of warehouse space;
- 36,000 square metres of manufacturing space; and
- 20,250 square metres of office space.

The timing of this development will be subject to the market and prospective tenant demand for commercial floor space as experienced in the Perth metropolitan region and is expected to be primarily located within Precincts 4, 5 and 6.

The economic benefits of this level of floor space being developed and people employed are outlined in Section 1.7.

5.7 SIGNIFICANCE OF NON-AVIATION DEVELOPMENT

As outlined in Chapter 1 it is envisaged that ultimate non-aviation development of Jandakot Airport will occur within the 20 year period of this Master Plan, and will accommodate a total of approximately 725,000 square metres of non-aviation floor space floor space, comprising 525,000 square metres of warehouse, 128,000 square metres of manufacturing, 67,000 square metres of office and 5,000 square metres of retail (already constructed) floor space. Upon this ultimate development it is expected that approximately 6050 employees associated with non-aviation development will be located on the airport estate.

5.8 CONSISTENCY WITH STATE AND LOCAL GOVERNMENT PLANNING FRAMEWORKS

5.8.1 STATE GOVERNMENT PLANNING FRAMEWORK

The State Government recognises Jandakot Airport as a vital piece of infrastructure and has identified the airport as a specialised activity centre. As the land on which the airport is located is owned by the Commonwealth Government and the airport is subject to Commonwealth legislation, State planning laws do not apply to the airport site.

The State's planning framework encourages the non-aviation development of the airport, with the planning documents outlined in Chapter 2 designating the airport a 'Specialised Activity Centre', with available industrial land that can be developed in the short term to contribute to local employment and the economic development of the State.

The proposed non-aviation development of the airport is consistent with the State planning framework as it will support the growth of the aviation sector of the airport and has identified land uses consistent with the local government planning framework.

5.8.2 LOCAL GOVERNMENT PLANNING FRAMEWORK

The land uses proposed for the non-aviation development ('Mixed Business') precincts on the airport are based on the City of Cockburn's 'Mixed Business' zone to provide a consistent approach to land use planning between the airport and the surrounding area. This approach is consistent with the City of Cockburn's Local Commercial and Activity Centres Strategy (2012) which recognises Jandakot Airport as a Specialised Centre, (as per the State planning framework), and a strategic employment centre that is forecast to provide more businesses and jobs into the future.

5.8.3 SURROUNDING LAND USE

Land located immediately south and west of the airport is predominantly zoned 'Resource' under the City of Cockburn Town Planning Scheme No. 3. This 'Resource' zoned land is predominantly rural-residential in use and provides protection to the Jandakot Underground Water Protection Control Area. More intense residential development on surrounding land zoned 'Resource' would not be appropriate due to its proximity to the airport and the Jandakot Underground Water Protection Control Area.

Roe Highway borders the north of the airport and creates a physical barrier between the airport and residential areas located further north within the City of Melville.

Land located immediately east of the airport varies and includes 'Resource' zoned land under the City of Cockburn Town Planning Scheme No. 3 and land reserved for 'Parks and Recreation' and land reserved for 'Public Purposes – Special Uses' under the Metropolitan Region Scheme, each of which is reflected under the City of Cockburn Town Planning Scheme No. 3 and the City of Canning Town Planning Scheme No. 42, respectively.

6. GROUND TRANSPORT PLAN

Additional transport links to the Perth Metropolitan Region are essential to maximise Jandakot Airports' potential for aviation and non-aviation land uses.

Since approval of the Master Plan 2005, JAH has contributed $3.8 million for the construction of a bridge over the Roe Highway railway track to negate the dangerous level crossing that existed at the entrance to the airport. The entry road, Karel Avenue, has been upgraded to a four-lane carriageway with bicycle lanes in both directions. JAH has contributed $3.8 million to the Berigan Drive Upgrade project which included the extension of Pilatus Street beyond the airport boundary to Jandakot Road. JAH has also agreed to contribute $2.5 million to the Karel Avenue Upgrade Project. The internal road network has been built to facilitate the development of the airport as provided for in this Master Plan 2020.

6.1 ROAD ACCESS

Jandakot Airport's location enables good access via the surrounding key road network to the wider Perth metropolitan region. However, during morning and afternoon peak periods the road network surrounding the airport experiences significant traffic volumes, primarily due to traditional metropolitan peak periods unrelated to Jandakot Airport traffic, resulting in some of these roads and intersections operating beyond their design capacity.

The key primary distributor roads providing access to Jandakot Airport include Kwinana Freeway, Roe Highway and South Street. Other key distributor roads include Ranford Road, Berrigan Drive, Karel Avenue and Jandakot Road.

