

Perth Airport 

Master Plan 2020

APRIL 2020







Section 2: **Planning Context**

Perth Airport's success goes hand-in-hand with meeting today's challenges while planning for the future.



2.1 The Importance of Integrated Planning

Perth Airport recognises that its infrastructure plans cannot be developed in isolation from those authorities with responsibility for land-use planning in metropolitan Perth. Close and effective cooperation between Perth Airport and other authorities and infrastructure providers is critical because:

- Perth Airport's operations impact surrounding communities including the natural environment, and
- the capacity of Perth Airport to meet the community's needs is affected by land-use and infrastructure decisions made beyond the airport boundary.

2.2 Master Plan Process

A master plan is a high-level planning document with a planning period of 20 years. It incorporates:

- an Environment Strategy,
- a Ground Transport Plan, and
- details on the development to be undertaken within the first five years of the plan.

A master plan is required to be reviewed every five years and must be consistent with the *Airports Act 1996* (the Airports Act).

The Master Plan 2020 is a central element of Perth Airport's Integrated Planning Framework. It provides transparency and facilitates public scrutiny of Perth Airport's medium and long-term development plans and environmental management. It also provides much of the information that other planning authorities need to enable them to assess and plan for the interaction of the airport with other public infrastructure.

It is important to note that once a master plan is approved by the Federal Minister for Infrastructure, Transport and Regional Development (the Minister), it does not provide automatic approval for development to occur. Further Commonwealth approval processes are required as outlined in Section 11.

2.3 Commonwealth Policy

In 2013, the Commonwealth Government released its Policy for Aviation. The Policy includes a number of initiatives, such as:

- establishing a formal Aviation Industry Consultative Council to meet regularly with the Minister,
- establishing a high-level external review of aviation safety and regulation in Australia,
- reforming the structure of the Civil Aviation Safety Authority (CASA),
- focusing on better use of Australian airspace,
- supporting regional aviation by introducing a new and better targeted En-route Rebate Scheme,
- recognising the importance of Australian airports to the economy,
- enhancing aviation skills, training and development, and
- ensuring that aviation security measures are risk based.

The Policy highlights that airports must remain dedicated to providing aviation services, and that other developments on site should not be approved if they compromise the current or future aviation operations of the airport. It reflects the essential role of Australian airports, from major gateway airports and small regional airports to those that support flight training and general aviation. This Master Plan 2020 is consistent with the Government's Aviation Policy as it supports development, improvement and safeguarding of aviation infrastructure at Perth Airport.

2.3.1 National Airports Safeguarding Framework

The Commonwealth Government recognises that the current and future viability of aviation operations at Australian airports can be impacted by inappropriate developments in areas beyond the airport boundary.

The National Airports Safeguarding Advisory Group (NASAG), comprising high-level Commonwealth, State and Territory transport and planning officials, prepared and released the National Airports Safeguarding Framework (NASF) in May 2012.

The NASF aims to safeguard airports and the communities in their vicinity, and to develop, with State, Territory and Local Governments, a national land-use planning regime.

The purpose of the framework is to enhance the current and future safety, viability and growth of aviation operations at Australian airports, by supporting and enabling:

- the implementation of best practice land use assessment and decision making in the vicinity of airports,
- assurance of community safety and amenity near airports,
- better understanding and recognition of aviation safety requirements and aircraft noise impacts in land use and related planning decisions,
- the provision of greater certainty and clarity for developers and land owners,
- improvements to regulatory certainty and efficiency, and
- the publication and dissemination of information on best practice in land use and related planning that supports the safe and efficient operation of airports.

Perth Airport believes that the NASF considers a comprehensive range of important safety matters and supports the framework. As a critical future element of public infrastructure to Western Australia, Perth Airport must be safeguarded against inappropriate land development. Perth Airport seeks to implement the NASF where applicable throughout its planning, as outlined in Section 7.

2.3.2 Key Policy Principles for Airspace Administration

The Commonwealth Government recognises airspace as a national resource overlying territorial Australia and adjacent oceanic regions. Legislation and policy relating to airports and aviation, including airspace, is overseen by the Commonwealth Department of Infrastructure, Transport, Regional Development and Communications.

Key principles have been developed by the Commonwealth Government to guide the administration of airspace as a national resource. The principles are specified in the Australian Airspace Policy Statement (2018), and summarised below:

- shall be in the best interests of Australia,
- shall consider the current and future needs of the Australian aviation industry, which includes civil and military aviation,
- shall consider cost implications for all airspace users,
- shall consider adopting proven international best practice airspace systems adapted to benefit Australia's aviation environment, and
- shall take advantage of advances in technology wherever practicable.

The Civil Aviation Safety Authority (CASA) sets regulations and standards for civil aviation operations in Australia, with the Office of Airspace Regulation (OAR) regulating airspace aspects. The Commonwealth Department of Defence is responsible for military aviation operations. Air traffic services are provided by Airservices Australia and the Commonwealth Department of Defence. Perth Airport is surrounded by both civil and military airspace.

2.4 Commonwealth Regulatory Framework

Perth Airport is located on land owned by the Commonwealth of Australia and, although the day-to-day management of Perth Airport was privatised in 1997, the Commonwealth Government continues to play an important regulatory and oversight role through the Airports Act and associated regulations. This statutory regime ensures that the public interest is protected.

The key Commonwealth legislation applicable to planning, land use, and development of Perth Airport comprises:

- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*,
- *Airports Act 1996*,
- 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,
- *Airspace Act 2007*,
- *Aviation Transport Security Act 2004*,
- *Civil Aviation Act 1988*,
- Civil Aviation Regulations 1988,
- Civil Aviation Safety Regulations 1998,
- *Environment Protection and Biodiversity Conservation Act 1999*, and
- *Native Title Act 1993*.

2.4.1 Airports Act 1996

The Airports Act is the principal statute regulating the ownership, management and operation of the leased Commonwealth airports. Part 5 and Part 6 of the Airports Act prescribe controls over land use planning, environment management and development at airports, including the requirements for a Final Master Plan and Major Development Plans.

Under Section 70 (1) of the Airports Act, each airport is required to produce a Final Master Plan. The Final Master Plan is one that has been submitted to the relevant Federal Minister as a draft and approved by the Minister. Prior to submitting a Draft Master Plan to the Minister, the airport is required to consider public comments. Subsequent developments at the airport must be consistent with the Final Master Plan.

Section 70 of the Airports Act states 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,
- 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 its uses 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.

Section 71(2) of the Airports Act requires a final master plan to include:

- a) the airport-lessee company's development objectives for the airport,
- 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,
- 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,
- 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,
- da) flight paths (in accordance with regulations, if any, made for the purpose of this paragraph) at the airport,
- 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,
- f) the airport-lessee company's assessment of environmental issues that might reasonably be expected to be associated with the implementation of the plan,
- 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),
- ga) in relation to the initial period (see subsection (3A) of the master plan – a plan for a ground transport system on the landside of the airport that details:
 - i. a road network plan,
 - ii. the facilities for moving people (employees, passengers and other airport users) and freight at the airport,
 - 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,
 - iv. the arrangements for working with the State or local authorities or other bodies responsible for the road network and the public transport system,
 - v. the capacity of the ground transport system at the airport to support operations and other activities at the airport,
 - 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,
- gb) in relation to the initial period (see subsection (3A) of the master plan – detailed information on the proposed developments in the master plan that are to be used for:
 - i. commercial, community, office or retail purposes,
 - ii. for any other purpose that is not related to airport services,
- gc) in relation to the initial period (see subsection (3A) of the master plan – the likely effect of the proposed developments in the master plan on:
 - i. employment levels at the airport,
 - 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,
- h) in relation to the initial period (see subsection (3A) of the master plan - an environment strategy that details:
 - i. the airport-lessee company's objectives for the environmental management of the airport,
 - 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,

- iii. the sources of environmental impact associated with civil aviation operations,
 - iv. the studies, reviews and monitoring to be carried out by the airport-lessee company in connection with the environmental impact associated with civil aviation operations,
 - v. the time frames for completion of those studies and reviews and for reporting on that monitoring,
 - 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 civil aviation operations,
 - vii. the time frames for completion of those specific measures,
 - viii. details of the consultations undertaken in preparing the strategy (including the outcome of the consultations),
 - ix. any other matters that are prescribed in the regulations,
- i) such other matters (if any) as are specified in the regulations.

In accordance with these requirements, the Commonwealth Minister for Transport and Regional Services approved Perth Airport's first master plan in May 1999.

The Master Plan 2014 was approved by the Commonwealth Minister for Infrastructure and Regional Development, the Hon. Warren Truss, on 9 January 2015. A minor variation to the Master Plan 2014 was approved by the Commonwealth Minister for Infrastructure and Transport, the Hon. Darren Chester MP, on 15 June 2017.

A compliance matrix for this Master Plan 2020 against the relevant requirements of the Act and associated regulations is included in Appendix A.

2.4.2 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides the Commonwealth framework for, amongst other things, protecting and managing nationally and internationally important flora, fauna, ecological communities and heritage places that are defined in the EPBC Act as 'matters of national environmental significance'. The EPBC Act also confers jurisdiction over actions that have the potential to make a significant impact on the environment where the actions affect, or are taken on, Commonwealth land or are carried out by a Commonwealth agency.

It provides a legal 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. The nine matters of national environmental significance to which the EPBC Act applies are:

- world heritage sites,
- national heritage places,
- wetlands of international importance (listed under the Ramsar Convention),
- listed threatened species and ecological communities,
- migratory species protected under international agreements,
- Commonwealth marine areas,
- the Great Barrier Reef Marine Park,
- nuclear actions (including uranium mines), and
- a water resource, in relation to coal seam gas development and large coal mining development.

The EPBC Act also confers jurisdiction over actions that have the potential to make a significant impact on the environment where the actions affect, or are taken on, Commonwealth land or are carried out by a Commonwealth agency (even if that significant impact is not one of the nine matters of national environmental significance). Collectively these are termed 'protected matters'.

The EPBC Act has provisions which address any action likely to have a significant impact on a protected matter. A significant impact, as defined by the EPBC Act, is an impact which is important, notable, or of consequence, having regard to its context or intensity. Significant impact guidelines assist in the determination of whether an action is likely to be significant for a protected matter. A requirement of the Airports Act and the EPBC Act is that Perth Airport must seek approval for a significant impact on any protected matter via the Airports Act through the major development plan process.

2.4.2.1 Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy

The EPBC Act Environmental Offset Policy (2012) provides guidance on the role of offsets in environmental impact assessments, and how the Commonwealth Department of the Environment and Energy considers the suitability of proposed offsets. The Policy recognises that there are different ways to achieve good environmental outcomes and seeks to provide flexibility in delivering these. The policy aims to improve environmental outcomes through the consistent application of best practice offset principles, providing more certainty and transparency, and encouraging advanced planning of offsets.

In recognition of the critical role played by Perth Airport in the economic development and employment framework for Perth and Western Australia, the Master Plan 2020 incorporates application of the Environmental Offsets Policy to enable suitable environmental offsets to be determined and applied (both onsite and offsite), recognising the strategic use of the land within the airport estate to support the growing demand for airport services.

2.4.3 Aboriginal and Torres Strait Islander Heritage Protection Act 1984

Australia's State and Territory Governments are generally responsible for the recognition and protection of Australia's Indigenous heritage places. All states and territories have laws that protect various types of Indigenous heritage.

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* enables the Commonwealth to respond to requests to protect important Indigenous areas and objects that are under threat if it appears that state or territory laws have not provided effective protection.

There are no nationally protected heritage sites on Perth Airport.

2.4.4 Native Title Act 1993

The *Native Title Act 1993* recognises and protects native title rights and interests. Native Title refers to the communal, group or individual rights and interests of Aboriginal and or Torres Strait Islanders in relation to land or waters.

In the case of Perth Airport, native title is extinguished by the issue of Crown leases.

2.4.5 Civil Aviation Act 1988

The *Civil Aviation Act 1988* establishes a regulatory framework for maintaining, enhancing and promoting the safety of civil aviation, including the design and operations of Perth Airport.

Australia's CASA is responsible under the Civil Aviation Act for developing and disseminating appropriate aviation safety standards. Perth Airport, as the airport operator licenced by CASA, is responsible for the safety of the aerodrome in accordance with the Civil Aviation Safety Regulations 1998 (CASR) Part 139 – Aerodromes. These regulations are supported by a Manual of Standards Part 139 – Aerodromes (MOS 139), which prescribes the technical standards for aerodromes used for air transport operations.

2.4.6 Airspace Act 2007

Changes to airspace architecture require an airspace change approval under the *Airspace Act 2007* and Airspace Regulations 2007.

The CASA's Office of Airspace Regulation will consider safety implications, environmental considerations, consultation, government policy, and the promotion and fostering of civil aviation.

2.4.7 Aviation Transport Security Act 2004

The security of Perth Airport is managed in accordance with the *Aviation Transport Security Act 2004* and Aviation Transport Security Regulations 2005. As a security-controlled airport, Perth Airport is required to implement and manage a Transport Security Program (TSP) which is designed to meet aviation security obligations and safeguard against unlawful interference with aviation. The TSP also defines the airside and landside boundary, known as the Airside Security Zone.

