

# Bunbury Geographe Airport Master Plan 2020 - 2040

PREPARED FOR CITY OF BUNBURY



ACROSS  
PLANNING

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## Acknowledgement of Country

The City of Bunbury and Across Planning recognize the rich indigenous heritage of this country, acknowledge the Noongar people as the traditional custodians of this place and pay respect to elders past and present.

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## EXECUTIVE SUMMARY

Bunbury Airport located 8km south-east of Bunbury CBD is a Civil Aviation Safety Authority (CASA) registered airport owned and operated by the City of Bunbury. Its existing focus is on general aviation (including commercial and recreational), pilot training and emergency services.

It has a 1,205m single sealed runway (07/25) that is currently limited to 1,015m for landings due to proximity to the South Western Highway. There are approximately 50 aircraft hangars on site and approximately 100 permanently based aircraft. Presently there are three pilot training providers based at the airport.

Emergency service operations at Bunbury Airport include Royal Flying Doctor Service (RFDS), purpose-built 24/7 Department of Fire and Emergency Services (DFES) rescue helicopter base with permanent RAC rescue helicopter, and seasonally-based water bomber planes plus helicopters (on as-needed basis) for bushfire management.

As noted in the Regional Airport Master Planning Guidelines (Australian Airports Association, 2014), airports are essential public infrastructure assets. They can generate significant social and economic benefits to communities, but they need to be properly planned and protected over the long term to realise these benefits and ensure their safe and efficient operation.

Poor planning of airports can lead to a range of problems including operational restrictions and amenity impacts on surrounding land uses, particularly if incompatible uses are permitted to develop close to an airport precinct. Airports are capital intensive, requiring expensive infrastructure and ongoing maintenance. Accordingly, a Master Plan is central to the orderly and proper planning of any airport.

The Bunbury Airport Master Plan 2010-2015 (Lowe Churchill, 2010) remains in place pending adoption of the new Master Plan. It has also informed the Bunbury Airport Development Plan (2011) which, similarly, remains in place and should be reviewed and updated from time to time.

Although a number of the priority recommendations in the Bunbury Airport Master Plan 2010-2015 have been achieved or are in progress, the authors recognized that many recommendations and actions would extend well beyond a five-year period. For this 2020- 2040 Master Plan, the City of Bunbury is looking to a strategic plan as a basis for short, medium and long-term planning and investment.

As the capital of the South West region, Bunbury Geographe is the principal centre for business, health, education and government administration in the region and has the largest population concentration (currently 91,400). Coupled with good proximity to the rest of the region, Bunbury Airport was the chosen location for the State's first permanent rescue helicopter base outside of Perth as well as seasonal basing of a contract DBCA helicopter for controlled burn and fox baiting operations and fixed-wing water bombing aircraft.

Bunbury Airport is unlikely to become a Regular Passenger Transit (RPT) airport because of the Busselton-Margaret River Regional Airport's role, and the relatively short distance to the Perth metropolitan area that favours public transport journeys by road and rail over RPT flights.

Master planning for the Busselton-Margaret River Regional Airport and Bunbury Geographe Airport should continue to be complementary, whilst also supporting smaller airports and landing strips throughout the region.

The 2010-2015 Master Plan reported that Main Roads WA planning at that time was to retain the current alignment of the South Western Highway and concluded that eastward expansion of the Bunbury Airport was unfeasible and that it should continue to operate indefinitely with its current runway.

Although MRWA has proposed a Davenport Link connecting the South Western Highway to Willinge Drive (Port Access Road) this would require an additional bridge over the Preston River. Confirmation of the Davenport Link will require detailed modelling of traffic implications for port and city centre access and significant funding. Given such funding does not form part of the current major investment in the Bunbury Outer Ring Road,

there is no short to medium-term prospect of the Davenport Link being developed.

Consequently, realignment of the South Western Highway adjacent the airport is unlikely for the foreseeable future, meaning easterly extension of the main runway is impractical in the short to medium-term.

For reasons explained in this report, Across Planning believes the new Master Plan should provide for development of an 800m cross-runway in the short to medium-term, and for the ultimate easterly extension of the existing runway to 1530m in order to service the expected demands of Bunbury Geographe as the State's Second City region with a population of 300,000 people.

Pending a future decision on the proposed Davenport Link, retention of the South Western Highway on its current alignment precludes a cross-runway being developed eastward of the highway. However, provision has been made in the new Master Plan for a cross-runway to be built toward the western end of the existing main runway – west of the Bunbury City Kart Club on Reserve 670.

### Vision

The strategic vision for Bunbury Geographe Airport is:

**“Bunbury Geographe Airport: meeting the general aviation needs of Western Australia's Second City”**

### Objectives

The objectives for the Bunbury Geographe Airport are:

- promoting the role of Bunbury Geographe Airport and its significance as a community asset
- providing high quality aviation support to rescue, medical transfer, bushfire control and other emergency services in the South West region

- becoming a Centre of Excellence for Emergency Services Management
- meeting the growing needs of general and recreational aviation in Bunbury Geographe
- becoming the pre-eminent pilot training airport in regional WA
- complementing the South West's aviation network including the function and operations of Busselton-Margaret River Regional Airport
- minimising the potential for conflict with surrounding land uses, including avoiding encroachment of incompatible activities
- ensuring compliance with relevant regulations, standards and policies including public safety
- facilitating on-going financial viability.

The Master Plan comprises this report and maps, including 31 recommendations which should be read in conjunction with Figure 1: Master Plan 2020 - 2040. Airport development and expansion should take place over many years to meet short, medium and long-term needs.

A staging plan is included in the Master Plan, showing three indicative stages generally based on:

- consolidation and enhancement of the existing site
- development of a cross-runway and airport related industrial precinct
- ultimate extension of the existing main runway and airport expansion eastward.

## Recommendations

The following recommendations are to be read in conjunction with Figure 1: Master Plan 2020 - 2040.

**Recommendation 1:** The Bunbury Airport be re-named Bunbury Geographe Airport.

**Recommendation 2:** Every few years (or when updated data is needed), the City of Bunbury engage a suitable contractor to record the number of air traffic movements and aircraft types for a set period (three-month, six-month or 12-month period).

**Recommendation 3:** Bunbury Geographe Airport to become a 'marque' Centre of Excellence for Emergency Services Management including training and research in rural and remote fire, rescue and emergency management.

**Recommendation 4:** The City of Bunbury commission soil testing to confirm the presence or absence of pesticide contamination on Lot 14 and Lot 120 east of the South Western Highway and any necessary remedial action.

**Recommendation 5:** Detailed investigation of Aboriginal Heritage site 19795 should be undertaken in accordance with the Aboriginal Heritage Due Diligence Guidelines prior to any detailed planning or developmental works associated with the Master Plan. A Noongar Standard Heritage Agreement (NSHA) should be entered into and an 'Activity Notice' issued under the NSHA if there is a risk that an activity will impact the site.

**Recommendation 6:** The City of Bunbury endorse the plan entitled Bunbury Geographe Airport Master Plan 2020-2040 as the guide to land use and airport facilities development over the 20-year period to 2040.

**Recommendation 7:** In the long-term, plan to upgrade the main runway of Bunbury Geographe Airport to 1530m long and 23m wide with an Aerodrome Reference Code of 2B.

**Recommendation 8:** In the short to medium-term, plan for a cross-runway 800 m long and 18m wide with an Aerodrome Reference Code of 1B to provide an alternate runway, particularly when strong cross winds adversely affect the main runway.

**Recommendation 9:** Airport Development Plans implementing the Master Plan should include the progressive development of new taxiways to service the existing and upgraded runway, the future cross-runway and proposed new hangars.

**Recommendation 10:** Include an upgrade of general lighting in the Bunbury Geographe Airport Development Plan.

**Recommendation 11:** Provide for installation of a Jet A1 fuel bowser in the Bunbury Geographe Airport Development Plan (additional to the existing dedicated DBCA jet fuel facility).

**Recommendation 12:** The Master Plan and Airport Development Plans provide for additional leasehold hangar sites.

**Recommendation 13:** Set aside the area identified for Airport Related Industry to accommodate a range of light and general industry uses related to general aviation.

**Recommendation 14:** Replace the existing illuminated wind indicator with a hinged post model during the 2020-25 timeframe.

**Recommendation 15:** The Master Plan and Airport Development Plans provide for installation of a Compass Swing Bay for the purpose of checking the on-board compass systems of aircraft.

**Recommendation 16:** A future Development Plan for the Bunbury Geographe Airport allow for replacement of a weather camera by the year 2030.

**Recommendation 17:** All ambulance and other emergency services personnel operating in the Bunbury Geographe and wider region likely to require access to the RFDS patient transfer facility and airside at the airport be issued with the security access code(s).



**Recommendation 18:** The Master Plan and Airport Development Plans provide for installation of emergency access gates at Site No 9 on the Master Plan.

**Recommendation 19:** The Master Plan and Airport Development Plans provide for the planning and development of new access roads as shown in the Master Plan.

**Recommendation 20:** Additional remnant vegetation areas under City of Bunbury control be investigated as offsets for areas proposed to be cleared for airport purposes.

**Recommendation 21:** Low Fuel Vegetated Buffers be provided in the locations identified in the Master Plan, subject to confirmation by Bushfire Attack Level (BAL) assessment.

**Recommendation 22:** Investigation of future airport utility services requirements should be undertaken in association with nearby landowners.

**Recommendation 23:** New revenue sources for the Airport Reserve Fund be investigated.

**Recommendation 24:** The City of Bunbury enable the airport to function as an independent business unit including combining rates and lease fees levied at the airport and identifying these as airport income.

**Recommendation 25:** Adopt the National Airports Safeguarding Framework to avoid encroachment of uses incompatible with the airport.

**Recommendation 26:** The City of Bunbury determine revised OLS for the proposed airport expansion in order to protect the required airspace.