Access to Jandakot Airport is currently provided from Berrigan Drive to Pilatus Street (from the south) or Karel Avenue (from the north). Karel Avenue has been upgraded by JAH from a two-lane undivided road to a four-lane divided road from Marriott Road up to the Berrigan Drive intersection. The section of Pilatus Street from Karel Avenue to Marriott Road is also constructed to this standard. All other roads within the airport boundary are two-lane divided or undivided roads.

Karel Avenue is currently being upgraded from a two-lane to a four-lane divided road from Berrigan Drive to Roe Highway.

Berrigan Drive is two-lanes undivided from Karel Avenue to Pilatus Street and then two-lanes divided west of Pilatus Street. The southern section of Pilatus Street was constructed to two-lane divided standard by the City of Cockburn in 2017 to complete the southern link from Berrigan Drive into Jandakot Airport.

Jandakot Road is currently an undivided two-lane road except for the western end which was upgraded to four-lane divided standard in 2017 when the Berrigan Drive/ Jandakot Road/Dean Road/Pilatus Street intersection was upgraded to a signalised four-way intersection by the City of Cockburn. The section of Jandakot Road from Solomon Road to Fraser Road has also been upgraded to four-lane divided standard in 2020.

Freight traffic is appropriately accommodated on the surrounding road network. Rigid trucks up to 12.5m and semi-trailers up to 19m long (with various other restrictions on maximum load, height, width etc.) are 'as-of-right' vehicles that are generally allowed to use any road in Western Australia without requiring special permits. Almost all roads in WA, except sections of four roads in the metropolitan area, are automatically included in the Restricted Access Vehicles (RAV) Network 1, which is permitted for several vehicle combinations such as short B-doubles up to 20m long (maximum mass 50 tonnes). Kwinana Freeway (north of Roe Highway), Jandakot Road, Pilatus Street, Berrigan Drive (east of Kwinana Freeway) and Karel Avenue (south of Roe Highway) are all included in RAV Network 4, which allows 2-trailer vehicle combinations up to 27.5m long and maximum load up to 87.5 tonnes. Roe Highway and Kwinana Freeway south of Roe Highway are included in RAV Network 7, which allows 2 or 3-trailer vehicle combinations up to 36.5m long and maximum load up to 107.5 tonnes. The major roads within Jandakot Airport are also included in RAV Network 4, including Karel Avenue (west of Marriott Rd), Pilatus Street, Spartan Street, Mariott Road and Orion Road (west of Marriott Road).

6.2 PROPOSED ROAD NETWORK

Access to Jandakot Airport is via the following connections:

1. Existing access from Karel Avenue/Berrigan Drive intersection is being upgraded to a two-lane roundabout;

2. Existing access from Berrigan Drive via Spartan Street (left in/left out only at Berrigan Drive);
3. Existing access from Pilatus Street via Jandakot Road/ Berrigan Drive/Dean Road/Pilatus Street signalised intersection.
4. Karel Avenue Upgrade Project – Main Roads WA is currently widening Karel Avenue to four lanes divided from Farrington Road to Jandakot Airport. Funding has been sourced from JAH, Metronet and the State Government; and
5. Proposed East Link road – consultation with State and Local Governments resulted in a plan to connect to Johnston Road through to Ranford Road. Accordingly the State Government has amended the Metropolitan Region Scheme to include an "Other Regional Roads" Reservation for the East Link road from Ranford Road to the Jandakot Airport boundary at Johnston Road. JAH propose to extend Orion Road to meet Johnston Road at the boundary of the airport.

In March 2018 the State Government finalised its Perth and Peel @ 3.5million suite of land use planning and infrastructure frameworks. Jandakot Airport is located within the area of the South Metropolitan Peel Sub- regional Planning Framework. Significantly, it proposes to expand the network of regional roads to include Jandakot Road, Pilatus Street and Orion Road as 'integrator arterial' roads. In that Framework these are treated as the same status as existing Other Regional Roads Reservations in the Metropolitan Region Scheme. (In terms of the naming system in the Main Roads WA functional road hierarchy, various 'integrator arterial' roads correspond to District Distributor A and B or Regional Distributor classifications.)

Figure 6.1 shows the current road network, with the proposed road network comprising the roads identified as 'Future District Distributor A' or 'B'. It is anticipated that all of these road network connections identified as Future District Distributor A or B will be in place within the 8 year time frame of this Master Plan. Within the airport these will be constructed as two-lane roads. Jandakot Airport does not plan to upgrade these roads to four-lane standard within the airport.

6.3 TRAFFIC GENERATION – EIGHT YEAR AND ULTIMATE DEVELOPMENT IMPACT

Traffic generation from the full development of Jandakot Airport was previously forecast at 23,100 vehicles per day using the Main Roads WA ROM traffic model based on a development scenario that anticipated a workforce of approximately 8,050 employees at Jandakot Airport, including all aviation and non-aviation related land uses.

These projections remain unchanged for Master Plan 2020.