2.4.8 Regulations

The Regulations that are relevant to Perth Airport planning and development include:

- Airports Regulations 1997, which provides land use, planning and building controls for federally leased airports,
- Airports (Building Control) Regulations 1996, which establishes a system for approving appropriate building activities on the airport site,
- Airports (Control of On-Airport Activities) Regulations 1997, which details requirements for the control of liquor, commercial trading, gambling, smoking, and landside and airside vehicle control,
- Airports (Environment Protection) Regulations 1997, which details the process for environmental impact assessment, management, pollution prevention, and reporting, and
- Airports (Protection of Airspace) Regulations 1996, which provides for the planning, protection and management of Prescribed Airspace.

2.5 State Policy and Regulatory Framework

Perth Airport is located on Commonwealth land and State legislation will generally only apply for activities for where Commonwealth legislation does not exist. State legislation that is applicable to Perth Airport includes the Western Australian *Aboriginal Heritage Act 1972* (AH Act), the *Bush Fires Act 1954* and *Dampier to Bunbury Pipeline Act 1997* (DBP Act).

While State planning laws do not apply to the Perth Airport lease area, the Airports Act and subsidiary regulations require that a

master plan, where possible, describes 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 2020 has considered State planning requirements and has used zones and land use descriptions derived from the surrounding Local Government planning frameworks. State Government planning is controlled by the Western Australian Planning Commission (WAPC) which administers the State Planning Framework and the Metropolitan Region Scheme (MRS) and disseminates policies and strategies on a wide range of planning matters. The planning policies and strategies developed by the WAPC set the strategic context in which the MRS operates.

The land use plan presented in Section 3 takes into account, and is consistent with, the State Planning Framework which identifies Perth Airport as a 'Specialised Centre', as described in Section 2.5.8.

The specific commercial and industrial developments envisaged at Perth Airport complement the existing and future land uses in the areas surrounding the estate and are consistent with the respective surrounding Local Government land use zones. Development at Perth Airport also assists by increasing employment generating land uses and by achieving the activity centre objectives of the State Government.

2.5.1 Aboriginal Heritage Act 1972

The AH Act provides for the preservation, on behalf of the community, of places and objects customarily used by the original inhabitants of Australia or their descendants. In the absence of any prescriptive Commonwealth legislation, the AH Act bears relevance to Perth Airport, particularly where the State Department of Planning, Lands and Heritage site register indicates the presence of sites.

2.5.2 Bush Fires Act 1954

The *Bush Fires Act 1954* (WA) establishes the requirements for the preparedness, prevention and management of bush fires within the State. Relevant to the Perth Airport estate are the provisions for establishing firebreaks, activity and equipment restrictions during fire bans, and burning on Commonwealth lands.

2.5.3 Dampier to Bunbury Pipeline Act 1997

The DBP Act is administered by the State Department of Treasury, under the portfolio of the State Minister for Energy. The Dampier to Bunbury Natural Gas Pipeline (DBNGP) corridor is an area of land that houses the DBNGP, and sections of other high-pressure gas pipelines where they connect into the DBNGP.

The DBNGP corridor is approximately 1,600 kilometres long extending from the town of Dampier through to the City of Bunbury and traverses the Perth Airport estate along the length of the eastern boundary adjacent to the freight rail and Abernethy Road.

The DBNGP corridor is managed under the DBP Act, which establishes the management framework and ownership of the pipeline, as well as establishing the land within the DBNGP corridor and restrictions on its use. The land within the corridor is not to be used for any purpose without the approval in writing of the DBNGP Land Access Minister (appointed under the DBP Act).

2.5.4 State Aviation Strategy

The first State Aviation Strategy was published in February 2015. This Strategy was prepared by the State Department of Transport in conjunction with key State Government agencies covering economic development, planning, tourism, Local Government and regional development.

The State Aviation Strategy is aimed at “supporting the economic and social development of the State through the provision of safe, affordable, efficient and effective aviation services and infrastructure” and “provides a sound framework for policy setting, future planning and investment in Western Australia’s international and domestic air services and airport infrastructure”. It proposes actions that the State will take to work in partnership with airports, regional shire councils, airline partners, and the resources and energy sectors to ensure adequate services continue to meet the needs of Western Australia.

The Strategy also acknowledged the need for the new runway at Perth Airport, stating that the new runway will “provide the step-change in capacity needed to cope with current peak hour demand as well as accommodate continuing high levels of growth at Perth Airport”, and “will benefit all users, improving reliability, reducing delays and permitting peak-period demand growth across interstate and international sectors, as well as resource and other intrastate users”.

In addition, the State Aviation Strategy recognises that a Perth airport curfew would reduce aircraft utilisation in Australia by preventing them from flying overnight on the long-haul routes across Australia to and from Perth, in turn reducing aircraft efficiency, increasing costs and adding to airfares. This would substantially reduce the frequency of air services to and from Perth, both domestic and international, causing severe consequences for the Western Australian economy.

In April 2018, the State Government announced it would be reviewing the strategy. The updated strategy is expected to be released in 2020.

2.5.5 Perth and Peel @ 3.5 million

In March 2018, the State Government released the Perth and Peel @ 3.5 million suite of land use planning and infrastructure frameworks to accommodate 3.5 million people by 2050. The Central, North-West and South Metropolitan Peel sub-regional planning frameworks provide guidance on future land to accommodate new homes and jobs and making the best use of existing and proposed infrastructure.

Perth Airport is referenced in the Central, North East, North West and South Metropolitan Peel Sub-regional Planning Framework, which designate the estate as a ‘specialised activity centre’ in line with other State policies.

Perth Airport is also referenced as a key employment node important to the diversification of the economy, particularly within the central sub region where Perth Airport is the focus of employment and is a major contributor to productivity, and facilitator of business clustering and agglomeration. Jobs growth at Perth Airport as outlined in this document is predicated in part, on the development of non-aviation land uses, including within the Airport North and Airport West precincts. Perth Airport has the capacity to provide land for this development in a central location. The opportunity for employees to live in close proximity to their place of employment is considered to be a future benefit which will grow over time.

Perth and Peel @ 3.5 Million includes the long-term planning for transport infrastructure for the Perth metropolitan region. The Plan provides a framework to develop an efficient transport network to cater for Perth’s population as it approaches 3.5 million and beyond.

Whilst Perth Airport provided a submission on the draft report, there is limited reference to the significance of Perth Airport as a major generator of people, freight movements and employment, particularly with regard to considering future passenger and freight growth, and the development of employment nodes in and around Perth.

2.5.6 State Planning Strategy 2050

The State Planning Strategy 2050, prepared by the WAPC and endorsed by the Western Australian State Cabinet, was launched in June 2014. The Strategy provides the strategic guidance for land-use planning within Western Australia until 2050, as well as the vision and principles for coordinated and sustainable development. While it does not provide a specific land use plan for the Perth metropolitan region, the Strategy does identify the need to provide efficient transport routes and hubs.

It also recognises Perth Airport as a key element in the movement network of the State, and as the international gateway to Perth and Western Australia, and a focal point for the growth of the tourism industry.

2.5.7 State Planning Policy 2.8 – Bushland Policy for the Perth Metropolitan Region

State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region (2010) aims to provide a policy and implementation framework that ensures bushland protection and management issues in the Perth metropolitan region are appropriately addressed and integrated with broader land use planning and decision making. The Policy identifies measures that apply to proposals or decisions on State land that are likely to have an adverse impact on regionally significant bushland within a Bush Forever site, as identified in the policy and the MRS.

Bush Forever sites located on State or local reserved or managed land have specific measures detailed within the policy.

SPP 2.8 identifies Bush Forever sites on the Perth Airport estate. This State policy does not directly relate to the activities on the estate, and the Department of Planning, Lands and Heritage (DPLH) has recently proposed to remove significant portions of Bush Forever from the estate.

2.5.8 State Planning Policy 4.2 – Activity Centres for Perth and Peel

The State Planning Policy 4.2 Activity Centres for Perth and Peel considers the planning and development of ‘activity centres’ throughout the Perth and Peel metropolitan region. It details the distribution, function, broad land use and urban design criteria of activity centres, and the coordination of land use and infrastructure planning.

Other purposes of the Policy include:

- the integration of activity centres with public transport,
- ensuring activity centres contain a range of activities to promote community benefits through infrastructure,
- efficiency and economic benefits of business clusters, and
- lower transport energy use and associated carbon emissions.

The Policy also reflects WAPC's intention to encourage and consolidate residential and commercial development in activity centres, so that they contribute to a balanced network. Under the policy, Perth Airport is identified as a 'Specialised Centre', with primary functions of aviation and logistics services.

These 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.

2.5.9 State Planning Policy 5.1 – Land Use Planning in the Vicinity of Perth Airport

State Planning Policy 5.1 Land Use Planning in the Vicinity of Perth Airport applies to land in proximity to Perth Airport which is, or may be in the future, affected by aircraft noise, and states:

Perth Airport is fundamental to the continued development of the Perth metropolitan region and the State as a whole. Investment in airport infrastructure and the economic opportunities associated with the operation of the airport are now recognised as important and perhaps critical elements in the prosperity of a city such as Perth. Accordingly, the airport and its ongoing development need to be recognised in the planning of the region, and its operation protected, as far as practicable, from development that could potentially prejudice its performance. One of the main issues to be addressed in the planning of areas in the vicinity of the airport is aircraft noise, which is the focus of this policy.

The role of this Policy is to provide guidance to Local Governments in the vicinity of Perth Airport and the WAPC when considering developments on land adjacent to, or affected by, the airport. In practice, the Policy requires relevant Local Government authorities to give due consideration to Perth Airport's Australian Noise Exposure Forecast (ANEF) contours in local planning decision making.

The intent of this is to ensure that Policy measures (such as zoning, residential density, subdivisions, development, notification on titles, and advice) are appropriately applied to applications for development, to avoid potential land-use planning conflicts, which may subsequently impact and restrict airport operations.

Under the Airports Act, Perth Airport is required to produce an ANEF for technical endorsement by Airservices Australia. The ANEF is incorporated in each airport master plan which is reviewed every five years. Consideration of aircraft noise exposure in line with the endorsed ANEF is beneficial. However, the effectiveness of the policy to protect the community is dependent on both the continuity of its application, and further work in collaboration with the WAPC to strengthen policy measures. Perth Airport will continue to work with the WAPC to protect the community from exposure to aircraft noise.

2.5.10 State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning

State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning (2019) identifies the primary freight roads and rail routes within the Perth metropolitan area, with the objective to protect these key corridors from future urban expansion. The Policy recognises the hierarchy and jurisdiction of freight roads into and around Perth Airport, and delineates both Tonkin Highway and Great Eastern Highway as Primary Freight Routes and Kewdale Road/Horrie Miller Drive as a future Primary Freight route. Noting the strategic location Perth Airport has in relation to these freight routes, the implementation of SPP 5.4 requirements in planning decisions made off the estate carry importance for the future of the airport.

2.5.11 Swan Urban Growth Corridor Sub-Regional Structure Plan

The Swan Urban Growth Corridor Sub-Regional Structure Plan (2009) has been prepared by the State DPLH as a strategic document to ensure orderly planning and development of land and infrastructure consistently across the study area.

The Plan is based on the outcomes sought by Directions 2031. It sets employment and housing targets for the Swan region, investigates opportunities for the delivery of the targets, and sets strategic priorities for the long-term development of the sub-region.

The current projections estimate a future population of 33,000 with approximately 12,500 residential lots being developed over the next 25 years. The sub-regional structure plan provides a set of principles to guide future development in the corridor in a coordinated manner, commensurate with the needs of the community.

It considers factors such as economic development, road networks, transit stations, community facilities, district open space, urban densities, activity corridors and neighbourhood centres.

2.5.12 Metropolitan Region Scheme

The Metropolitan Region Scheme (MRS) is prepared and administered by the WAPC as the principal planning scheme for the Perth metropolitan region. The MRS considers generalised broad-scale land uses and sets out regional reservations.

Most of the airport estate is reserved for 'Public Purposes: Commonwealth Government' and a small portion (18.14 hectares) is zoned 'Urban' under the MRS. The land zoned 'Urban' is an anomaly, and Perth Airport is working with the WAPC to pursue rezoning to be consistent with the remainder of the estate. Although the land zoned 'Urban' under the MRS has a different classification than the land reserved for 'Public Purposes', its use and intent is consistent with that of the reserve. The MRS does not place any limitations on permissible land uses for reserved land and this anomaly does not have any real impact on planning or development on the estate. The airport estate in the context of the MRS is shown in Figure 2-1.