**Recommendation 27:** The Greater Bunbury Region Scheme (GBRS) and City of Bunbury Local Planning Scheme No 8 (LPS8) not support scheme amendments and applications for planning consent that will conflict with, and may compromise, existing and planned airport operations.

**Recommendation 28:** The Airport Operator undertake an updated ANEF assessment and mapping for the Bunbury Geographe Airport and introducing controls as discussed in the National Airports Safeguarding Framework Guidelines A: Measures for Managing Impacts of Aircraft Noise to guide land use and operational decision-making including avoiding encroachment of incompatible uses and unacceptable noise impacts on surrounding land uses.

**Recommendation 29:** The City of Bunbury review its existing Bunbury Airport Local Planning Policy to ensure consistency with, and help implement, the Master Plan.

**Recommendation 30:** Regularly consult and review the Staging Plan as the guide to progressive airport development and expansion.

**Recommendation 31:** Prepare an updated Airport Development Plan to assist with implementation of the Master Plan and to replace the Bunbury Airport Development Plan 2011-2015.

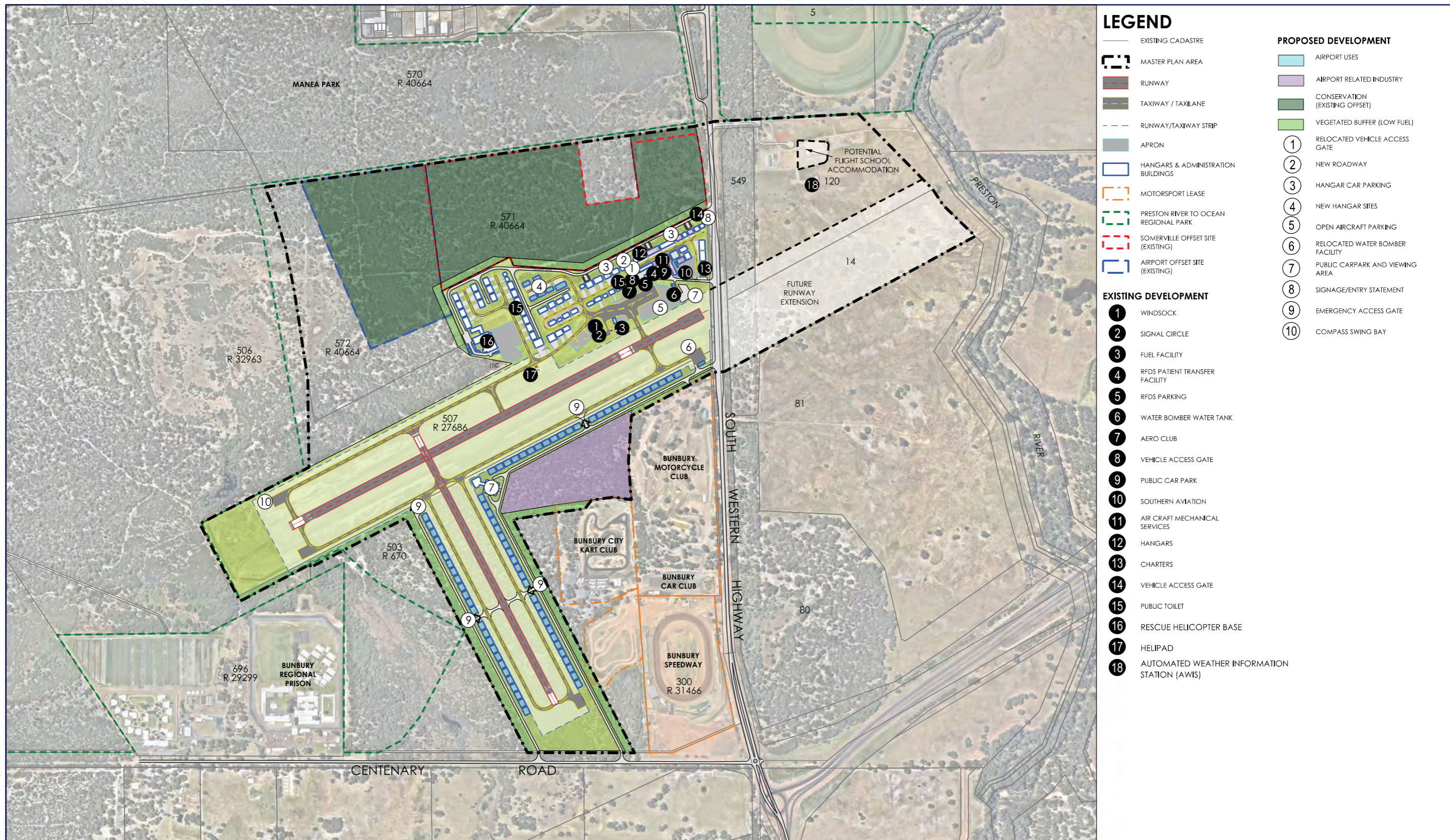


Bunbury Aero Club Family Day



RAC rescue helicopter + operational spare





This plan has been prepared for planning purposes. Areas, contours and dimensions shown are subject to survey.

Figure 1: Master Plan 2020-2040



# 1 Introduction

## 1.1 Overview of Bunbury Airport

Bunbury Airport is located 8km south-east of Bunbury CBD. Bunbury Geographe, with a population of approximately 91,400 people, is the regional capital of the South West of Western Australia.

The airport is a Civil Aviation Safety Authority (CASA) registered airport owned and operated by the City of Bunbury (Aerodrome Registration No. R147). Its existing focus is on general aviation (including commercial and recreational), pilot training and emergency services.

It has a 1,205m single sealed runway (07/25) that is currently limited to 1,015m for landings due to proximity to the South Western Highway (refer Figure 2: Existing Airport)

There are approximately 50 aircraft hangars on site and approximately 100 permanently based aircraft. Presently, there are three pilot training providers based at the airport.

Emergency service operations include Royal Flying Doctor Service (RFDS), purpose-built Department of Fire and Emergency Services (DFES) rescue helicopter base with permanent RAC rescue helicopter, and seasonally-based water bomber planes plus helicopters (on as-needed basis) for bushfire management.

## 1.2 Purpose and Objectives of the Master Plan

### 1.2.1 Purpose

The purpose of the Bunbury Airport Master Plan is to establish the role of Bunbury Airport and guide its planning, development and operation over the 20-year period 2020-2040.

### 1.2.2 Principal objectives

Principal objectives of the Master Plan are:

- promoting the role of Bunbury Geographe Airport and its significance as a community asset

- providing high quality aviation support to rescue, medical transfer, bushfire control and other emergency services in the South West region
- becoming a Centre of Excellence for Emergency Services Management
- meeting the growing needs of general and recreational aviation in Bunbury Geographe
- aiming to become the pre-eminent pilot training airport in regional Western Australia
- complementing the South West’s aviation network including the function and operations of Busselton-Margaret River Regional Airport
- minimising the potential for conflict with surrounding land uses, including avoiding encroachment of incompatible activities
- ensuring compliance with relevant regulations, standards and policies including public safety
- facilitating on-going financial viability.



Figure 2: Existing Airport



### 1.3 Methodology and Consultation

In 2018, the City of Bunbury engaged Calibre Professional Services Pty Ltd (Calibre) to prepare the Master Plan. Preparation of the draft Master Plan was undertaken in close liaison with the City - and the assistance provided by the Airport Reporting Officer (Nigel Archibald) was especially valuable.

Part of the consultant brief was to review the Bunbury Airport Master Plan 2010-2015, which effectively remains in place pending adoption of the new Master Plan. The review has included technical analysis and design workshopping by the project team together with obtaining direct feedback from key stakeholders to determine recommendations already achieved, in progress, pending, or no longer required (e.g. due to changed circumstances).

The City nominated some 15 key stakeholder groups and organisations with whom Calibre conducted interviews with individuals and focus meetings with multiple stakeholders. These included:

- St John Ambulance
- Southern Aviation (Bunbury Flying School)
- Bunbury Aero Club and private aircraft owners
- Royal Flying Doctor Service
- Mayor and CEO, City of Bunbury
- Owner of Lots 80 and 81 adjoining the land reserved for airport purposes to the east of the South Western Highway
- Department of Fire and Emergency Services (DFES) and Bunbury Rescue Helicopter Base operated by CHC Helicopter
- Department of Biodiversity, Conservation and Attractions – DBCA (Parks and Wildlife)

- Busselton-Margaret River Regional Airport
- South West Development Commission
- Main Roads South West
- Bunbury Geopraphe Chamber of Commerce and Industry
- Bunbury Geopraphe Growth Plan Partnership
- Regional Development Australia South West

Using all of these inputs, Calibre undertook a high-level analysis of future need, which contributed to formulation of the Master Plan and its recommendations.

In November 2018, Calibre closed its planning branch in Western Australia. Subsequently, the City of Bunbury engaged Larry Guise (formerly with Calibre) in his new capacity as Director and Principal Planner of Across Planning consultancy to complete preparation of the Master Plan. Across Planning acknowledges the work undertaken by Calibre up to November 2018.

### 1.4 Report Structure

This Master Plan report is presented in two parts – Background Information and Master Plan.



Flying instructor and student pilot



Microlight based in Bunbury



## 2 Background Information

### 2.1 Master Plan Context

As noted in the Regional Airport Master Planning Guidelines (Australian Airports Association, 2014), airports are essential public infrastructure assets. They can generate significant social and economic benefits to communities, but they need to be properly planned and protected over the long term to realise these benefits and ensure their safe and efficient operation.

Poor planning of airports can lead to a range of problems including operational restrictions and amenity impacts on surrounding land uses, particularly if incompatible uses are permitted to develop close to an airport precinct. Airports are capital intensive requiring expensive infrastructure and ongoing maintenance. Accordingly, a Master Plan is central to the orderly and proper planning of any airport.

CASA requires that registered aerodromes have a Master Plan that is regularly updated (usually five-yearly) to guide airport development and operations. The Bunbury Airport Master Plan 2010-2015 (Lowes Churchill, 2010) remains in place pending adoption of the new Master Plan. It has also informed the Bunbury Airport Development Plan (2011) which similarly remains in place and should be reviewed and updated from time to time.