The proposed road network on the Jandakot Airport estate has been capacity tested to both the 2039 ultimate development traffic forecast of 23,100 vehicles per day, and the eight year development traffic forecast of 12,600 vehicles per day (based on approximately 4,400 workforce), which has confirmed that the proposed road network can accommodate the forecast traffic volumes.

6.4 TRAFFIC FORECAST

Road modelling has been undertaken for year 2039.The traffic modelling assumes full development of Jandakot Airport by this time.

Figure 6.2 shows the modelled total daily traffic flows at 2039 and the traffic associated with land uses at Jandakot Airport, in the context of the general regional traffic volumes unrelated to Jandakot Airport. This demonstrates that whilst traffic accessing Jandakot Airport uses the surrounding road network, the airport traffic has less impact on the surrounding network than the impact that will be felt within the airport site as a result of through traffic from the surrounding area.

The State Government is currently undertaking significant road upgrades on Kwinana Freeway and Armadale Road in the vicinity of Jandakot Airport to address existing traffic congestion on these primary regional roads. However, regional traffic growth over the next twenty years is anticipated to use up all that additional capacity, resulting in traffic congestion again during peak periods. The new 'integrator arterial' roads through the Jandakot Airport site could be attractive short-cuts for some of that regional traffic in this longer term planning horizon.

The traffic modelling indicates that Jandakot Airport traffic is anticipated to represent the following proportion of total traffic on key road links in 2039:

- 35% on Karel Avenue extension east of Berrigan Drive (within the airport estate) – 9,100 airport-related vehicles per day out of a total 25,800 vehicles per day;
- 59% on Pilatus Street (within the airport estate) – 9,500 airport-related vehicles per day out of a total 16,000 vehicles per day;
- 23% on the East Link road (within the airport estate) – 4,200 airport-related vehicles per day out of a total 18,300 vehicles per day;
    - 22% on Karel Avenue (northwest of Berrigan Drive)
    - – 10,000 airport-related vehicles per day out of a total 44,600 vehicles per day;
    - 15% on Berrigan Drive (southwest of Jandakot Road) – 5,400 airport-related vehicles per day out of a total 37,000 vehicles per day;
    - 12% on Jandakot Road (southeast of Berrigan Drive) – 3,000 airport-related vehicles per day out of a total 24,400 vehicles per day; and
    - 6% on Berrigan Drive (south of Karel Avenue) – 1,100 airport-related vehicles per day out of a total 19,700 vehicles per day.

6.5 ROAD UPGRADES

Traffic modelling indicates significant growth of regional traffic in the vicinity of the airport. A number of upgrades will be required to the existing road network to accommodate the increased traffic demand in this area, primarily associated with the growth of regional traffic unrelated to Jandakot Airport, as demonstrated in Figure 6.2.

The road upgrades required around Jandakot Airport, triggered by regional growth and the airport development, are shown in Figure 6.3 and are summarised as follows:

- Karel Avenue between Berrigan Drive and Roe Highway which is currently being upgraded to a four-lane divided road. ;
- The Berrigan Drive and Karel Avenue intersection is being upgraded to a two-lane roundabout to replace the existing single-lane roundabout in conjunction with the Karel Avenue upgrade works in 2020;
- The East Link road requires a two-lane arterial road with turn lanes at controlled junctions to be built along the Johnston Road alignment to join Ranford Road. JAH will then build the extension of Orion Road to meet Johnston Road at the airport boundary. The timing of these works is yet to be determined. The 'Other Regional Roads' reservation in the Metropolitan Region Scheme from the airport boundary to Ranford Road is wide enough for this new road to be upgraded to four-lane divided if required in future; and
- Pilatus Street has been constructed as a two-lane arterial road with roundabouts or with turn lanes at controlled junctions. The road reserve is wide enough for this road to be upgraded to four-lane divided if required in future.

In addition to the road upgrades above there are other longer term regional road capacity issues on the surrounding regional road network (e.g. Kwinana Freeway, Roe Highway, Ranford Road and Armadale Road). These issues are related primarily to regional traffic generation, unrelated to Jandakot Airport and are matters to be resolved by State and Local Governments.

6.6 RESPONSIBILITY AND FUNDING OF ROAD UPGRADES

The proportion of total traffic that is associated with the airport, as discussed in Section 6.4 and shown in Figure 6.2.

6.6.1 EAST LINK ROAD

The East Link road located on the Jandakot Airport estate will be constructed and maintained by JAH. The cost of the intersection of this road at the airport boundary with Johnston Road (controlled by Local Government) will be determined and agreed through discussions between JAH and the relevant Local Governments. JAH has recommended an unsignalised T-intersection to discourage unnecessary traffic travelling though the airport precinct.

Ownership, responsibility and maintenance of the intersection and Johnston Road (off the airport) will remain with Local Government.