Metropolitan Region Scheme

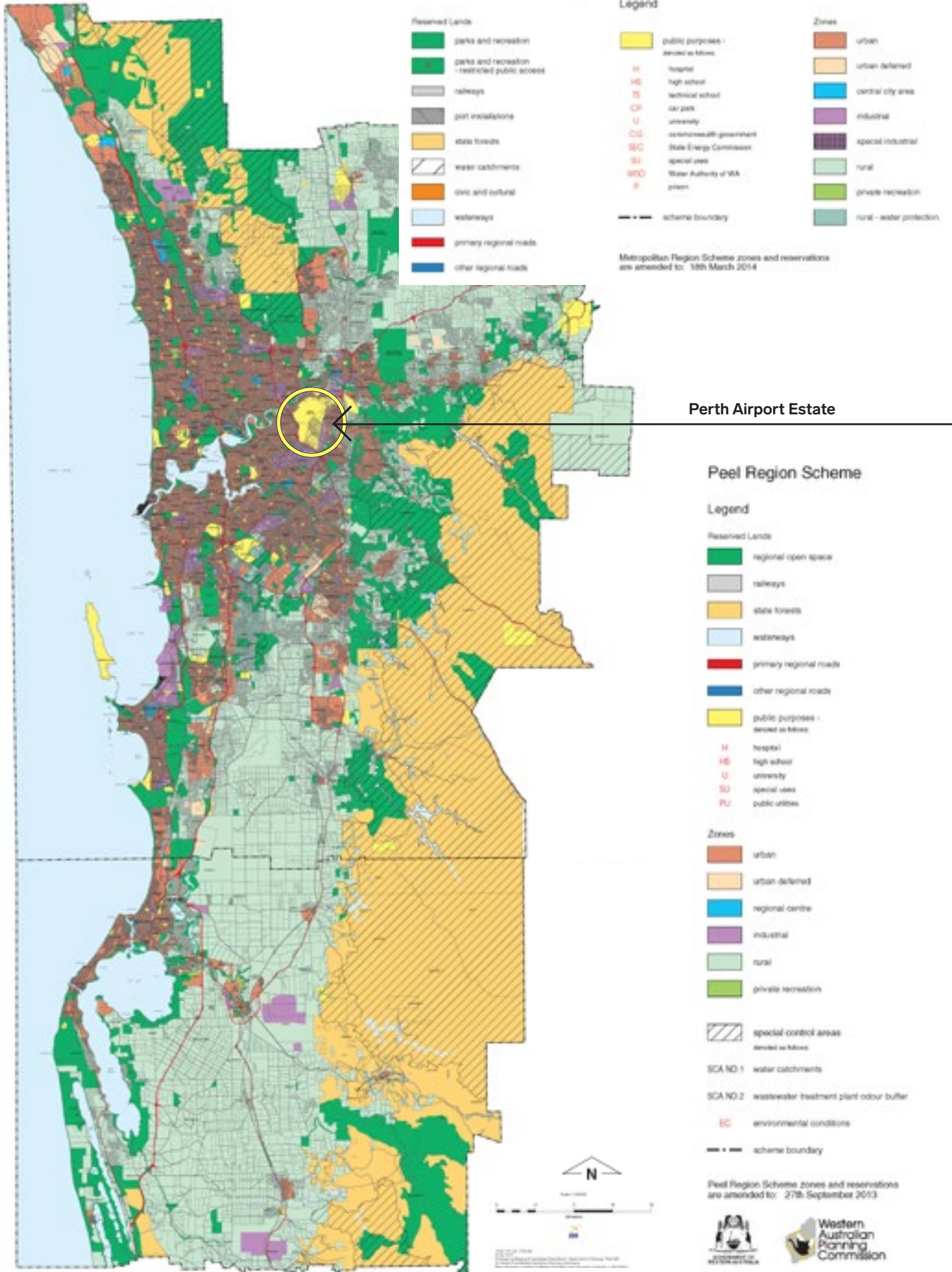
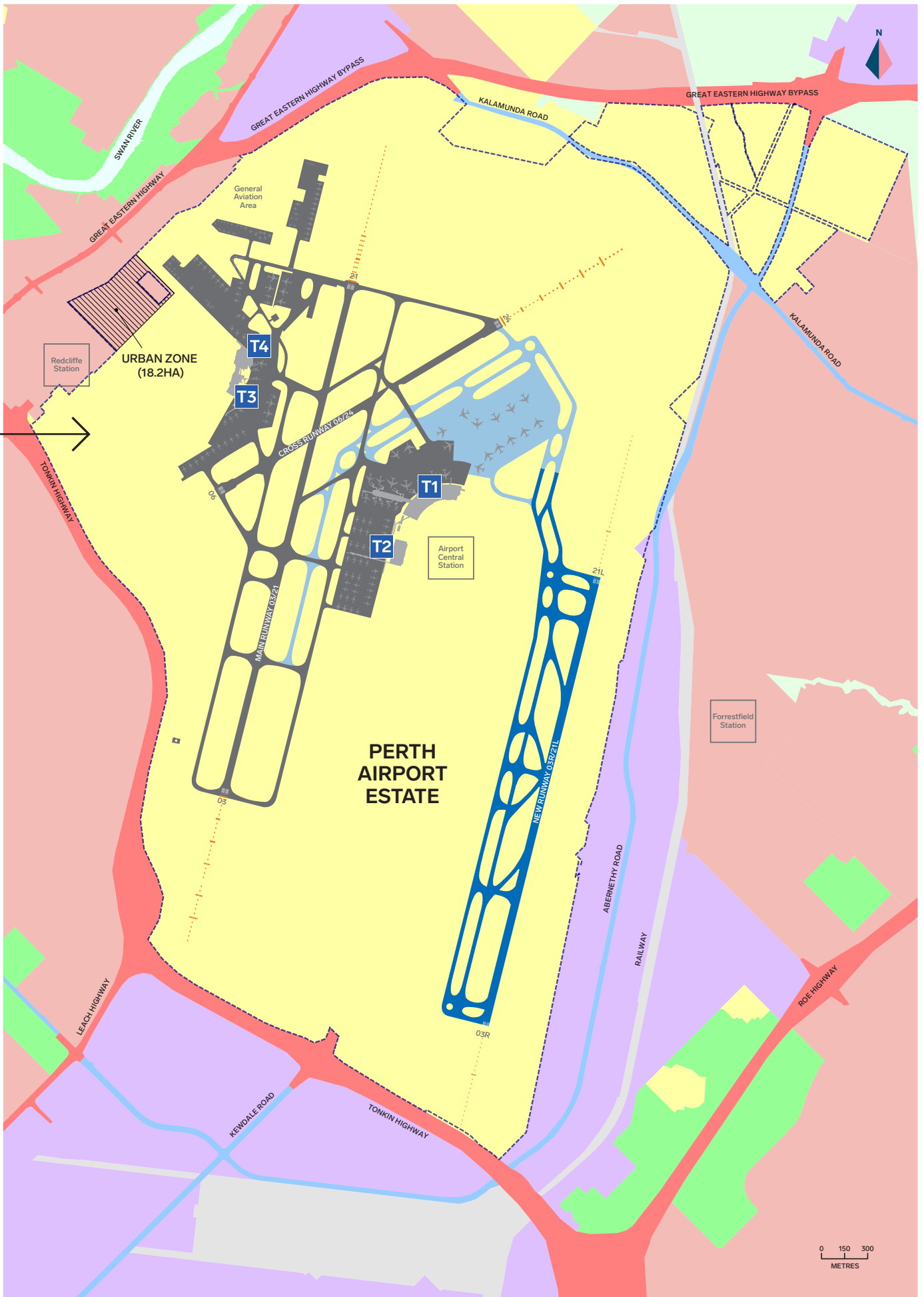


Figure 2-1 Perth Airport in the context of the Metropolitan Region Scheme
Source: Perth Airport



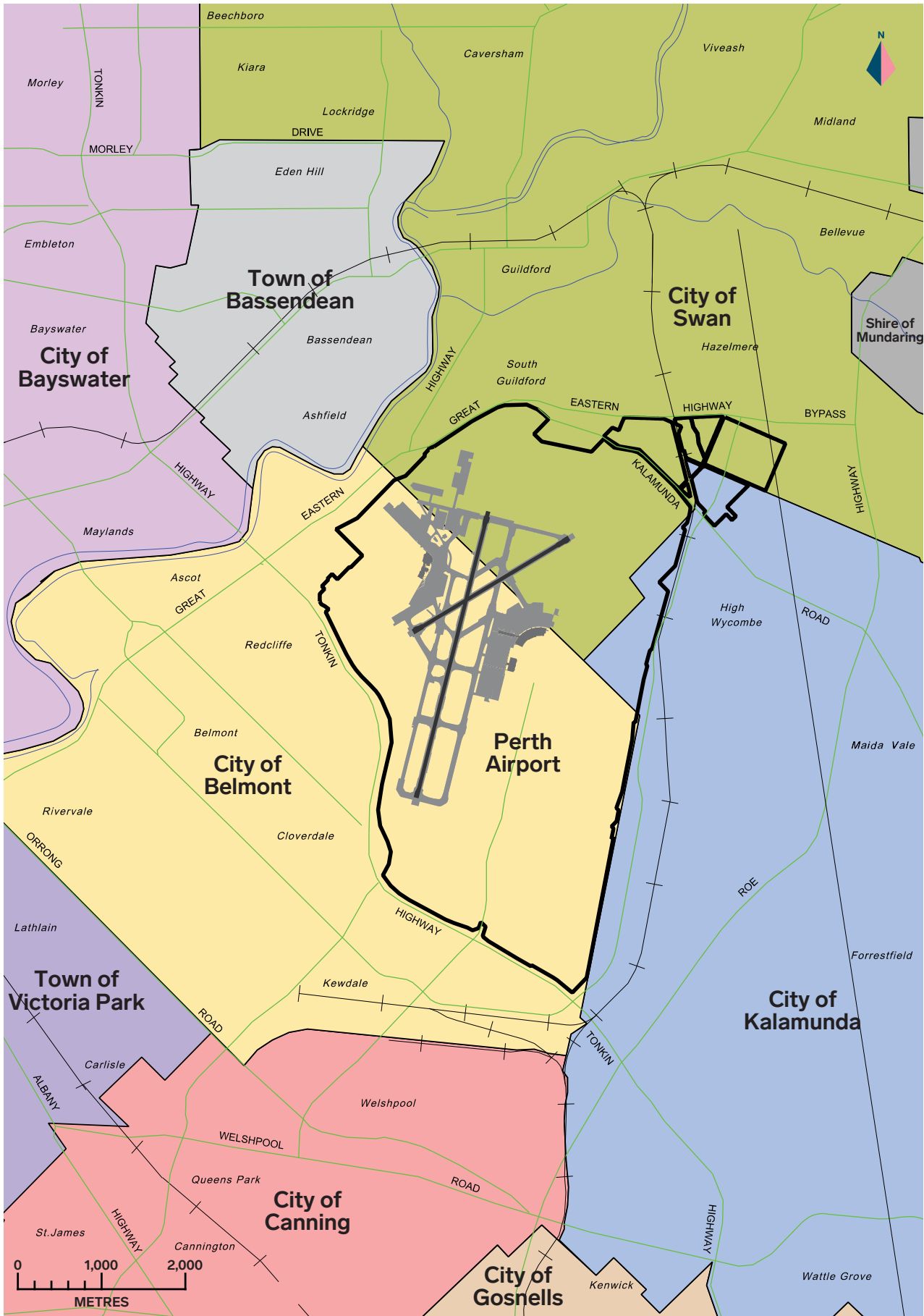


Figure 2-2 Perth Airport in the context of Local Government boundaries
 Source: Department of Local Government

2.6 Local Government

Local Governments are responsible for planning their local communities by ensuring appropriate planning controls exist for land use and development. Local planning schemes and strategies are prepared by each individual Local Government area to:

- set out the manner in which land is to be used and developed,
- classify and determine the acceptability of various land uses, and
- establish the provisions for the coordination of infrastructure and development within the Local Government area.

The Perth Airport estate boundary is adjacent to three Local Government authority areas, divided between the City of Belmont, City of Swan and the City of Kalamunda. Furthermore, Perth Airport operations impact Local Government planning within a much wider catchment of the Perth metropolitan area – largely due to the central location of the estate, only 12 kilometres from the Perth CBD, and strategic location within the metropolitan arterial road network.

The airport estate in the context of the Local Government boundaries is shown Figure 2-2. The local planning schemes of Local Governments must be consistent with the MRS and State planning policies.

To provide compatible land uses and develop appropriate surface access arrangements, Perth Airport ensures that planning for the airport estate has due regard to the planning frameworks of adjoining local authorities. To achieve this outcome, Perth Airport works with the neighbouring Local Governments through the Perth Airport Planning Coordination Forum (see Section 10). Perth Airport also investigates, where practical, initiatives such as joint visioning and development concept projects for areas on the boundary of the airport estate which share common features such as communities of interest, environment or transport networks.

2.6.1 City of Belmont Local Planning Scheme No. 15

The City of Belmont Local Planning Scheme No. 15 (LPS 15) provides for 'Industrial' and 'Residential' zones adjacent to the estate, including the major Kewdale industrial area and the residential suburbs of Cloverdale and Redcliffe. Under LPS 15, approximately 33 per cent of the City of Belmont is reserved for 'Public Purposes', which predominantly covers the airport estate, 22 per cent is zoned 'Residential' and seven per cent zoned 'Industrial'. LPS 15 incorporates provisions relating to land located within the ANEF to ensure referral of development proposals to Perth Airport in line with State policy, and to ensure the planning and design of new developments within the City considers, amongst other things, aircraft noise exposure and protected airspace.