Although a number of the priority recommendations in the Bunbury Airport Master Plan 2010-2015 have been achieved or are in progress, the authors recognised that many recommendations and actions would extend well beyond a five-year period. For this 2020-2040 Master Plan, the City of Bunbury is looking to a strategic plan as a basis for short, medium and long-term planning and investment. The new Master Plan should be reviewed every five years, be adjusted as necessary to respond to changing circumstances while maintaining a long-term view, and implemented via an airport development plan that is also regularly updated.

#### 2.1.1 Historical Background

According to the Bunbury Historical Society, Bunbury's first official airfield was established at Hay Park in 1937. The existing airport located at Davenport 8km south east of the Bunbury CBD was officially opened on 29 November 1964.

The Bunbury Aero Club was established the following year and is one of the oldest aero clubs in Western Australia. It provides member services to recreational and commercial aviators and pilot training for recreational and commercial pilots.

The Bunbury Flying School (Southern Aviation) opened in 2002, providing training primarily for the recreational sector. In 2009,

it added career pilot training and in 2011 became a Registered Training Organisation.

In 1997, the Greater Bunbury Region Scheme (GBRS) was Gazetted. It reserved the site containing the existing airport as well as land to the east of the South Western Highway for "Public Purposes (Airport)" to provide for airport expansion (refer Figure 3: Greater Bunbury Region Scheme).

In February 2010, the Bunbury Airport obtained approval from CASA to operate as a Registered Aerodrome. That same year, a taxiway was constructed from the main airport apron to the western end (threshold) of the 07/25 runway.

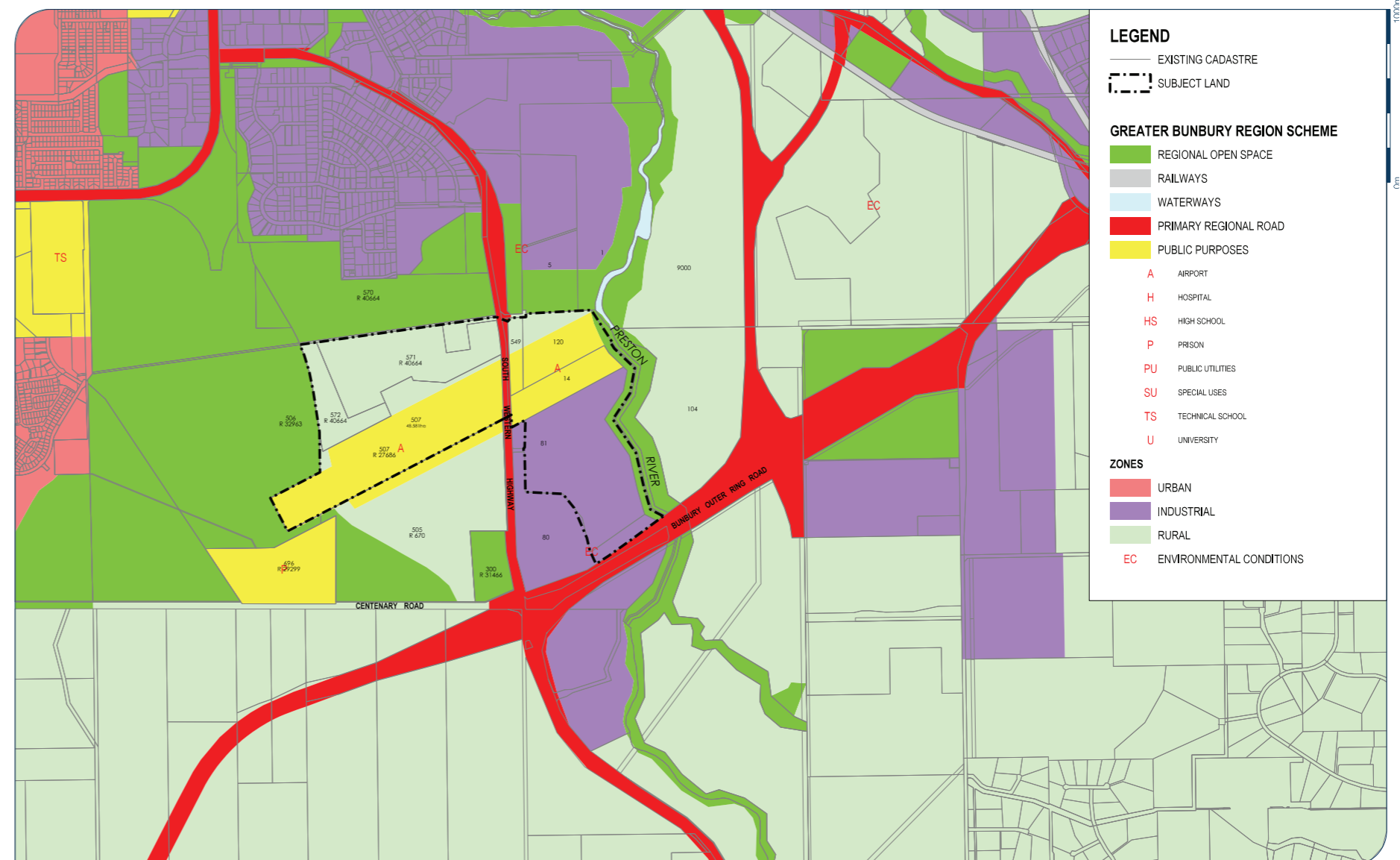


Figure 3: Greater Bunbury Region Scheme



### 2.1.2 Regional Context

The Busselton-Margaret River Regional Airport located 6.5km south-east of Busselton town centre is acknowledged as South West WA's principal regional airport. It has a single 2,460m-long 45m-wide runway (03/21) rated at Code E with capability to handle aircraft the size and weight of the Airbus A330. This means it is also suitable for narrow body Code 4C jet aircraft such as A320 and B737 as well as aircraft such as ATR42, ATR72, BAE146, F100 and Dash8. Current operations include fly-in-fly-out (FIFO) to other regions in the State and other charter services. In March 2020, Jetstar Airlines direct flights Melbourne-Busselton using A320 aircraft are scheduled to commence three days per week. Recent upgrades have also included infrastructure to support the development of freight and commercial opportunities.

Bunbury Airport is unlikely to become an RPT airport because of the Busselton-Margaret River Regional Airport's role and the relatively short distance to the Perth metropolitan area that favours public transport journeys by road and rail over RPT flights.

As the regional capital, Bunbury Geographe is the region's principal centre for business, health, education and government administration in the South West and has the largest population concentration. Coupled with good proximity to the rest of the region, Bunbury Airport was the chosen location for the State's first permanent rescue helicopter base outside of Perth as well as seasonal basing of a contract DBCA helicopter for controlled burn and fox baiting operations and fixed-wing water bombing aircraft. Three pilot training schools presently operate at the airport, along with a growing number of private aircraft.

Master planning for the Busselton-Margaret River Regional Airport and Bunbury Geographe Airport should continue to be complementary, whilst also supporting smaller airports and landing strips throughout the region.

### 2.1.3 Socio-Economic Context

Bunbury Geographe comprises four local government areas – the City of Bunbury and the Shires of Capel, Dardanup and Harvey. At the 2016 Census, together, the four LGAs had an estimated resident population of 91,400.

The Bunbury Flying School (Southern Aviation) has nine full time and two casual employees, a fleet of 12 aircraft and around 50 students undertaking lessons. It provides on-site accommodation for eight students. The Bunbury Aero Club has three full time and three casual employees, a fleet of six aircraft and 35 students undertaking flying lessons. It carries out pilot training (including overseas students) as well as charters, joy flights, mine site transfers, business meetings and club events. Airsports WA has two instructors providing pilot training for microlights, gyrocopters and sports aircraft.

Air Charters West operate regular charter flights, while several local businesses utilize their own aircraft to provide business services such as architecture, dental and medical to inland communities, conduct business in Perth or to transfer staff to worksites throughout the State.

The purpose-built DFES helicopter rescue facility completed in December 2016 is the first in WA built outside the Perth metropolitan area. The 24/7 service has created 14 full time positions, including pilots and paramedics. The facility is designed to allow for future expansion and potentially a second rescue helicopter or Police Wing service.



RAC rescue helicopter base

Socially, the Bunbury Airport makes a major contribution to Bunbury Geographe and the South West through its emergency services and recreational users. The RFDS has some 750 flights per annum to Bunbury Airport. The Bunbury Aero Club has over 200 members and its monthly 'Big Breakfast' event attracts aviators from throughout the South West, as well as being open

to the general public. Scenic flights are popular with locals and tourists alike.

### 2.1.4 Regulatory and Policy Context

#### National Rules and Standards

Australia's legal and administrative framework for regulating and guiding air transport occurs through the Civil Aviation Act 1988 and associated regulations administered by the Civil Aviation Safety Authority (CASA). The relevant regulations are:

Civil Aviation Regulations 1988 (CARs)

Civil Aviation Safety Regulations 1998 (CASRs) which are gradually replacing CARs

CASR Part 139 which prescribes aerodrome requirements

Manual of Standards Part 139 Aerodromes (MOS139) pursuant to CASR Part 139 sets out detailed standards and operating procedures for aerodromes used in air transport operations in Australia.

#### National Airports Safeguarding Framework

- The National Airports Safeguarding Framework (NASF) is a national land use planning framework that aims to:
- Improve community amenity by minimising aircraft noise-sensitive development 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.

#### Other regulatory and policy

Other relevant regulations and policies include:

- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) – Australian Government



- Planning and Development Act 2005 (PD Act) –Western Australian Government
- Greater Bunbury Region Scheme
- City of Bunbury Local Planning Scheme No. 8
- City of Bunbury Local Planning Strategy

In addition, State Planning Policy No. 5.3 Land Use Planning in the Vicinity of Jandakot Airport (WAPC, 2017) has some useful information and examples of land use planning provisions for general aviation airports like Bunbury.