Since the early 1990s, substantial redevelopment of residential land within the City has occurred, as older housing stock has been replaced at increased densities. There are further residential infill opportunities in the area of Rivervale known as 'The Springs' and also within Development Area 6 (an area of Redcliffe immediately to the west of the airport estate). Local Planning Policy No. 14 Development Area 6 Vision (LPP 14) was adopted by Council on the 23 February 2016, following the finalisation of the Forrestfield-Airport Link rail route, which will incorporate a train station in Redcliffe (to be named Redcliffe Station).

The location of the proposed Redcliffe Station is also within Development Area 6, which will leverage off the area's location to the future Redcliffe train station to create opportunities for medium to high density residential infill and commercial development in line with a Transit Oriented Development.

The Kewdale Industrial Area is strategically located around major freight rail and highway networks. State Planning policy has recognised the importance of the area as a transport and logistics hub. Under LPS 15, the City of Belmont has the capacity to approve a wide range of industrial activities within this zone, ranging from heavy to light industrial and commercial. Current land uses include the BP Fuel Storage facility, the Kewdale Freight Terminal (which accesses the heavy freight rail and other logistics, freight forwarding and manufacturing uses). It is expected that the importance of this industrial area will further develop over time given its strategic location. The City of Belmont is also serviced by Belmont Forum, being a Secondary Centre in SPP 4.2.

The City of Belmont, along with the cities of Canning, Kalamunda and Swan, have formed the Inland Port Member Council (IPMC), a regional body representing Local Government in the freight, transport and logistics sector. The IPMC aims to, through collaboration, facilitate the efficient movement of goods for the State.

2.6.2 City of Swan Local Planning Scheme No. 17

The City of Swan Local Planning Scheme No. 17 (LPS 17) provides for 'Industrial', 'Residential' and 'Rural' areas immediately adjacent to the airport estate. The majority of the City of Swan is a mix of 'Residential', 'Commercial', 'Industrial' and 'Rural' zoned land, across an area that is the second-largest municipality in Western Australia.

The City is serviced by the Midland City Centre, which is classified as a Strategic Metropolitan Centre under the provisions of SPP 4.2 Activity Centres for Perth and Peel. Planning within the City of Swan will consider, amongst other things, the future infrastructure upgrades to link the Midland town centre to the airport. The intent of the centre is to cater for substantial future population growth in line with State strategies such as Directions 2031, and Perth and Peel @ 3.5 million. The City of Swan has prepared the Midland Activity Centre Structure Plan to guide the development of the centre to support high density residential and mixed land uses. The Structure Plan considers height limitations for development in line with protected airspace and provides for assessment of possible noise attenuation measures where development is proposed within the 20 ANEF contour and above.

The primary residential growth area in the City of Swan is within the 1,100-hectare Urban Growth Corridor Local Area, which extends north from the Midland City Centre through to the northern boundary of the area of interest. The Urban Growth Corridor includes the suburbs of Brabham and Dayton, and parts of the suburbs of Caversham, West Swan, Whiteman and Bennett Springs. Strategic plans for Brabham include the development of a large neighbourhood centre, and the placement of residential development in this locality was undertaken in accordance with State Policy.

LPS 17 incorporates provisions relating to land located within the ANEF to ensure referrals to Perth Airport occur in-line with State policy, and to ensure the planning and design of new developments within the City considers, amongst other things, aircraft noise exposure and Perth Airport's airspace.

The residential suburb of South Guildford and historic Guildford Town Centre are located immediately to the north of the airport estate, separated by Kalamunda Road, the Great Eastern Highway Bypass and the Midland freight rail.

The Hazelmere Industrial area is located immediately north east of the estate. Its location provides access to air and rail freight transport as well as ready access to major road transport routes including the Tonkin, Roe, Reid, Great Northern, and Great Eastern Highways.

The Hazelmere Enterprise Area Structure Plan (HEASP) has been prepared on behalf of the City of Swan and the DPLH. It provides a structural framework to guide future planning and decision making that optimises the development of Hazelmere in a sustainable way. This includes appropriate responses to the sensitive environmental features, necessary servicing and infrastructure to support industrial development, and surrounding residential areas. The north-east corner of the estate falls within the HEASP area and is complementary to the land uses identified in the HEASP.

2.6.3 City of Kalamunda Local Planning Scheme No. 3

The City of Kalamunda Local Planning Scheme No. 3 (LPS 3) provides for 'Industrial' and 'Residential' areas immediately adjacent to the airport estate. The wider local authority comprises rural residential, general rural and incorporates significant reserves for State Forest and Parks and Recreation to the eastern extent of the area of interest.

The Local Government area is serviced by the Kalamunda City Centre and Forrestfield District Centre, both classified as 'District Centres' under the provisions of SPP 4.2, comprising scope for some multiple dwellings and higher urban densities. Existing residential areas in High Wycombe, immediately to the east and north east of the estate, have been developed over the past 30 years despite knowledge of the intention to proceed with the development of the new runway as outlined in Perth Airport master plans since the mid 1980's.

The Forrestfield-Airport Link project includes the construction of a rail station in Forrestfield (to be named Forrestfield Station), located within the City of Kalamunda. The City of Kalamunda has prepared and adopted the Forrestfield North District Structure Plan to guide the development of a new activity centre and a commercially focused Transit Oriented Development precinct based around the future train station. In June 2019 the Metropolitan Redevelopment Authority (MRA) announced the Forrestfield station precinct will be brought into a redevelopment area known as the METRONET East Redevelopment Area, which will capitalise on transport infrastructure and focus on maximising development opportunities to provide housing and jobs. Building on the work already undertaken, the MRA will be working with key stakeholders to inform and finalise the planning framework for the area.

The LPS 3 has considered the placement of residential development outside of the ANEF 20 and above contours in accordance with the provisions of SPP 5.1. Perth Airport is actively involved in technical working groups for Forrestfield North, to ensure the project is consistent with airport operations.

The WAPC's North-East Subregional Planning Framework (March 2018) has earmarked the areas of Wattle Grove and Maida Vale for future urban expansion. The draft plan states: *The spatial plan addresses the need to: avoid land use conflicts by taking into account buffer requirements such as those required for industry, airports and wastewater treatment plants.*

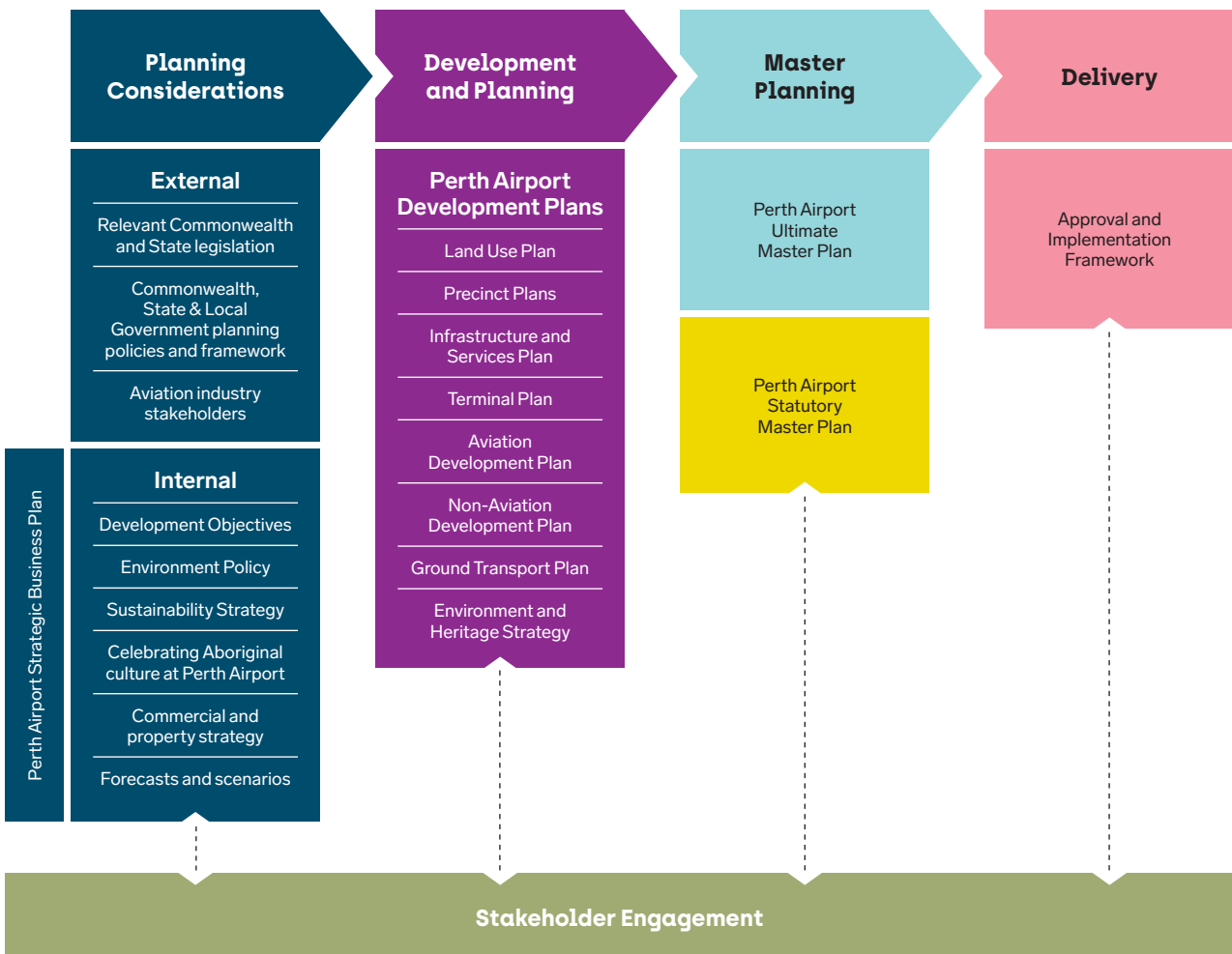


Figure 2-3 Perth Airport Integrated Planning Framework
Source: Perth Airport

2.7 Perth Airport Integrated Planning Framework

Perth Airport devotes significant resources to planning and has developed an Integrated Planning Framework that ensures the interrelationships between the various inputs are properly defined, assessed and incorporated into future strategic planning and development. Figure 2-3 provides a general description of Perth Airport's Integrated Planning Framework.

2.7.1 Perth Airport Development Objectives

Developments at Perth Airport are guided by a set of development objectives which evolve from the company's vision and corporate objectives.

Perth Airport's vision is to be:

Australia's Western Hub – connecting lives, businesses and communities to a world full of possibilities.

The objectives that guide Perth Airport's development are:

- develop a consolidated central terminal precinct maximising efficiency for airline partners and passengers and supporting the State and Commonwealth Government's significant investment in road and rail connections within the central precinct,
- deliver aviation services that are guided by airline partners, business enterprises and customer needs and expectations, striking a balance between amenity, cost, value and return on investment,
- ensure all facilities are safe and secure for all people who use them or live in the vicinity of the airport,
- bring land not required for long-term aviation services into productive use to support economic development and create employment in Western Australia,
- ensure the airport's development and operations respect the strong bond that exists between the Noongar people and the land that comprises the Perth Airport estate,
- ensure that the airport's development and operations minimise adverse impact on surrounding communities and the environment,
- ensure that Perth Airport achieves an adequate and sustained return on investment to support continuing investment in the facilities, and
- ensure the ongoing integrity of critical infrastructure that may be impacted by airport development.

2.7.2 Planning Approach

This Master Plan 2020 retains the fundamental concepts of all previously approved master plans, from the first Perth Airport Master Plan 1985, published by the then Commonwealth Department of Aviation, which identified a future centralised terminal precinct supported by a parallel runway system.

The consistency in planning that has been maintained can be seen in the progression of master plans from 1985 to 2014 as shown in Figure 2-4 to Figure 2-8.

In preparing this Master Plan 2020, Perth Airport has reviewed previous studies and reassessed the location and spatial requirements for land use developments to cater for aviation needs over the 20-year planning period. The long-term planning requirements beyond the 20-year planning period have also been considered. The key consideration of the reviews was to ensure that future development planning adequately accommodated aviation growth forecasts, including aviation support facilities, safeguarding for ground transport requirements, and integration with Local Government planning schemes, while managing environmental impacts.

Developments within the non-aviation precincts will consider Local Government planning strategies and seek to complement development adjacent to the estate. State and Local planning outcomes which facilitate the economic development and enhancement of the key corridors connecting Perth Airport to the Perth CBD, and to other key metropolitan regional centres, are supported.

While these developments occur outside of the airport estate and control, they formalise and support the role and function of Perth Airport as an integrated and essential economic element of the Perth metropolitan system.

Perth Airport reviews have also focused on ensuring that the integration of both aviation developments and the development of commercial precincts on the airport estate provide a safe and efficient airport environment. The planning also considered pre-existing interests on the airport estate, including easements. These reviews were undertaken in consultation with the Commonwealth and State Government departments and agencies, Local Governments, industry partners and other external stakeholders.

Further detail is provided in this Master Plan regarding what is expected to occur in the first five-year period for non-aviation development and ground transportation (refer Sections 5 and 6 respectively). It is essential that land is safeguarded for the ultimate airfield configuration of the airport, even though some of the components of these developments are not planned to occur within the next 20-year period.

Long-term concepts are also included for aviation developments. This information is provided as an indicative concept, as the actual growth in traffic demand and commercial needs of Perth Airport's customers will influence the actual timing of these developments.

The Environment Strategy (Section 9) outlines potential environmental impacts of development and operation at the airport and sets strategies and management in relation to these impacts. It details strategies Perth Airport will adopt in the upcoming five-year period to achieve continuous improvement in environmental management. Previous environment strategies were reviewed, areas requiring further analysis were identified, and the future of the airport estate was considered in the context of growth forecasts, and environmental values and processes.

The delivery and implementation of this Master Plan 2020 forms a critical part of the Perth Airport operations and decision-making processes. Annual-based estimates of timing for works can be inaccurate and misleading, given the volatility of forecasting and the process of determining commercial arrangements for new works. While broad figures such as the annual passenger movements have a role in planning and defining triggers for development, it is acknowledged that more specific metrics should be adopted for each element of the aviation-related function. These triggers are identified in Section 2.8.



Figure 2-4 Perth Airport Layout Master Plan 1985
 Source: Perth Airport Master Plan 1985, Department of Aviation

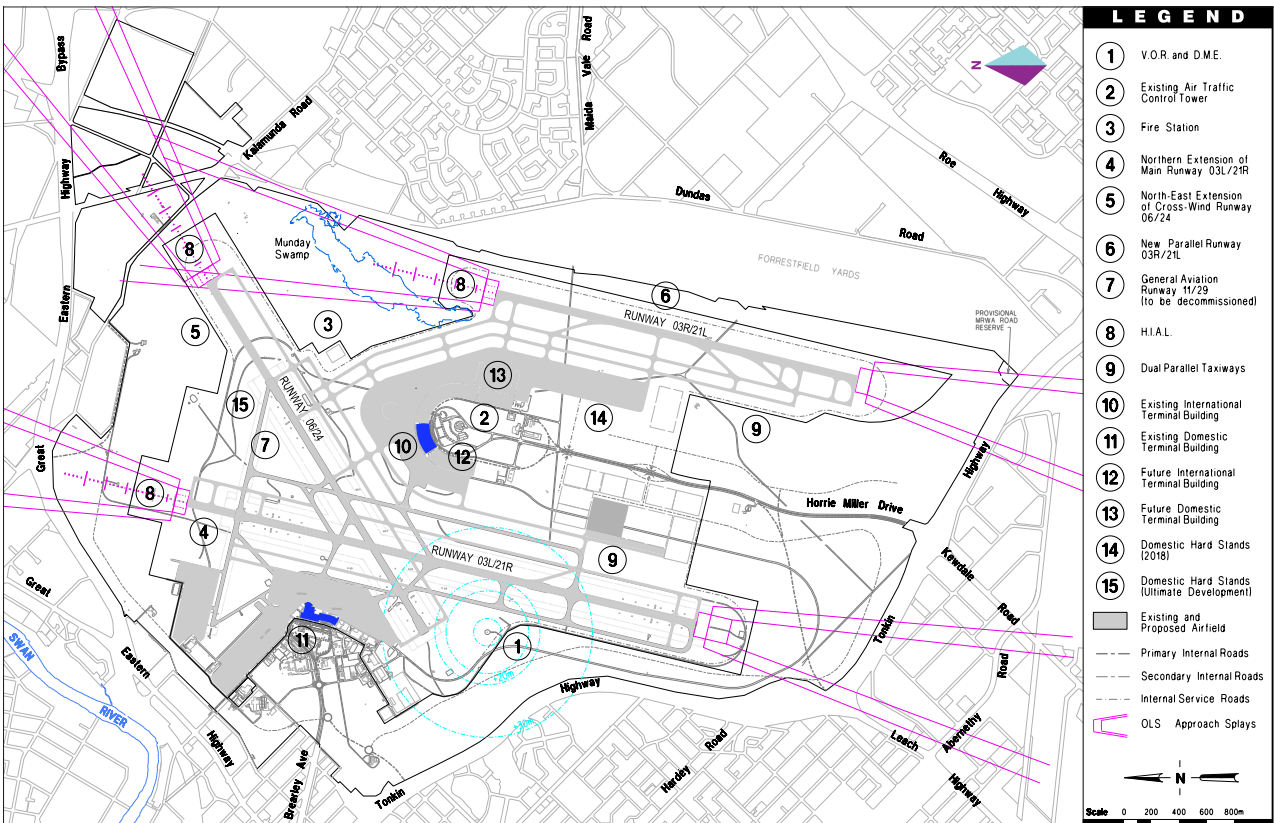


Figure 2-5 Perth Airport Airfield Layout Master Plan 1999
 Source: Perth Airport Master Plan 1999

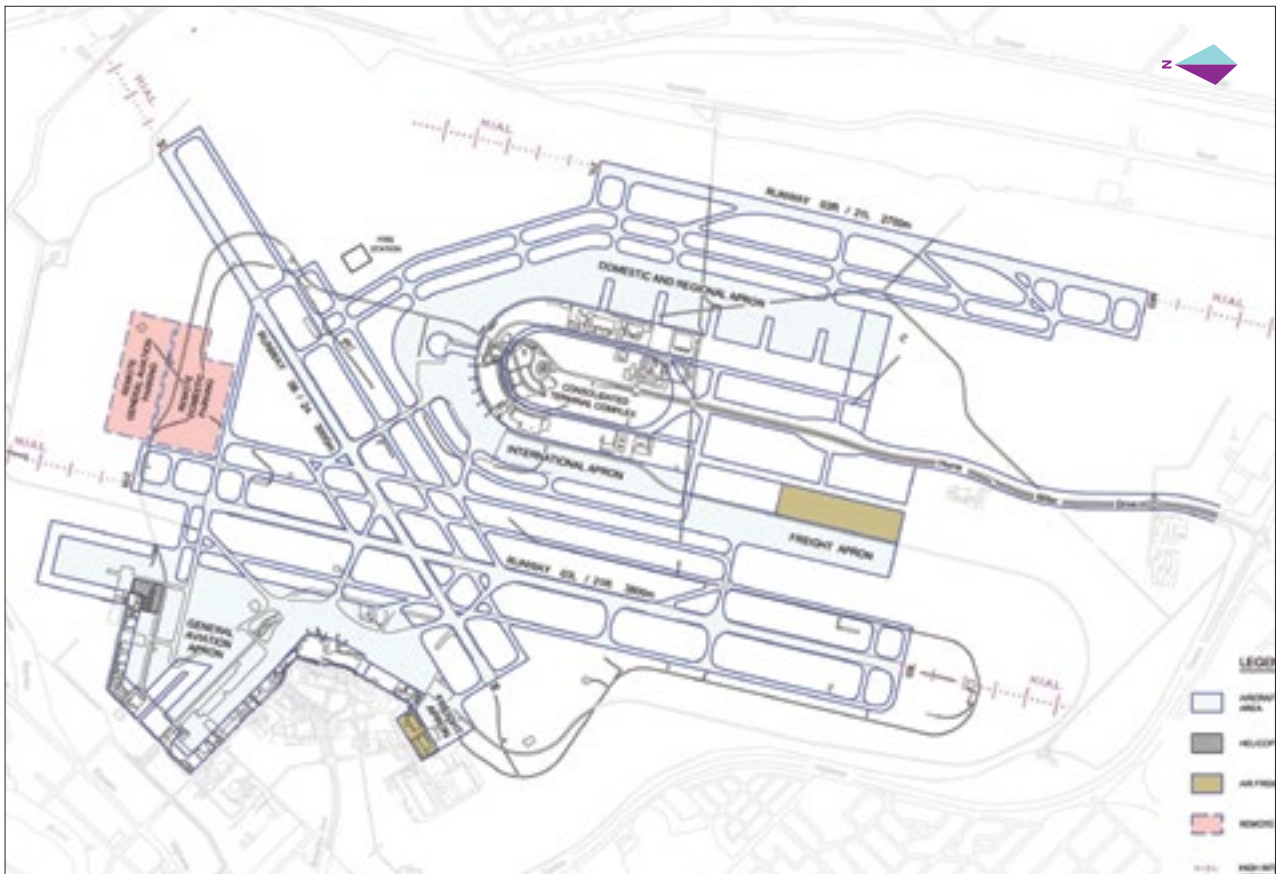


Figure 2-6 Perth Airport Airfield Layout Master Plan 2004
 Source: Perth Airport Master Plan 2004

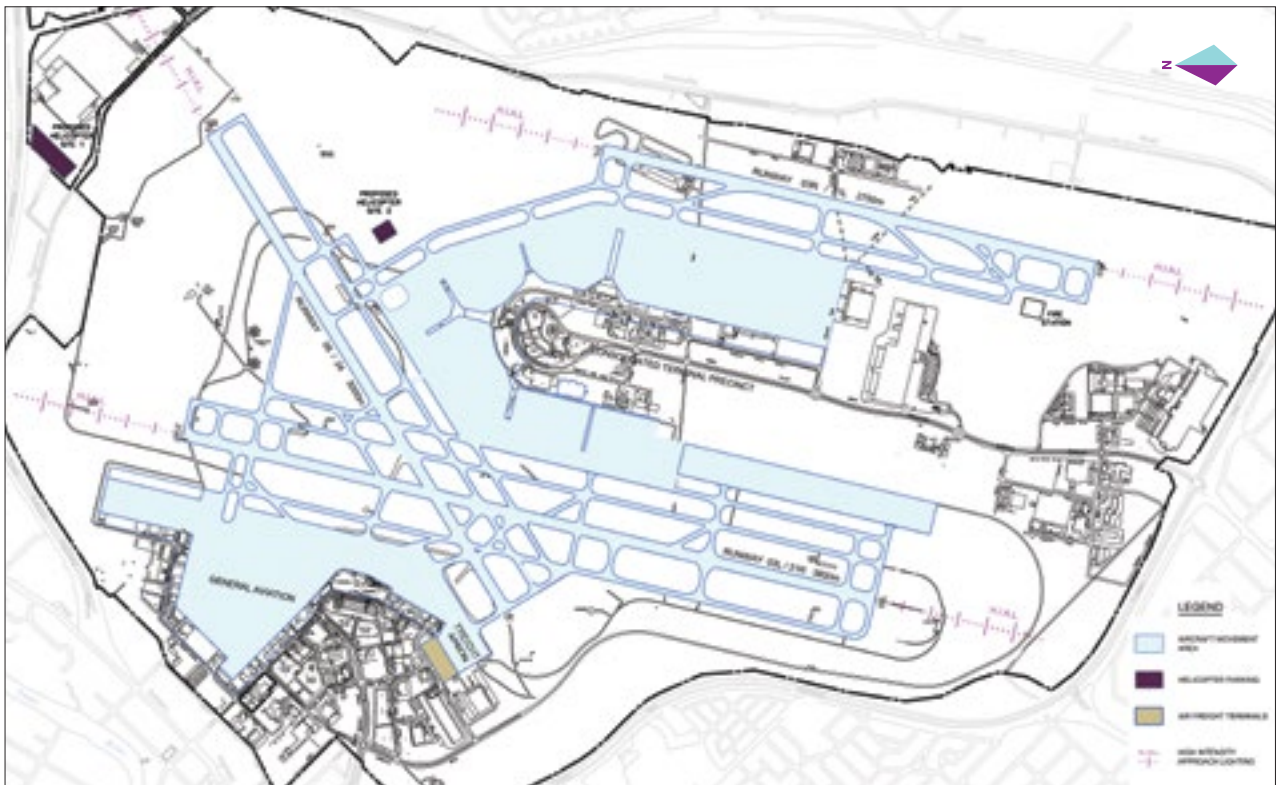


Figure 2-7 Perth Airport Airfield Layout Master Plan 2009
 Source: Perth Airport Master Plan 2009



Figure 2-8 Perth Airport Airfield Layout Master Plan 2014 Minor Variation
 Source: Perth Airport Master Plan 2014 Minor Variation

2.8 Planning Criteria

This Master Plan 2020 is underpinned by a number of key planning criteria relevant to land use planning, infrastructure development and airport operations.

The development triggers that guide the timing of Perth Airport's developments are summarised in Table 2-1.