### 2.1.5 Bunbury Airport Master Plan 2010-2015

#### Review of Master Plan 2010-2015 Recommendations

The 2010-2015 Master Plan contained 21 Recommendations. Because the Master Plan only had a five-year plan period, the authors acknowledged from the outset that a number of the recommendations would not be able to be achieved in the plan timeframe, but should be considered in future master plans. Accordingly, in reviewing the past recommendations, the recommendations have been categorised into those that:

- have already been achieved
- have been achieved in part/are in progress
- are outstanding (incomplete) and remain relevant to the new master plan
- are outstanding (incomplete) but are no longer relevant due to changed circumstances.

The main findings from the review of previous recommendations are summarised in Table 1: Review of Recommendations Bunbury Airport Master Plan 2010-2015.

For reasons explained in this report, Across Planning believes the new Master Plan should provide for a future 800m cross-runway west of the South Western Highway together with long-term easterly extension of the existing runway to 1530 m in order to

service the expected demands of Bunbury Geographe as the State’s Second City region with a population of 300,000 people.

The existing Master Plan considers that westward expansion is problematic due to environmental constraints, whereas the new Master Plan considers that, initially, westward consolidation and expansion is possible, including a cross-runway. Although some clearing will be necessary, ecological linkages between Manea Park conservation area and the Preston River as part of the proposed Preston River to Ocean Regional Park can be achieved and offset areas identified and protected.

However, in regards to the planned eastward expansion of the airport, the 2010-2015 Master Plan reported that Main Roads WA planning at that time was to retain the current alignment of the South Western Highway. The report observed that re-alignment of the South Western Highway to accommodate airport expansion was ‘counter strategic’ to Main Roads’ plans and concluded that eastward expansion was unfeasible and that the Bunbury Airport should continue to operate indefinitely with its current runway.

Preliminary planning by Main Roads WA now includes a Davenport Link north-east of the existing airport between Willinge Drive (Port Access Road) and the South Western Highway. Whilst detailed modelling and investigations will be needed to examine the traffic impacts of effectively ‘re-aligning’ the South Western Highway using the Davenport Link, Across Planning considers such re-alignment will have overall benefits to strategic transport in Bunbury Geographe, particularly airport expansion as provided for under the GBRS and avoiding the need for construction of a grade-separated interchange at the current intersection of the South Western Highway and the proposed Bunbury Outer Ring Road.

Construction of the Davenport Link would also require significant funding, including an additional bridge. Given such funding does not form part of the current major investment in the Bunbury Outer Ring Road, there is no short to medium-term prospect of the Davenport Link being developed.

Consequently, realignment of the South Western Highway adjacent the airport is unlikely for the foreseeable future,

meaning easterly extension of the main runway is impractical in the short to medium-term.

Pending a future decision on the proposed Davenport Link, retention of the South Western Highway on its current alignment precludes a cross-runway being developed eastward of the highway. However, provision has been made in the new Master Plan for a cross-runway to be built toward the western end of the existing main runway – west of the Bunbury City Kart Club on Reserve 670.

### 2.1.6 Key Stakeholders

Key stakeholders are mentioned above under (1.3) Methodology and Consultation.

As a significant nearby land use, it is suggested that the City of Bunbury consult with the Bunbury Regional Prison on the new Master Plan. It should be noted that the proposed cross-runway is located further from the prison than the existing main runway. However, there will be an increase in aircraft movements and, in the long-term proposals, re-alignment of the South Western Highway would marginally affect travel times to and from the prison for journeys coming from the north.

## 2.2 Current Situation

Australia has adopted the International Civil Aviation Organisation (ICAO) methodology of using a code system, known as the Aerodrome Reference Code, to specify the standards for individual aerodrome facilities which are suitable for use by aeroplanes within a range of performances and sizes. The Code is composed of two elements: element 1 is a number related to the aeroplane reference field length; and element 2 is a letter related to the aeroplane wingspan and outer main gear wheel span.

An Aerodrome Reference Code must be applied to each runway at an aerodrome and the operators must maintain the runways and taxiways in accordance with the applicable standards set out in the MOS139 for the respective runway or taxiway.



Table 1: Review of Recommendations Bunbury Airport Master Plan 2010-2015

No.	Description of Recommendation	Status	Comments	Implications for new Master Plan
1	<p>Create a sustainable financial model to guide airport operations and development in the future</p> <p>Concept Development Plan proposed:</p> <p>(1) Increased annual revenue stream from hangar lease fees</p> <p>(2) Create an Airport Reserve Fund</p> <p>(3) No additional City of Bunbury funding other than sale of vacant airport land</p> <p>(4) Financially self-sufficient by 2016</p>	Achieved	<p>Current financial model appears suitable for ongoing airport operations, but lacks sufficient reserves for major maintenance and upgrades.</p> <p>Concept Development Plan proposals:</p> <p>(1) Increased revenue stream achieved</p> <p>(2) Airport Reserve Fund created (but very limited)</p> <p>(3) Lease and rate income should be identified as airport revenue. Sale of vacant CoB land (east of South Western Highway) should generally only occur if associated with airport development</p> <p>(4) Financially self-sufficient for ongoing operations but the Airport Reserve Fund lacks sufficient resources for major works and airport development.</p>	Provide opportunities for increased revenue stream to aid financial self-sufficiency and ensure the long-term operation, maintenance and strategic growth of the airport (e.g. identify potential new lease and/or land sale opportunities associated with airport development).
2	<p>Increase hangar space</p> <p>(allocate additional land and provide for systematic implementation for hangar development)</p>	Achieved	In 2014, the City of Bunbury developed the adjacent land formerly occupied by the Bunbury Clay Target Gun Club to house the rescue helicopter base and 20 additional hangar sites (PR-1369,1370,1371 & 1373). At the time of preparation of this Master Plan, 15 of these hangar sites have been leased with the remaining 5 hangar sites available for lease.	Significant additional hangar space will need to be identified to provide for future airport growth.
3	<p>Improve access to power</p> <p>(identify the anticipated power needs, obtain an estimate for installation and decide how to proceed)</p>	Achieved	In 2012, the City of Bunbury engaged Western Power to install a larger transformer at the airport (PR-1361) from a 20kVA to 200kVA. DFES upgraded the transformer to 315kVA during construction of the rescue helicopter base. In 2013, new electrical cables were installed to each hangar site (PR-1372).	The existing power supply is considered suitable for short-term requirements but investigation into future expansion and power allocation should be included in future Airport Development Plans.
4	<p>Improve access to water</p> <p>(CoB to liaise with Aqwest to determine planned upgrades, obtain an estimate for installation of improved water services and decide how to proceed)</p>	Pending	The airport is located on the fringe of the Aqwest distribution area and is serviced by a 100mm water main. So that the City of Bunbury does not have to pay significant network upgrade costs it was decided to await the development of nearby industrial subdivisions which will necessitate the water network upgrade. Water usage at the airport is generally low and the City of Bunbury is encouraging hangar lessees to install rainwater tanks. Water Pressure is considered unsatisfactory with regards to on-site fire management.	Water supply demand will increase with airport expansion. Consider ongoing rainwater tanks, roof catchment and other water harvesting. Recommend the airport operator liaise with Aqwest and major landowners in the area over network upgrade.
5	<p>Increase staffing</p> <p>(the Airport Reporting Officer role should be increased from half time to full time to implement Master Plan recommendations)</p>	Pending	Various stakeholders indicated that the management of the airport had vastly improved during the few years leading up to the 2010 Master Plan, largely due to the allocation of the Airport Reporting Officer. The workload is continually increasing though and consideration should be given to making the position full-time.	A full-time Airport Reporting Officer is likely to be required to oversee significant airport upgrades.
6	<p>Construct entry statement</p> <p>(include a new entry statement in the Bunbury Airport Development Plan - ensuring capacity to provide standardised advertising for businesses and clubs that desire it)</p>	Pending	This Project (PR-3692) was deferred until completion of the 2020-2040 Master Plan to ensure the appropriate location for an entry statement was chosen.	<p>Deferred to new Master Plan.</p> <p>Not a high priority and can be programmed into later stages of airport expansion.</p>
7	Retain Advisory Committee	Pending	In review of all its Advisory Committees, Council disbanded the Airport Advisory Committee in favour of an Airport Users Group. Over time, the Group met less and less frequently and eventually became dormant – reportedly due to general satisfaction with airport management and perceived lack of need for the Group.	<p>Airport users generally favour a ‘Airport Users Group’ for the time being that could meet a couple of times a year to generally discuss airport matters etc.</p> <p>The potential exists to re-establish the Advisory Committee to help drive the outcomes of the Master Plan 2020-2040.</p>
8	Adopt strategic recreational and general aviation focus	Ongoing	The improvements that have occurred since 2010 have reflected the desired focus to keep Bunbury Airport as a general aviation airport, catering primarily to recreational interests	Maintain general aviation focus (including recreational, emergency services, pilot training)
9	<p>Improve wastewater access</p> <p>(add to utility service improvements addressed in the Development Plan)</p>	Pending	The Water Corporation sewer network currently services the Halifax LIA. There are significant costs in extending this service to the airport and it has been decided to await the development of nearby industrial subdivisions which will necessitate the network expansion.	<p>Not Essential. Current wastewater (individual onsite effluent disposal) is satisfactory for low volume airport use.</p> <p>May need to be considered as part of any Airpark and commercial development proposed</p>