Component Development Triggers

Runways	<ul style="list-style-type: none"> • Peak period aircraft movement demand for arrivals, departures or a mix of arrivals and departures (increase in runway capacity required) • Forecast annual aircraft movements • Improve holding and taxiing delays, reduce fuel burn and emissions • Maintain and improve on time performance • Introduction of new aircraft types
Taxiways	<ul style="list-style-type: none"> • Reduce taxiing delays, fuel burn and emissions • Reduce runway occupancy times (ROT) • Introduction of new aircraft types • New terminals • Link in with new runway infrastructure • Improved safety
Apron	<ul style="list-style-type: none"> • Busy hour demand • New terminals • Improved customer experience • New aircraft, larger aircraft size • Overnight parking demands • Improved safety
Terminals	<ul style="list-style-type: none"> • Busy hour demand • New terminals • Improved customer experience • Reduce processing delays (such as improving security screening processing times) • New legislation (such as new security screening measures) • Improved safety
Roads	<ul style="list-style-type: none"> • Improved customer experience • Improved safety • Reduced delays and congestion • React to a change in mode share • Connect to new external road access points • New terminals • New commercial developments

Table 2-1 Overview of development triggers that guide the timing of Perth Airport developments

Source: Perth Airport

2.8.1 Runway, Taxiway and Aprons

Perth Airport, as the airport operator, is responsible for the safety of the aerodrome in accordance with CASR Part 139 – Aerodromes. These regulations are supported by a Manual of Standards Part 139 – Aerodromes (MOS 139), which prescribes the technical standards for aerodromes used in air transport operations.

The specifications contained in MOS 139 are largely the same as the International Civil Aviation Organization (ICAO) standards, noting that there are some differences. The ICAO and MOS adopt a code system, known as the 'aerodrome reference code'.

The code comprises of a code number and a code letter. The code number is based on the aircraft reference field length and the code letter is based on the aircraft wingspan and the outer main gear wheel span. The reference code provides a method of grouping aircraft with different characteristics which behave similarly when landing, taking off, taxiing and parking. The planning of runways, aprons and taxiways is largely based on the aerodrome reference code.

The reference code then corresponds to a critical aircraft which is the most demanding aircraft type for the airport's infrastructure. For Perth Airport this is a Code 4F aircraft which represents an Airbus A380. Infrastructure such as apron and aircraft parking positions also consider the most common aircraft that use the facilities, and then balance the need for the infrastructure and costs to meet the needs of a range of aircraft types.

2.8.2 Terminals

The International Air Transport Association (IATA) publishes the Airport Development Reference Manual (ADRM) as a guide for planning new or extending existing airport facilities. The ADRM is an important source of best industry practice with regard to the planning and design of airports. It is used by Perth Airport, in conjunction with numerous other planning tools and techniques, including simulation, customer surveys, industry benchmarking and extensive stakeholder consultation, to inform the design of the passenger terminal buildings. Design standards and levels of service are fundamental components of terminal planning.

The size of a terminal building, including the number of aircraft gates, is based on the forecast number of passengers, aircraft movements and visitors during the 'design busy hour', and takes into account the desired level of service required to be provided by the infrastructure.

The 'design busy hour' passenger forecasts represent demand that is unconstrained by infrastructure restrictions, however airlines have a material influence on the level of service parameters upon which airport infrastructure is planned and designed, which are based on value judgements about the standard that is acceptable for passengers. Airline partners generally require Perth Airport to adopt the IATA Optimum Level of Service standard in the targeted design year when designing terminal infrastructure.

The Optimum Level of Service is defined in the IATA Airport Development Reference Manual as providing 'a good level of service; conditions of stable flow, acceptable delays and good levels of comfort'. The Optimum Level of Service is recommended as the minimum design objective by IATA as it denotes good service at reasonable cost and is the standard typically adopted by most airports. Acquiring an optimum design level of service avoids over design and under-design, and balances economic terminal dimensions with passenger expectations.

The actual level of service experienced by a passenger in a terminal may differ from the design level of service modelled through the planning and design stages and is heavily influenced by factors such as resource allocation on the day, wayfinding and legibility of the passenger journey and technology. Given the importance of customer experience to the aviation business, Perth Airport has a dedicated customer experience team to ensure a customer-centric focus is imbedded across all business activities.

Data from the Airports Council International's Airports Service Quality (ASQ) Monitoring Program is one source used to drive and prioritise improvements to facilities, with the survey undertaken quarterly at Perth Airport. The ASQ focuses on seven key areas which define the passenger experience through Perth Airport's managed terminals. These are:

- access to and from the airport,
- check-in,
- passport control,
- security screening,
- wayfinding,
- airport facilities, and
- the airport environment.

This information allows Perth Airport to establish the highest priority areas for the improvement of the customer experience and focus resources and initiatives appropriately. Since 2014, ASQ scores have increased year on year, following a number of investments specifically targeted at enhancing the passenger journey at every touchpoint.

Perth Airport continues its significant investment in a redevelopment program that is changing the customer experience at the airport, inside and out. During 2017-18, over 4.3 million international passengers were processed arriving and departing Perth Airport, and that figure is projected to increase in 2018-19. The Australian Competition and Consumer Commission (ACCC) rated Perth Airport in the top spot for overall service quality in its last two Airport Monitoring Reports. The ACCC also noted that Perth Airport's significant improvement in quality of service ratings over the last three years has coincided with a substantial investment program. The independently compiled Airport Service Quality ratings, which are based on customer surveys, also shows that Perth Airport is a consistent leader amongst its benchmark group of major Australian and New Zealand airports.

2.8.3 Ground Transport

Ground transport infrastructure planning is informed by simulation modelling and considers the daily passenger profiles, peak traffic on the external road networks and surveyed transport mode splits. These inputs are tested against the peak hourly volumes of the annual tenth-busiest day. The design and construction of on-airport estate roads meet appropriate Australian standards.

2.8.4 Environmental Management

Environmental management and sustainability at Perth Airport are guided by a vision to operate and grow in a manner that minimises environmental impacts and considers sustainable solutions for the development and operation of the airport estate.

This is achieved through integrated planning, developing solutions, management techniques, engaging staff, contractors, tenants and the wider community in the operation and growth of the airport. Perth Airport also participates in independent, third-party benchmarking and accreditation programs, such as the Airport Carbon Accreditation initiative from the Airports

Council International (Europe), and annually assesses its sustainability performance against the international GRESB benchmark for real assets.

Perth Airport incorporates sustainability principles into planning and development in several ways, including:

- the integration of environment and sustainability into planning processes to enable early identification of opportunities and constraints,
- the consideration of building management, vegetation retention, canopy provision, and resource conservation opportunities during the planning and design phases of development,
- ongoing review and assessment of compliance of environmental outcomes, and
- inclusion, where applicable, of independent sustainability performance rating systems for design, construction and operation of infrastructure.

2.9 Development Considerations

The planning and development of Perth Airport is underpinned by a number of development considerations which influence the infrastructure that is built and when it is delivered.

Development considerations include forecasts of passenger and aircraft movements annually and, in peak periods, air freight volumes and the level of service expected by different airlines.

2.9.1 Recent Performance

The Perth aviation market is comprised of international, interstate and intrastate sectors, with each sector being influenced by different factors. When combined, interstate and intrastate are referred to as domestic passengers.

Over the past decade, Perth aviation markets have experienced periods of high growth as well as periods of contraction. The historical trends in aircraft movements can be summarised as follows:

- Western Australia experienced a resource construction boom from 2007 until its peak in 2014, which contributed to significant aircraft movement and passenger growth at Perth Airport. During this period, Perth Airport was the fastest growing airport in Australia with an average annual passenger movement growth rate of 7.5 per cent, nearly twice as much as the next fastest growing airport (Brisbane). At the peak, airlines and passengers experienced significant delays, which had flow on impacts to the many industries and the wider Western Australian economy.
- Domestic and general aviation movements at Perth Airport have declined since 2013, mostly associated with a slowing of the economy and the Western Australian resource sector. However, this is a normalising of demand when considered in the context of the significant growth experienced between 2003 and 2015 when the Western Australian resource sector was in a strong construction phase.
- International aircraft movements have shown relatively strong and stable growth. While there was a decline in 2015 and 2016 as a result of airlines using larger aircraft, movement numbers began to grow again in 2017 and 2018.

Total passengers travelling through Perth Airport surged from 6.7 million passengers in 2005 to 14.9 million passengers in 2014. Since the peak in 2014, there has been a slowing in passenger numbers driven by a reduction in intrastate and interstate traffic with 2018 having 14.3 million total passengers. Figure 2-9 shows the passenger movements at Perth Airport between 2005 to 2018.

Note: General Aviation passenger numbers were not recorded until 2012 and are not shown below for the years 2005 to 2011. As a result of adding General Aviation passengers, the actual passenger number for FY13 is greater than that reported in the 2014 Master Plan.

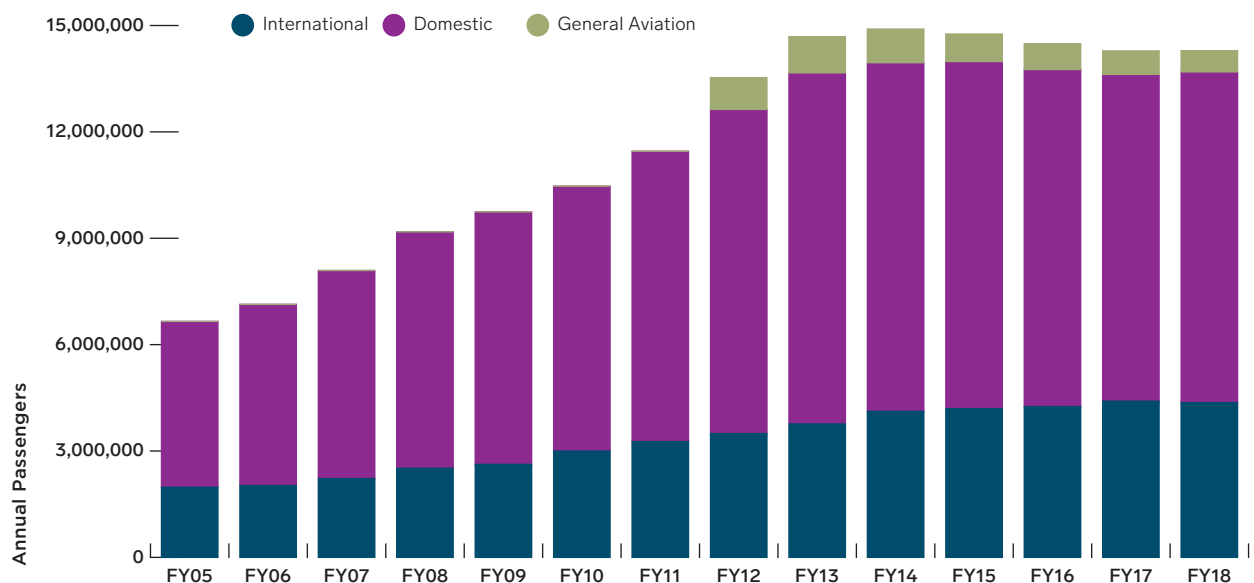


Figure 2-9 Perth Airport Annual international and domestic passenger numbers

Source: Perth Airport

Domestic passenger numbers increased from 4.7 million in 2005 to 9.3 million in 2018, representing an average annual increase of nearly 6.5 per cent. The strong growth from 2005 to 2013 reflects the recovery from the Ansett collapse (in 2001), the growth of low-cost carriers such as Virgin Australia and Jetstar, the strong economy and significant resource sector investments. The softening of the domestic market since 2014 reflects the end of the resource investment boom and the easing of commodity prices.

Figure 2-10 shows the share of intrastate passengers as a proportion of total domestic passengers. The share of intrastate passengers increased dramatically between 2005 and 2013 before moderating somewhat. Intrastate traffic is influenced by major resource projects, with project sites serviced by either RPT airline services or general aviation charters. Intrastate traffic saw a peak in 2013 of just under five million passengers. Since this time many mines have completed construction and moved into operational mode. This, combined with increasing automation of mining equipment, has seen a decrease in the number of staff required on site.

International passengers have typically represented a third of total passengers through Perth Airport. In 2005, there were 2 million passengers, increasing to 4.4 million in 2018. International passengers at Perth Airport have grown at an average annual rate of 6.4 per cent over the past ten years.

Figure 2-11 shows a comparison of international and domestic passenger growth year on year. International passenger numbers have experienced positive levels of growth up until 2018, which was affected by Perth Airport’s largest passenger route, Perth to Bali, being interrupted by volcanic ash cloud events. Since this time, Perth Airport has seen a return to growth in the international passenger segment.

2.9.2 Industry Outlook

Perth Airport forecasts and industry outlooks are produced by Tourism Futures International (TFI), a research-oriented company specialising in aviation, travel and tourism forecasting. TFI expects the decline in air traffic growth to be moderated in the short term with a return to growth in the medium term due to a range of economic indicators including:

- the Australian dollar remaining around its depressed long-term average,
- domestic travel costs to increase in the short term with declines in the medium term,
- growth in international travel costs from lower or declining passenger growth,
- oil prices to increase,
- fares trending upwards in the short term with medium-term declines,
- increase in the working-age population,
- mining investment to stabilise, and
- a return to economic growth below the long-term average in the WA economy.

Whilst aviation growth prospects are positive into the medium/long term, there remain uncertainties that can stall growth. These include:

- policy challenges in China, with fiscal policy supporting growth but contributing to rising public debt. Chinese growth has a significant impact on the WA economy,
- possibility of financial market corrections, with a faster than expected tightening of global financing terms,
- possible adoption of inward-looking policies. Important long-standing commercial agreements are currently under renegotiation and there is substantial uncertainty about possible changes to UK and US trade and immigration policies,
- geopolitical tensions, notably in East Asia and the Middle East, which at the very least could dampen confidence and lead to financial market volatility, and
- in the longer term the risk of recurrent extreme climate events that impose humanitarian costs and economic losses on the affected regions.

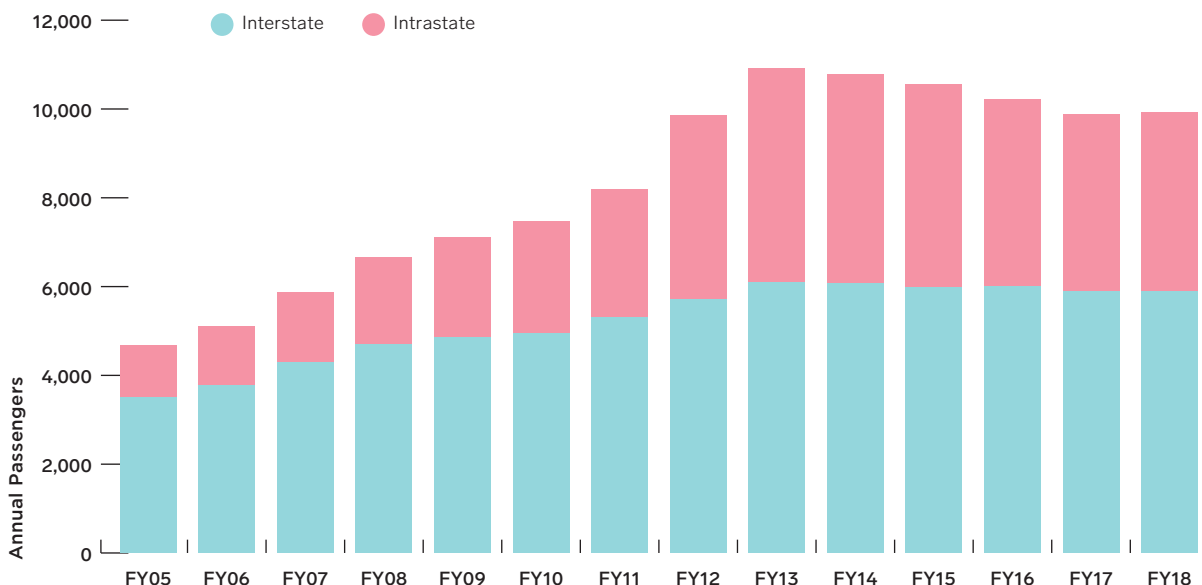


Figure 2-10 Perth Airport Intrastate vs interstate passenger numbers ('000)
Source: Perth Airport

2.10 Perth Airport Activity Forecasts

Airline passenger forecasts are not based on a single homogenous market. In preparing passenger forecasts, a segmentation approach is applied to Perth Airport's international and domestic markets to better understand and assess the significance of different drivers.

This approach allows for a clearer picture of the relative size and impact of each market segment, resulting in forecasts that are more responsive to events specific to a given market. A large number of factors influence the growth in air travel, the most significant ones being:

- gross domestic product on a national and regional level,
- disposable incomes of potential travellers (of importance is the level of income and confidence that these levels will be maintained and grow),
- the price of air transport and the ground component of travel,
- the competitiveness (quality, product attributes and price) of a destination compared to alternative destinations,
- the supply of airline services, frequency, reliability, quality of service,
- the promotion of tourism by governments, airlines and industry bodies,
- consumer tastes and available time for travel, and
- one-off factors and shocks that impact travel such as:
 - the terrorist attacks of 11 September 2001 and those in Bali in 2002 and 2005,
 - ash clouds from the eruption of Mount Agung in 2017,
 - the collapse of an airline, such as Ansett in 2001, and
 - large events such as the America's Cup and the Sydney Olympics.

2.10.1 Review of Master Plan 2014 Forecast

The forecasts presented in Master Plan 2014 were an overestimation of the passenger growth that actually occurred.

At the time it was considered that while the pace of growth in passengers would decline it would still be positive, averaging 4.5 per cent in the period 2014 to 2018. Key assumptions included:

- that the Australian economy would maintain Gross Domestic Product growth in excess of 3 per cent per annum, which was higher than actually occurred,
- belief that demand for commodities from major trading partners such as China would continue to support economic activity in Western Australia, which occurred but to a lesser degree,
- that commodity prices, while forecast to soften, would remain stronger than what actually occurred,
- overestimating the pipeline of investment within the resource sector which was greatly reduced following 2014, and
- underestimating the pace at which demand for fly-in fly-out services would drop off due to the completion of major projects.

2.10.2 Use of Forecasts in Perth Airport Planning

Passenger forecasts are combined with aircraft load factors and airline fleet-mix assumptions to develop forecasts of passenger aircraft movements. General aviation aircraft movement forecasts are based on trend analysis in the industry sectors within which these operators contract. Freight and passenger aircraft movement forecasts are combined to produce total aircraft movement forecasts.

Aircraft movement forecasts, including type and operational time of day, are also a key input into noise exposure forecasting. However, annual forecasts only give a high-level overview of projected growth patterns and do not trigger infrastructure investments. Forecast demand in peak periods, when compared to the capacity of each individual element of the airport's infrastructure (for example roads, check-in, security screening, departures lounge size, aircraft parking positions and runway capacity) informs the timing of specific developments.

The capacity of airport infrastructure needs to provide the targeted levels of efficiency and customer service in peak demand periods. Therefore, a critical element of airport planning is the combination of activity forecasts with future airline schedule assumptions to forecast peak hour demand for each element of airport infrastructure.



Figure 2-11 Perth Airport Year-on-year passenger growth comparison at Perth Airport

Source: Perth Airport

2.10.3 Forecasting Methodology

While many factors have an impact on air service demand, only some of these factors can be reliably measured and their impacts included in the forecasting models. Perth Airport forecasts are based on a number of elements, including:

- the segmentation of Perth's international and domestic markets to assess the significance of traffic drivers,
- a review of the traffic history available for Perth Airport and an assessment of statistical trends which include:
 - development of seasonal indices and time series forecasts for all items forecast. This is often found to provide a useful shorter-term view of future traffic behaviour,
 - development of a quarterly 'indicators' model that shows the movements in leading indicators relative to traffic. Indicators include stock market performance, company profits, average weekly earnings, and business and consumer confidence,
 - analysis of Perth's traffic responses to previous economic downturns and other traffic 'shocks', and
 - analysis of the general aviation and business environment and current airline schedules. This assists with developing assumptions and identifying qualitative factors that might influence traffic outcomes.
- models linking drivers and aircraft traffic:
 - macro models linking economic indicators,
 - micro models based on extensive statistical analysis and published studies which are generally based on a market and/or travel purpose (for example, European holiday) or routes,
 - final model outcomes are based on an iterative process between the modelling approaches listed above and are constantly being tested and updated, and
 - a review of official tourism forecasts in Australia and elsewhere.

In preparing passenger forecasts, Perth Airport develops scenarios for high, central and low passenger and aircraft movement growth. The low, central and high forecasts have been provided in this Master Plan 2020.

2.10.4 Passenger Forecasts

To ensure that Perth Airport can meet future demand when required, activity forecasts are prepared annually to support effective infrastructure planning and investment decision making.

Detailed analysis considers the factors that impact and / or trigger the need for infrastructure developments, in addition to preparing a new master plan every five years. These revalidation processes help to ensure (to the best of current available knowledge) that infrastructure capacity is delivered to meet demand, and that it is not delivered too early, noting that this would place unnecessary costs on the users of Perth Airport, including the travelling public.

Statistics published by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) are incorporated in the annual forecasting reviews.

Perth Airport ensures that its infrastructure planning and design emphasise modularity and flexibility to support construction of expanded capacity within shortened timeframes. Importantly, Perth Airport's infrastructure development plans are such that high activity forecasts will trigger timely development to ensure capacity exists to support continuing growth, while providing acceptable levels of service.

Based on a central growth rate scenario, annual international passengers at Perth Airport are forecast to grow from 4.37 million in 2018 to 10.20 million in 2040. In the same period, annual domestic passengers are forecast to grow from 9.92 million to 18.31 million.

Total annual passengers are forecast to grow from 14.29 million in 2018 to 28.51 million in 2040. These forecasts and the annual percentage growths are shown in Table 2-2. These numbers include general aviation and charter passengers in addition to the RPT movements, which are usually reported separately.



Financial Year	2018 (Actual)	2019	2020	2021	2022	2023	2024	2025	2030	2035	2040
International											
Passengers	4,365	4,301	4,489	4,739	4,981	5,232	5,488	5,751	7,197	8,654	10,200
Annual % change		-1.2%	4.4%	5.6%	5.1%	5.0%	4.9%	4.8%	4.4%	3.6%	3.2%
Domestic											
Interstate	5,884	5,753	5,937	6,158	6,434	6,725	7,027	7,342	8,964	10,674	12,364
Intrastate	4,038	3,707	3,595	3,562	3,647	3,751	3,857	3,969	4,611	5,294	5,946
Domestic – Total	9,923	9,460	9,532	9,720	10,081	10,476	10,884	11,311	13,575	15,968	18,310
Annual % change		-4.7%	0.8%	2.0%	3.7%	3.9%	3.9%	3.9%	3.5%	3.1%	2.5%
International and Domestic											
Total Passengers	14288	13,762	14,021	14,458	15,063	15,708	16,372	17,062	20,773	24,622	28,510
Annual % change		-3.7%	1.9%	3.1%	4.2%	4.3%	4.2%	4.2%	3.9%	3.3%	2.7%

Table 2-2 Passenger Forecasts for Perth Airport (000s Passengers) central scenario

Source: Perth Airport

A summary comparison between the low, central and high growth rate scenario forecasts is shown in Figure 2-12.

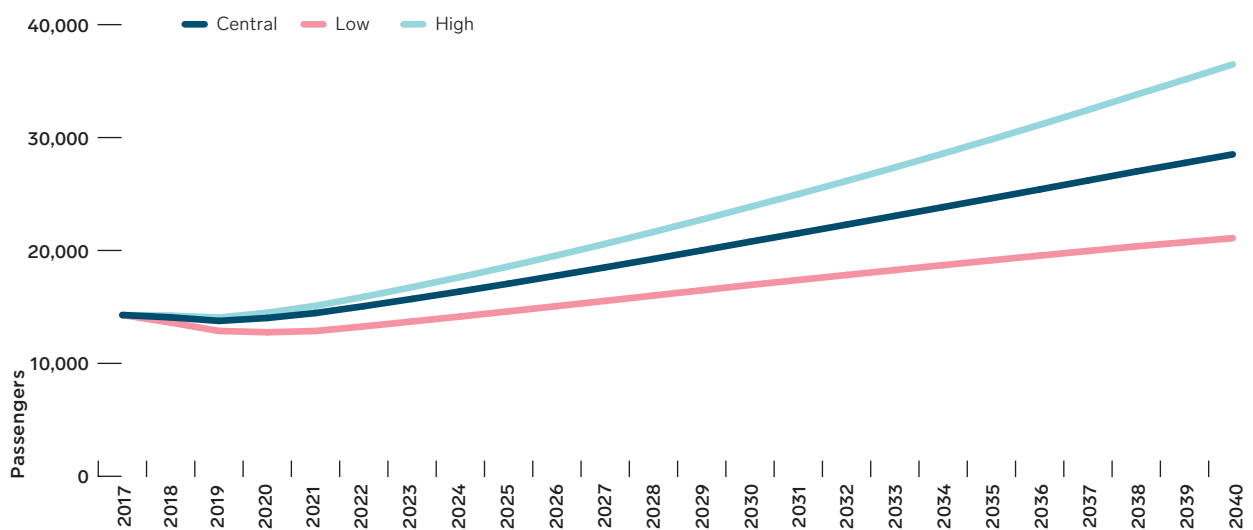


Figure 2-12 Perth Airport Total passenger forecasts comparison for Perth Airport

Source: Perth Airport

2.10.5 Aircraft Movement Growth Forecasts

Based on a central growth rate scenario, annual international aircraft movements at Perth Airport are forecast to grow from 23,400 in 2018 to 37,200 in 2040. In the same period, annual domestic aircraft movements are forecast to grow from 106,600 in 2018 to 163,000 in 2040. Total annual aircraft movements are forecast to grow from 129,900 in 2018 to 202,000 movements in 2040.

It should be noted that these numbers include general aviation and charter passengers in addition to the RPT movements, which are usually reported separately. Table 2-3 below considers general aviation and charter separately.