No.	Description of Recommendation	Status	Comments	Implications for new Master Plan
10	Increase permanent itinerant parking (relocate the fire bomber hardstand south of the runway to free up space on the apron for itinerant parking)	Achieved	Additional aircraft parking with tie-down cables was constructed in 2011 (PR 1375).	Additional parking will need to be considered as part of the new Master Plan
11	Obtain CASA approval for approach change (CoB to apply for the change in approach on Runway 07 to reduce noise over College Grove)	Achieved	The subject of right hand circuits was discussed with CASA in 2012. CASA indicated that right hand circuits were only approved in exception circumstances and as there was no safety imperative, Bunbury's application was rejected.	Applied for and denied. Not required.
12	Align cadastre to reflect correct Airport Reserve	Achieved	The cadastral boundaries were modified in 2012 (PR-1360)	Noted
13	Provide telephone and Broadband service (add to list of utility service improvements in Development Plan)	Pending	Largely the responsibility of the NBN and other providers. Development of nearby private land (e.g. industrial subdivision) will help justify network expansion	Noted
14	Minimise conflict between aircraft and motor vehicles on taxiways (improve segregation of motor vehicle and aircraft traffic as a key requirement for the Development Plan)	In progress	The Master Plan was designed and constructed to separate aircraft and motor vehicle movements. Hawker Drive also provides some rear access to existing hangars. However, there remain significant sections shared by motor vehicles and aircraft	Further investigation needs to occur with congestion/conflict around the vehicles, hangars and aircraft (Hawker Drive).
15	Increase car parking capacity (mark parking areas and provide additional parking)	Achieved	The carpark was resealed and linemarked in 2011, with an additional 38 bays added in 2013.	Future carparking requirements will need to be considered in the new Master Plan
16	Plan for future toilets and ablution block (include toilet and ablution facilities in the Development Plan)	Achieved	An ablution block was constructed within the new development area in 2015 (PR-1374)	Premature to identify additional public toilets at this time but should be further considered as airport growth continues.
17	Secure emergency landing capability (Create an easement over Lots 11 and 14 [east and western ends of runway] that prohibits buildings and requires annual mowing)	Pending	Request to ensure the City of Bunbury provide, in the future, for a secured emergency landing and overshoot area for the airport (undeveloped/constrained), ideally either side of the existing runway, within Lots 11 and 14. For this to happen CoB would need to retain these lots in their ownership.	Consider incorporating this request within the new Master Plan
18	Reduce movement conflict on apron	Pending	The proposal to relocate the water bomber area to south of the runway is considered impractical due to the difficulty of providing vehicle access. The installation of run-up areas has helped reduce the movement conflict.	Consider relocation of water bombers as part of the new Master Plan; rationalise and expand aprons.
19	Explore the creation of an Airpark	Pending	The subject was discussed with the Department of Lands & Regional Development in 2012. The airport is a Crown Reserve and the DLRD did not support the proposal. More opportunity exists to achieve an airpark within the Council-owned freehold land and on private land.	Further consider Airpark development in the new Master Plan
20	Consider airside security requirements and security gates (consider in Development Plan)	Pending	Consideration commenced but no suitable alternative was identified. CASA has not raised any security concerns during surveillance audits.  Reportedly, some emergency service vehicles that are not regular airport users have experienced delayed access when no one is on site to provide assistance.	Emergency Services personnel (RFDS and St John Ambulance) are issued with codes to key pad locks on the patient transfer facility and airside gate.
21	Upgrade runway lighting (upgrade runway lighting to CASA lateral and longitudinal requirements)	Achieved	New CASA compliant LED runway and taxiway lighting was installed and commissioned 2013 (PR-1357) and has received numerous favourable comments. During a regular audit in 2017, CASA identified that the taxilanes are unlit and suggested the City consider the installation of lighting or reflectors to improve the level of safety at night.	No foreseeable need to further upgrade runway lighting however consideration should be given to investigating the installation of taxilane lighting or reflectors.



The existing Bunbury Airport has a single runway. Under code element 1, the applicable code number for an aeroplane reference field length of 800 m up to but not including 1200 m is Code 2.

However, as the existing runway width is only 18 m, the applicable code number is Code 1.

Under code element 2, the applicable code number is Code B, with a wing span up to but not including 24 m and outer main gear wheel span of 4.5 m up to but not including 6.0 m.

Accordingly, the existing Bunbury Airport is classified as a Code 1B aerodrome, with a non-precision instrument approach runway standard.

In February 2010, the Bunbury Airport obtained approval from CASA to operate as a Registered Aerodrome. In 2018, CASA announced proposed changes to MOS139 which includes amalgamating registered aerodromes into certified aerodromes.

### 2.2.1 Ownership and Management

Bunbury Airport is owned and operated by the City of Bunbury. The City has a designated Airport Reporting Officer who manages the airport at an operational level in a part-time (0.75 FTE) capacity along with a fellow officer accredited for duties including airport inspections – also part-time (0.25 FTE).

The City had an Airport Advisory Committee comprised of a number of stakeholder groups and two Councillors. The advisory committee was reportedly active during formulation and early implementation of the 2010-2015 Master Plan, but was later replaced by an Airport Users Group.

Calibre’s consultation with stakeholders indicated a high degree of satisfaction with the manner in which the airport has been developed and managed in the past few years that resulted in little perceived need for the Users Group to meet regularly. In addition, a common response was that relationships between the various airport users were generally very good with plenty of informal communications and the Airport Reporting Officer being an effective communicator and facilitator.

### 2.2.2 Site Description

The existing Bunbury Airport is located on Crown Reserve Lot 507 South Western Highway Davenport, with an area of 48.58 ha. The existing Runway 07/25 is orientated southwest-northeast with the principal take-off and land direction to the southwest due to prevailing winds (refer to Figure 2: Existing Airport).

The City of Bunbury owns in freehold Lot 14 (10.89 ha), Lot 120 (19.78 ha) and Lot 549 (3.47 ha) to the east of the South Western Highway that were purchased to facilitate airport expansion.

### 2.2.3 Surrounding Land

Immediately north of the airport lies Lot 571, which is Crown land containing remnant vegetation, and subject to two environmental offsets. To the west lies Manea Park. The Bunbury Regional Prison is situated to the southwest with access off Centenary Road.

South of the airport is Crown land vested in the City of Bunbury. Three motorsport facilities (speedway, motocross and go-carts) occupy a significant portion of the reserve (R 670) adjacent to the South Western Highway.

North of Lot 120 is a turf farm. To the east beyond the Preston River lies cleared land previously used for farming, but now zoned for industrial use. South of Lot 14 is also privately-owned cleared farmland similarly zoned for industrial use.

### 2.2.4 Existing Activities

Existing general aviation at Bunbury Airport comprises Instructional Flying, Aerial Work, Self-fly Business Aviation, and Sports and Pleasure Flying according to the Australian classification of civil aviation activities.

Instructional flying is predominantly commercial instruction using CASA registered VH aircraft. Student pilots may be seeking Recreational, Private or Commercial Pilot Licences. Instructional flying also occurs in Light Sports Aircraft (LSA) registered with Recreational Aviation Australia Inc (RAAus) who tend to issue Recreational Pilot Certificates to permit the holder to fly ultralight aircraft registered with RAAus. Pilots are permitted to fly aircraft

with a maximum of one passenger and a maximum take-off weight of 600kg.

Aerial Work includes observational and patrol aviation (mainly Department of Biodiversity, Conservation and Attractions), search and rescue (RAC helicopter), policing, and firefighting (DBCA).

Self-fly Business Aviation is conducted by a number of small businesses including medical, resources sector and architectural.

Sports and Pleasure Flying includes pleasure and personal transport, joyflights/sightseeing charters, community service flights, and parachute dropping. These involve both VH and RAAus registered aircraft.

Aviation activities at Bunbury Airport classified as Commercial Air Transport Services are non-scheduled, comprising transport charters (passenger and freight), and air ambulance (RFDS).

On-going usage data is presently not captured for Bunbury Airport due to:

- the relatively high cost of administration
- difficulties in obtaining accurate data associated with the dual CASA/RAAus registrations systems, with respective flight data for the respective registrations not always readily available to businesses that capture and supply data and associated services such as invoicing of landing fees (where applicable).

For a 3-month period in 2008/09, the City of Bunbury engaged Avdata Australia to evaluate the number of aircraft using Bunbury Airport and trial billing. The evaluation recorded 3278 flights. Extrapolated over 12 months, this indicated approximately 13,000 flights per annum, although given the evaluation period was over a busy time of year, the 2010-2015 Master Plan considered around 12,000 flights per annum was probably more realistic.

Of the 12,000 - 13,000 flights per annum, there are approximately 750 RFDS, 300 RAC rescue helicopter and 400 water bomber flights. The airport operator (City of Bunbury) estimates that there are around 3,500 LSA flights, 4000 pilot training



instructional flights and 4000 other general aviation flights each year, although the numbers for these three categories may be a little less.

### 2.2.5 Existing Facilities

- Existing facilities at Bunbury Airport include:
- 1205 m long x 18 m wide Runway 07/25 with pilot-activated LED lighting
- Taxiway and run-up bays
- Aprons and sealed aircraft parking and tie-down areas
- Illuminated Wind Indicator
- Helipad (2)
- Avgas bowser, Jet A1 drum shed, DBCA Jet A1 fuel tank
- Water Bomber water tank
- RFDS patient transfer station
- Rescue helicopter base
- Automated Weather Information Station (AWIS)
- 70 aircraft hangar sites (65 leased)
- Security fencing and access gates
- Sealed car parking

Figure 4: Existing Facilities shows the layout of existing airside and landside facilities.



Piper Meridian privately owned, based in Bunbury



RV-10 privately owned, based at Jandakot WA



RV-6 privately owned, based in Jandakot WA

### 2.2.6 Ground Transport Access

The single road access to the airport is from the South Western Highway, with Hinkler Drive being the main entry and Hawker Drive providing access via security gate to the rescue helicopter base and recent hangar extension area.

A public car park exists near the Bunbury Flying School and RFDS patient transfer station. Adjacent the Bunbury Aero Club is a sliding security gate for vehicle access. Opposite the RFDS facility is an airside security gate, while personnel gates to airside also exist near the aero club.

Vehicle access at many hangars is presently reliant on access shared with aircraft taxi-ways. This should be minimised and eliminated where possible.