Financial Year	2018	2019	2020	2021	2022	2023	2024	2025	2030	2035	2040
International Movements											
Passengers	22.8	22.0	22.5	23.3	24.0	24.7	25.4	26.1	29.9	33.6	37.2
Annual % change		-3.4%	2.5%	3.5%	3.0%	3.0%	2.9%	2.8%	3.0%	2.3%	2.0%
Domestic Movements											
Passenger Aircraft	85.1	82.1	81.4	82.0	84.4	87.0	89.7	92.5	104.2	117.2	129.7
Annual % change		-3.5%	-0.8%	0.7%	2.9%	3.1%	3.1%	3.2%	2.3%	2%	2.0%
Freighters											
Movements	1.3	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.9	2.1	2.3
General aviation											
Passenger Aircraft	20.6	21.2	22.3	23.7	25.2	26.7	28.3	29.9	31.2	32.1	32.8
Total Movements											
Movements	129.9	126.7	127.7	130.5	135.1	140.0	145.0	150.2	167.1	185.1	202.0
Annual % change		-2.5%	0.8%	2.2%	3.5%	3.6%	3.6%	3.6%	2.1%	2.0%	1.8%

Table 2-3 Aircraft Movement Forecasts for Perth Airport (000s Movements)

Source: Perth Airport

The aircraft movement forecasts are based on a central growth rate scenario. A summary comparison between the low, central and high scenario forecasts is shown in Figure 2-13.

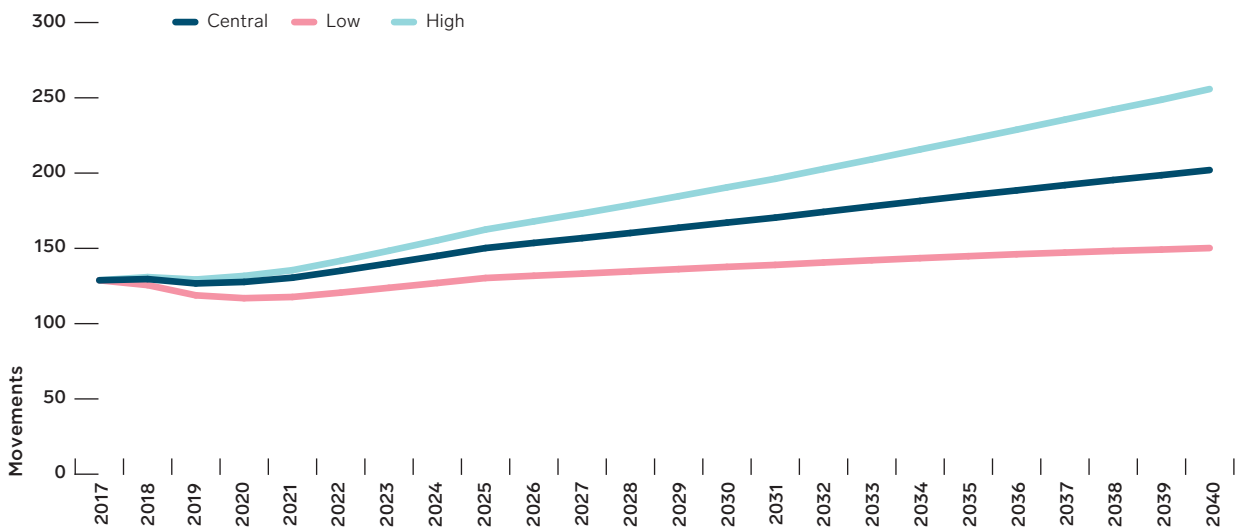


Figure 2-13 Total aircraft movement forecast comparison for Perth Airport (000s Movements)

Source: Perth Airport

2.10.6 Air Freight Growth Forecasts

Air freight provides the fastest method of transporting goods over long distances. Given Perth's distance from major trading partners and other Australian major ports, road, rail and sea are not viable options for goods which are time-critical or have a short shelf life.

Air freight serves regional and remote communities by delivering vital supplies, such as medicines and fresh foods, and is used to deliver heavy machinery and specialised equipment to remote and regional mining sites.

Perth's air freight market is primarily driven by Western Australia's resource and agri-food industries. Free trade agreements, the expanding airline route networks and the proximity of Perth to the Asian and Middle East markets have benefited the air freight market.

Major air exports are gold and gold products (which require the enhanced level of security provided by air transport), and agricultural products such as live rock lobsters, fresh meat and fresh fruit which are highly perishable and need to move from harvest to consumption within 48 hours.

Imports are typically gold and gold products, machinery and vehicle parts, and general household goods.

The majority of air freight at Perth Airport is carried in the hold of regular passenger air services and is a factor in the financial viability of scheduled air services. The rate of growth for air freight therefore has some correlation with the rate of passenger air services growth.

International Air Freight

In 2017, Perth Airport catered for nearly 109,000 tonnes of international air freight. International air freight is largely carried on passenger services, and therefore capacity is again expected to increase with growth of international passenger services.

International air freight is expected to continue to be largely transported on passenger services due to the smaller volumes of freight. Dedicated freighters operate for peaks in demand, such as Chinese New Year.



SECTION 2: PLANNING CONTEXT

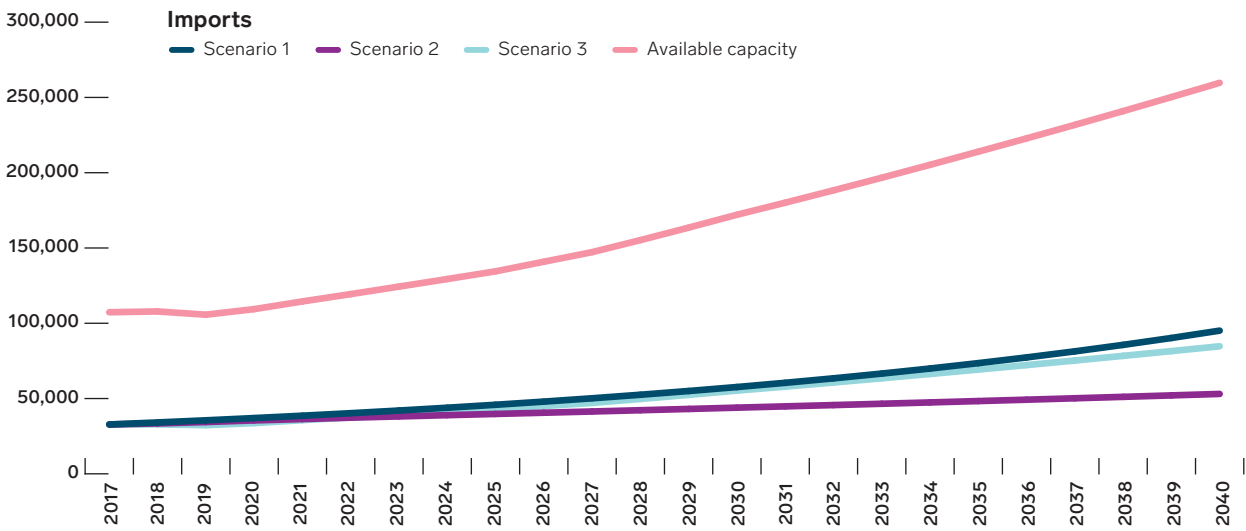
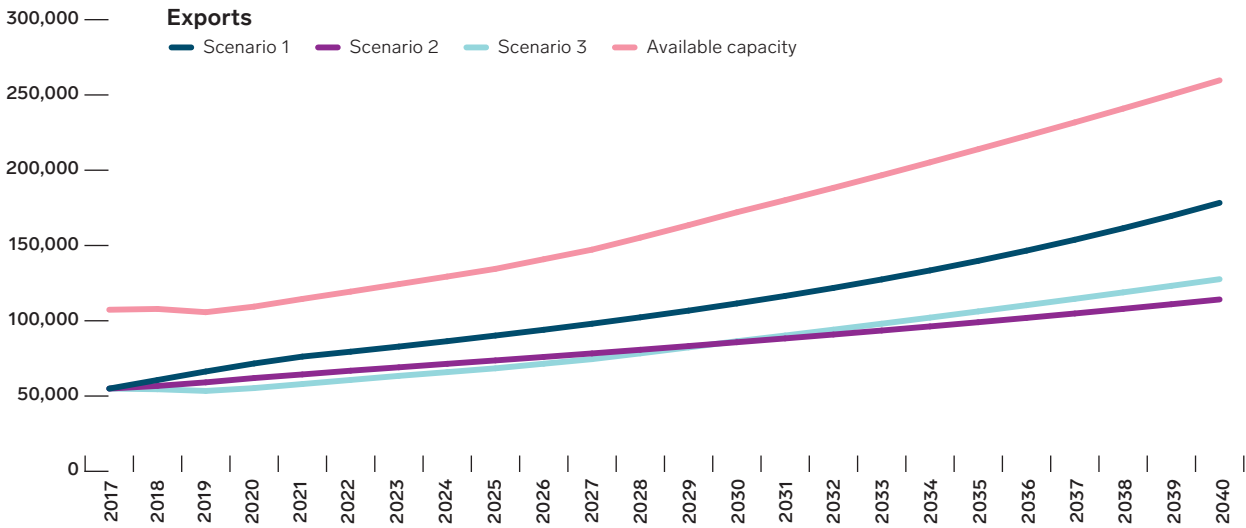


Figure 2-14 Forecast growth of international air freight 2017 to 2040

Source: PricewaterhouseCoopers

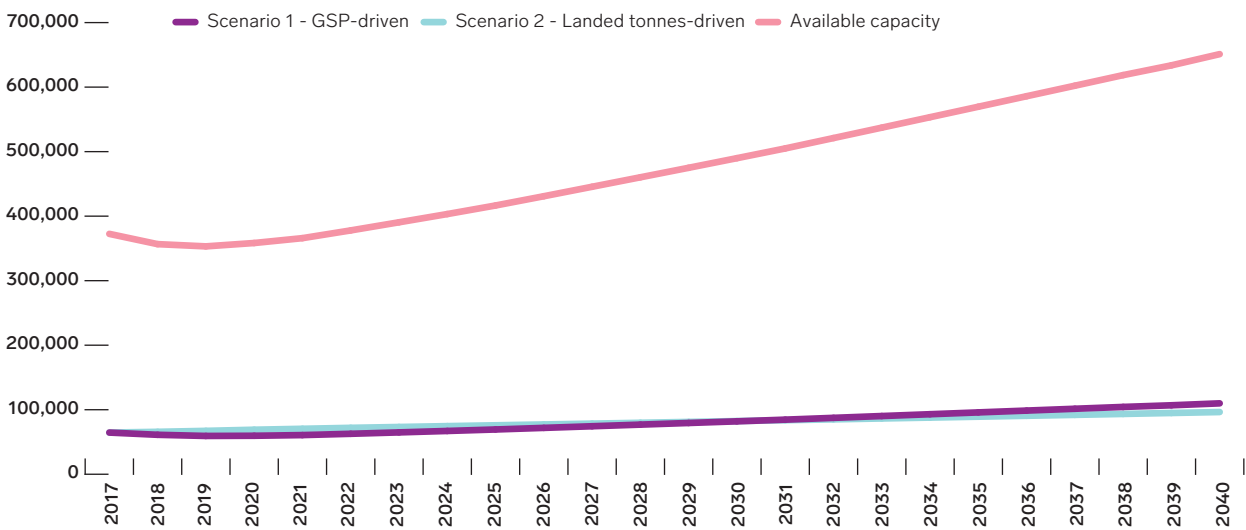


Figure 2-15 Forecast growth in domestic air freight 2017 to 2040

Source: PricewaterhouseCoopers

Forecasting identified three growth scenarios for international air freight between 2017 and 2040, as shown in Figure 2-14:

- The lower growth scenario was based on the elasticity driven model for air freight and Gross State Product (GSP). In this scenario, imports are expected to grow at 2.1 per cent and 3.2 per cent for exports, averaging growth to and from the airport at 2.8 per cent.
- The mid growth scenario assumes air freight will grow in line with new passenger services to existing major trade partners and new markets such as India. This scenario suggests imports could grow at 4.2 per cent and export growth at 3.8 per cent, with 4.0 per cent averaging growth.
- The upper growth scenario is driven by historical trends and GSP of key trade partners. In this scenario, imports are forecast to grow at 4.7 per cent with exports at 5.3 per cent averaging growth to and from the airport of 5.1 per cent. The strongest growth is expected from China and Hong Kong, which is projected to increase in market share from 17 per cent in 2017 to 35 per cent in 2040. Africa, Europe and Singapore are projected to see less growth based on recent trends. The key growth market for imports is expected to be India.

While analysis shows that there will continue to be surplus freight capacity on passenger services, some routes, such as Perth-Singapore, are likely to experience less spare freight capacity than other routes.

Domestic Air Freight

The number of dedicated air freight services is currently limited due to the existing spare cargo capacity on passenger services. Dedicated freighter aircraft predominantly operate to key domestic hubs such as Melbourne.

There is sufficient capacity for domestic air freight well into the future. In 2017, 64,000 tonnes of domestic air freight were taken as cargo on passenger services. In addition, there was 42,000 tonnes of air freight moved via dedicated freighters relating to mail and small parcel movements.

Forecasting for domestic air freight to 2040 has considered two scenarios – the first is Gross State Product driven and the second based on landed tonnes. Both models reached similar levels by the end of the forecast period, as shown in Figure 2-15.