### 2.2.7 Utility Services

The airport is connected to an Aqwest water main situated in the South Western Highway reserve. Water use is generally low and the City of Bunbury is encouraging hangar lessees to install rainwater tanks.

There is no sewer connection to the site, with the nearest sewer being at the Davenport industrial area to the north. Existing premises operate on-site effluent disposal.

The airport is serviced by a 315kVA transformer providing power to the site (upgraded by DFES during construction of the rescue helicopter base). In 2013, new electrical cables were installed to each hangar site.

Telephone and internet connection to the site is presently limited to ADSL. A separate line exists to the rescue base. There is presently no NBN connection available.

### 2.2.8 Environmental Values

The underlying soil type in the area is Bassendean Sand – Aeolian, coastal sediment (Basal conglomerate overlain by dune quartz with heavy mineral concentrations). The associated remnant vegetation is a mosaic of Medium forest; jarrah-marri/ Low woodland; banksia (Banksia sp.)/ Low Forest; and



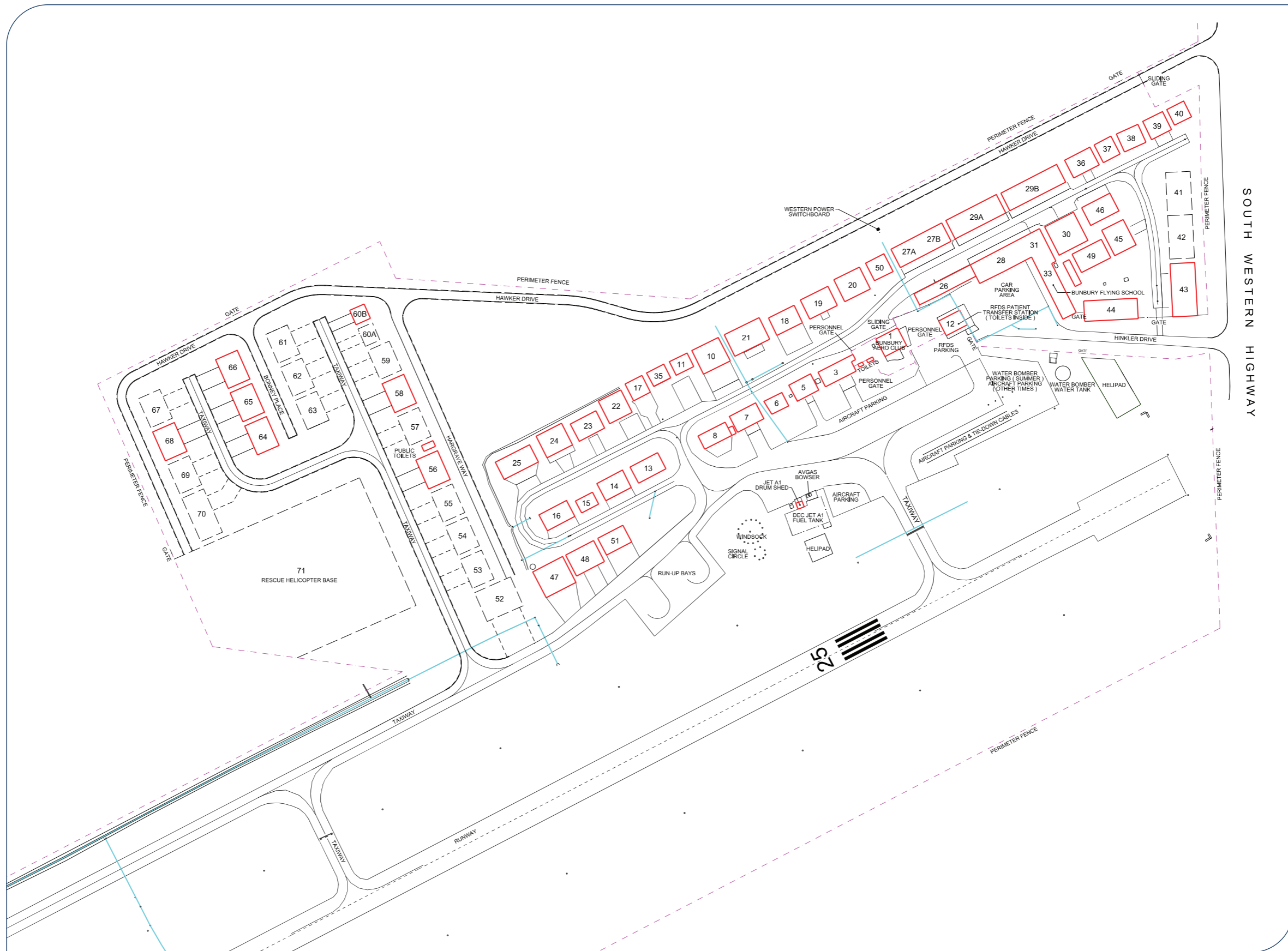


Figure 4: Existing Facilities



Teatree (*Melaleuca* spp.). Part of the area comprises the Southern River Vegetation Complex and consists predominantly of open woodland of *Corymbia calophylla*, *Eucalyptus marginata*, and *Banksia* sp. with fringing woodland of *Eucalyptus rudis* and *Melaleuca raphiophylla* along creek beds (Heddle et al., 1980).

The existing airport lies immediately south-east of Manea Park which forms part of the Preston River to Ocean Regional Park. The park is a significant conservation and recreation asset for the community, although substantial parts are *Phytophthora cinnamomi* (Dieback) affected and portions have been significantly impacted by past uses such as grazing and off-road vehicles.

Level 1 Fauna Assessment studies in the area (Harewood, 2012) confirmed that vegetation in the area provides habitat for Western Ringtail Possum (*Pseudocheirus occidentalis*) and foraging and nesting habitat for Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudins Cockatoo (*Calyptorhynchus baudinii*) and Carnaby's Cockatoo (*Calyptorhynchus latirostris*).

Figure 5: Bunbury Airport Environmental Context shows areas subject to development offset management plans to offset clearing of remnant vegetation for development of the rescue helicopter base facility and adjacent hangar extension area, and construction of Somerville Drive near the Southern TAFE site.

In 2013, the WA Department of Environment Regulation advised of the existence of an ecological community that is potentially "Dense Shrub lands on clay flats (SCP09)" located immediately south of the helicopter rescue facility (DPaW 2013). This ecological community is listed at both the State and Commonwealth levels as a Threatened Ecological Community (TEC) and was avoided when the rescue facility was built.

East of the South Western Highway, substantial areas have previously been cleared for agricultural purposes, although a strip of remnant vegetation/regrowth remains immediately east of the highway, and along the Preston River.

The GBRS has reserved an additional strip of Regional Open Space adjacent the Preston River foreshore for the purpose of vegetation rehabilitation and flood management (refer Figure 3: Greater Bunbury Region Scheme).

### 2.2.9 Heritage Values

Portion of the land east of the South Western Highway contains Aboriginal Heritage Site 19795 which is relevant to the Preston River (Mythological). The land immediately north of Lot 120 (outside but adjacent the study area) is registered Aboriginal Site 4873 (Artefact/ Scatter) – refer to Figure 6: Aboriginal heritage sites.

The Department of Planning, Land and Heritage advises that some of the subject land is on land within or adjacent to the Gnaala Karla Booja People Indigenous Land Use Agreement (ILUA) executed by the WA Government on 8 June 2015.

The ILUA binds the parties (including 'the State') to enter into a Noongar Standard Heritage Agreement (NSHA) when conducting Aboriginal Heritage Surveys in the ILUA areas, unless they have an existing heritage agreement.

There are no buildings or places of non-indigenous heritage significance registered in the area.

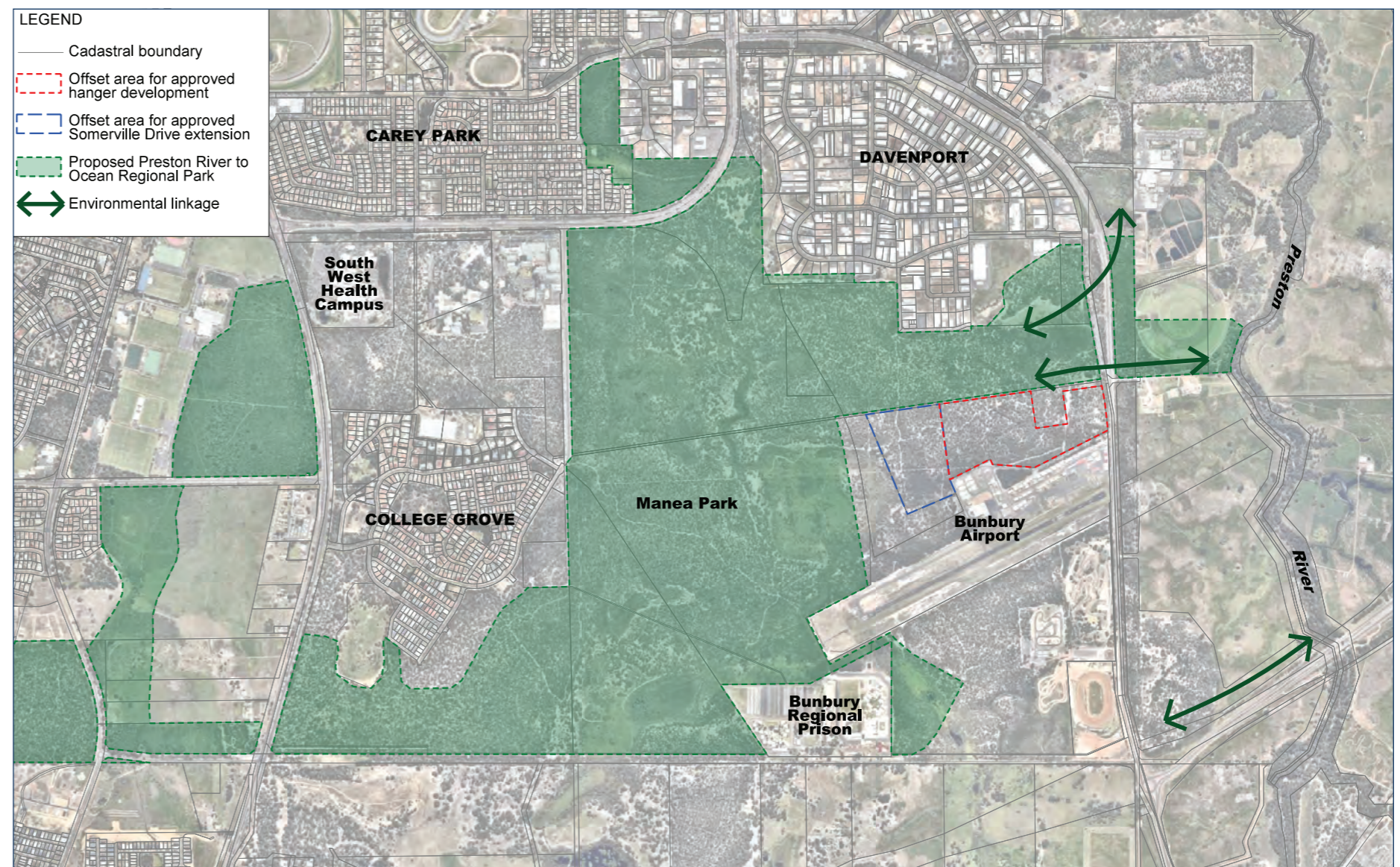


Figure 5: Bunbury Airport Environmental Context





Figure 6: Aboriginal heritage sites



## 2.3 Comparative Regional City Airports

Table 2: Summary of Comparative Regional City Airports provides a snapshot comparison of several regional city airports across Australia. It illustrates that there is considerable variation in the type and size of regional city airports depending on factors including their principal functions, distance to capital cities and other major airports and their population base.

Unlike all the airports in Table 2 which include Regular Passenger Transit (RPT) services, Bunbury Airport does not provide RPT services due to proximity to Perth, and the Busselton-Margaret River Regional Airport being the preferred RPT airport for the region.

General aviation is a significant component of all the comparable airports in Table 2 and each have a second runway (including cross-runways).

## 2.4 SWOT Analysis

A high-level analysis of strengths, weaknesses, opportunities and threats (SWOT) was undertaken, principally through consultation with key stakeholders. Table 3: Bunbury Airport Master Plan SWOT Analysis presents the SWOT summary.

## 2.5 Strategic Vision and Objectives

The following vision statement and objectives provide broad guidance and direction for the development of the Bunbury Airport. The development of the vision and objectives was guided by the master plan context discussed in section 2.1, and the SWOT analysis discussed in section 2.4 in which discussions with key stakeholders played an important role.

To better reflect the emerging role of the airport and sub-region and to help raise its profile, Across Planning recommends that the airport be re-named Bunbury Geographe Airport.

**Recommendation 1:** The Bunbury Airport be re-named Bunbury Geographe Airport.

### 2.5.1 Strategic Vision

The vision for Bunbury Geographe Airport is:

**“Bunbury Geographe Airport: meeting the general aviation needs of Western Australia’s Second City”**

### 2.5.2 Objectives

- The objectives for the Bunbury Geographe Airport are:
- promoting the role of Bunbury Geographe Airport and its significance as a community asset
- providing high quality aviation support to rescue, medical transfer, bushfire control and other emergency services in the South West region
- becoming a Centre of Excellence for Emergency Services Management
- meeting the growing needs of general and recreational aviation in Bunbury Geographe
- becoming the pre-eminent pilot training airport in regional WA
- complementing the South West’s aviation network including the function and operations of Busselton-Margaret River Regional Airport
- minimising the potential for conflict with surrounding land uses, including avoiding encroachment of incompatible activities
- ensuring compliance with relevant regulations, standards and policies including public safety
- facilitating on-going financial viability.

## 2.6 Critical Airport Planning Parameters

This section discusses the critical airport planning parameters affecting the Master Plan.

### 2.6.1 Forecast of Future Operations

Section 2.2.4 (above) describes the existing aircraft usage at Bunbury Airport.

#### Aviation trends

Global aviation continues to grow, and Australia is no exception. A General Aviation study (Department of Infrastructure and Regional Development, 2017) identified that over the period 2003/04 to 2016/17 the number of private pilot licence holders started at around 16,000, fell to under 12,000 in 2009/10, but returned to almost 16,000 in 2016/17.

Over the same period, Commercial Pilot Licence (CPL) holders in Australia grew from 5,000 to 7,000. Similarly, the number of Air Transport Pilot Licence (ATPL) holders (licenced to fly a wide range of general aviation aircraft) grew from 6,500 to 8,000.

There was a reduction in the number of Recreational Pilot Licences (RPL) from a little over 4,500 to under 3,000. However, this should be viewed in context of changes in the number of Recreational Pilot Certificate (RPC) holders over the same period. RPC holders numbered around 5,000 in 2004, peaked at over 10,000 in 2011, declined for a few years and then levelled out at around 9,000 from 2015.

The RPCs are issued by RAAus and considered roughly equivalent to an RPL issued by CASA. Together, numbers of RPCs and RPLs indicate a similar overall increase in licenced general aviation pilots to the CPL and ATPL categories mentioned above.

- The General Aviation study referred to an overall increase in general aviation activity between early 1990 and 2010, but then decreased. The main decrease was in VH-registered aircraft (CASA), while RAAus-registered LSA aircraft have increased.



Table 2: Summary of Comparative Regional City Airports

Name of Airport	Albany (WA)	Wagga Wagga (NSW)	Rockhampton (QLD)	Launceston (TAS)	Townsville (QLD)
Existing Population (LGA)	33 650	46 900	61 700	106 150	196 200
Distance from:					
Capital city	Perth (400km)	Sydney (450km)	Brisbane (600km)	(Hobart) 180km	Brisbane (1300km)
Nearest airport	Denmark (80km)	Temora (90km)	Gladstone (245km)	Devonport (101km)	Proserpine (280km)
Main Runway (length/width)	14/32 – 1800m x 30m	05/23 – 1768m x 45m (non-precision instrument runway)	15/33 – 2568m x 45m	14R/32L - 1981m x 45m	01/19 – 2438m x 45m (Code 4 instrument precision runway)
Second Runway (including cross-runway)	05/23 - 1096m x 30m (non-instrument Code 2C)	12/30 – 1526m x 30m (non-precision instrument runway) grassed and suitable for light aircraft only	04/22 – 1645m x 30m wide	2 x (unrated) approx. 700m x 18m grass runways suitable for light aircraft only	07/25 - 1100m x 30m (Code 2 instrument non-precision runway)
Main functions:					
RPT*	Yes	Yes	Yes	Yes	Yes
General Aviation	Yes	Yes	Yes	Yes	Yes
Flight Training	Yes	Yes	Yes	Yes	Yes
Emergency Services	Yes	Yes	Yes	Yes	Yes
Other	Defence Freight	Defence Freight	Australian Defence Force – Shoalwater Bay Military Training Area and Singapore Military Bureau of Meteorology	Freight	Defence
Airport Master Plan	2012-2032 (with 5 year reviews)	2010-2030	2017-2037	2015-2035	2016-2036
Directions and future focus	<ul style="list-style-type: none"> <li>The Master Plan will consider short (0-5 years), medium (6-10 years) and long term (11-20years) requirement and opportunities for expanding aviation operations and utilising airport land.</li> </ul>	<ul style="list-style-type: none"> <li>Providing for the development of additional uses of the airport site</li> <li>Reducing the potential conflicts between uses of the airport site, and to ensure that uses of the airport site are compatible with the areas surrounding the airport.</li> <li>To establish the Wagga Wagga Airport as 'A Centre of National Aviation Significance' and as a 'world-class aviation education and training centre'</li> </ul>	<ul style="list-style-type: none"> <li>To take stock of the current situation for the airport, identify current needs and those for the foreseeable future and plan for accommodation of those needs over the longer term</li> <li>Address many of the earlier recommendations from the 2008 Master Plan and other subsequent reports and studies</li> <li>Relocation of all military activity into a purpose built Military Precinct at the Airport</li> </ul>	<ul style="list-style-type: none"> <li>To fully realise its potential as a domestic gateway and hub for passengers and freight, and to safe guard its operations</li> <li>To efficiently and sustainably use and develop the airport site, this involves balancing the need to maintain and expand aviation facilities safely and effectively with achieving an acceptable commercial return to shareholders</li> </ul>	<ul style="list-style-type: none"> <li>Maintain compatibility between civil airport land uses and other external land uses</li> <li>Provide adequate additional land supply for complementary land uses that are able to support core aviation purposes</li> </ul>
Comparative advantages	<ul style="list-style-type: none"> <li>Offers FIFO commuter arrangements</li> <li>Second Runway</li> <li>Jet A1 Fuelling Facilities</li> </ul>	<ul style="list-style-type: none"> <li>Aviation Support activity and industrial park</li> <li>Multiple fuel installations providing Avgas and Jet-A1, as well as a mobile tanker</li> <li>Onsite significant maintenance facility</li> </ul>	<ul style="list-style-type: none"> <li>Cross runway 04/22</li> <li>Primarily used for GA traffic that is more susceptible to crosswind conditions</li> </ul>	<ul style="list-style-type: none"> <li>Offers FIFO commuter arrangements</li> <li>GA parking on both sealed and gravel areas</li> <li>Cross Runway 18/36</li> <li>primarily used for GA traffic that is more susceptible to crosswind conditions</li> <li>Landside Business Precinct with complementary retail and commercial development</li> </ul>	<ul style="list-style-type: none"> <li>Offers FIFO commuter arrangements</li> </ul>
Development opportunities	<ul style="list-style-type: none"> <li>Commercial development in the South West quadrant</li> <li>Low impact development in the eastern and northern quadrants to generate income (i.e. turf farming, golf driving range)</li> </ul>	<ul style="list-style-type: none"> <li>Designated GA space with hangers for future expansion</li> <li>'Airport City' for creating diverse synergistic revenue streams which grow at various speeds to finance airport infrastructure and development</li> </ul>	<ul style="list-style-type: none"> <li>Air freight handling facilities and national and international air freight connections</li> <li>Assign airport strategic lands for future defence logistics purposes</li> <li>Increase in GA levels, will require additional hangar space</li> <li>Develop a facility for FIFO commuters</li> </ul>	<ul style="list-style-type: none"> <li>Provision for terminal expansion</li> <li>Identification of RPT apron expansion areas</li> <li>Reservation of land on the east of the airport for freight and operational support</li> <li>Relocation of GA facilities to the south of the freight apron</li> <li>Identification of areas available for non-aviation development</li> <li>Provision of new fire-fighting training facilities</li> </ul>	<ul style="list-style-type: none"> <li>Relocation of aged GA facilities to the Northern Aviation Precinct can provide the opportunity to facilitate long-term planning and modernisation of the region's GA services</li> </ul>

\*Regular Passenger Transit

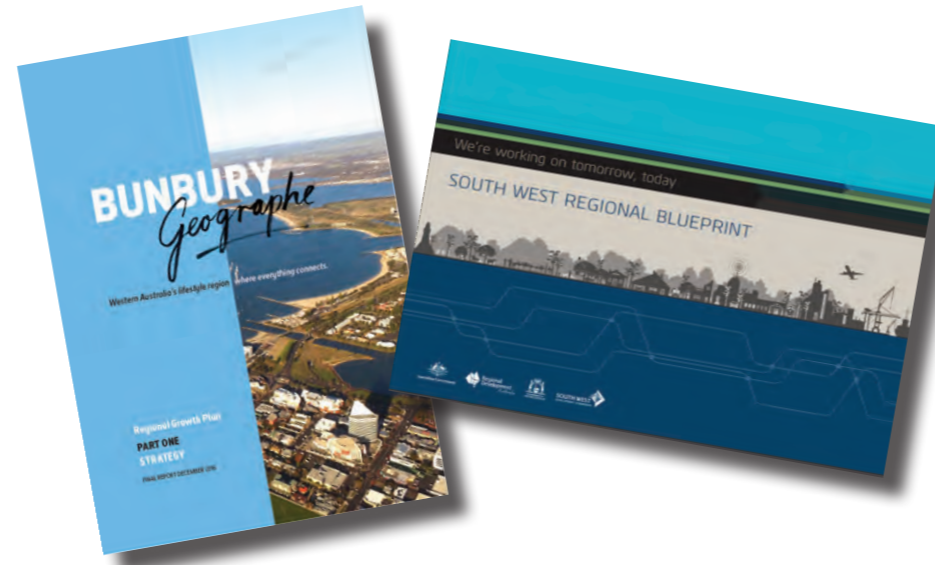
Table 3: Bunbury Airport Master Plan SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> <li>▪ The numerous flight training schools due to:                             <ul style="list-style-type: none"> <li>– Unrestricted airspace</li> <li>– Good weather</li> <li>– Not congested</li> <li>– Location</li> </ul> </li> <li>▪ No Landing Fees attracts a greater range of users and is an advantage as majority of other airports have them.</li> <li>▪ Emergency Services: fast and efficient response due to strategic location with good proximity to the region and the metro area.</li> <li>▪ Strong relationships, communication channel and understanding between City of Bunbury and airport users (including emergency services providers).</li> <li>▪ Focus on General Aviation, Recreational and Emergency Services, differentiates from other nearby airports (Busselton)</li> <li>▪ Good Royal Flying Doctor Service Facilities</li> <li>▪ Location and proximity to Bunbury CBD</li> <li>▪ AWIS installed and funded by DFES; available to all airports users</li> <li>▪ Reputation as a “friendly” airport (mostly linked to no landing fees) and ability for General Aviation and Recreational users to readily access</li> <li>▪ General layout and good condition of airport infrastructure and facilities</li> <li>▪ Recent introduction of longer leases: provides surety of investment of hangars and use.</li> <li>▪ Safe and secure</li> <li>▪ Complementary uses to nearby Busselton-Margaret River Regional Airport</li> <li>▪ 1205m runway generally sufficient for most uses</li> <li>▪ Non-precision instrument approach</li> <li>▪ Additional taxiways have reduced airport congestion</li> <li>▪ Minimal risk of noise impact due to location</li> </ul>	<ul style="list-style-type: none"> <li>▪ Runway extension to ease pressure of landing and provide for alternate aircraft to use airport (some users favoured 1500m; others considered 1600-1800m ideal)</li> <li>▪ Proximity of runway to the South Western Highway: landing and take-off can be difficult and sometimes impacts passing traffic</li> <li>▪ Cross winds are often an issue when trying to land, particularly for smaller aircraft, trainee pilots and emergency services.</li> <li>▪ Internal and adjoining vegetation constraints: limited area for expansion and also bushfire management issues</li> <li>▪ Lack of expansion opportunities on current site (Lot 507)</li> <li>▪ Funding – Reserve Fund remains small</li> <li>▪ Lack of internal lighting around buildings and roads/paths</li> <li>▪ Night time access for Emergency Services is sometimes delayed if they do not have the security gate codes and no one is on site to allow access</li> <li>▪ Location and re-fuelling of water bombers is constrained if airport is busy during emergencies</li> <li>▪ Occasional general congestion amongst different airport users (air-side)</li> <li>▪ Uncertainty about communication between airport users during emergency situations (e.g. urgency/hierarchy for runway and airspace)</li> <li>▪ Lack of public transport from airport to Bunbury CBD: useful tourism option, also for flight training students.</li> <li>▪ No precision instrument approach on 07 runway (would assist RFDS)</li> <li>▪ No Jet A1 fuel bowser available for general users (DFES have their own private supply)</li> <li>▪ Onsite recreational activities cause congestion</li> <li>▪ No CASA compliant helicopter landing site (currently in discussion with CoB)</li> <li>▪ Frequency of CTAF – separate frequency could be useful for Emergency Services/RFDS</li> <li>▪ Privacy screening for emergency services during transfer situations from public/media viewing</li> <li>▪ Lack of light aircraft itinerant parking</li> <li>▪ Noise from nearby motorsport activities can be an issue for onsite emergency service shift workers</li> <li>▪ Lack of public toilets Landside</li> </ul>	<ul style="list-style-type: none"> <li>▪ Main runway extension</li> <li>▪ Installation of cross runway (800m regarded as sufficient length)</li> <li>▪ Flight training schools expansion</li> <li>▪ Increase in General Aviation/Recreational user demands for Bunbury Airport with the expansion and more defined focus at Busselton Airport</li> <li>▪ Relocation of water bombers; ability to provide direct access to runway</li> <li>▪ Airpark development</li> <li>▪ Direct taxi-way for emergency services @ eastern end of runway</li> <li>▪ Jet A1 fuel as a permanent supply tank and bowser or permanent truck on site</li> <li>▪ Establishment of General Aviation Centre for the South West of Western Australia</li> <li>▪ High School/TAFE Aviation Training Course (e.g. Manea College)</li> <li>▪ DBCA require new hangar for detection aircraft (by 2020, preference is to lease)</li> <li>▪ ‘Marque Emergency Service Facility’ – expand to Emergency Service Training Facility, idea to establish a National Centre for Emergency Response at Bunbury Airport</li> <li>▪ Additional aviation economic activities to provide interest, income and opportunities</li> <li>▪ Tourism and recreation opportunities</li> <li>▪ Cost effectiveness</li> <li>▪ Commercial space for complementary/ancillary uses</li> <li>▪ On-site (short-term) accommodation for students, tourists or aircraft users</li> <li>▪ Dual apron/double parking to enable two ambulances with direct access for patient transfer at Emergency Transfer Facility</li> <li>▪ Potential Solar Farm as an interim land use on Lots 14 and 120</li> <li>▪ Public viewing area and toilets</li> <li>▪ Facility/Rec Room for Emergency Services personnel and volunteers on break during emergencies.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Remnant vegetation on site and adjoining the airport may constraint expansion</li> <li>▪ Congestion on taxiway by vehicles parked in front of hangars</li> <li>▪ Bush Fire Prone Land – no buffer to the airport nor sufficient management plans in place</li> <li>▪ Increase usage of airport could cause problems with emergency operations</li> <li>▪ AWIS site needs a 30 m separation buffer (no vegetation or infrastructure within this buffer) – needs to be considered with any expansion plans</li> <li>▪ Additional users – parachutes/gliders need to be located with consideration to airspace/landing and take-off paths</li> <li>▪ Runway 25 instrument approach is through the flight training airspace</li> <li>▪ Ongoing maintenance of key infrastructure</li> <li>▪ East end of runway is unlit</li> <li>▪ Any move to revise the ‘peppercorn’ lease fee for the St John Ambulance facility</li> <li>▪ Residential development encroaching on airspace</li> <li>▪ Airport expansion may have additional noise impacts on and off-site</li> <li>▪ Steam stack emissions from the timber processing operations to the south-east Laminex Kilns may cause visual impacts for future flight paths if airport is expanded across the South Western Highway (depending on runway orientation)</li> </ul>



- The study identified a number of reasons put forward for the increased popularity of RAAus aircraft over the past three decades compared to VH- registered aircraft:
- Less expensive way of getting into flying
- An increasing number of relatively inexpensive ultralight aircraft on the market
- Lower ongoing operating and maintenance costs
- Lower medical standards - equivalent to a driver's licence - lets people stay flying
- Less expensive way of building up hours to advance to larger aircraft
- Increased array of (non-commercial) activities permitted in RAAus aircraft.

key user at Bunbury, pilot training at Busselton is limited by the commercial air transport services, airspace requirements and noise restrictions. Accordingly, Bunbury Airport has significant potential for general aviation growth, including pilot training.



**Population growth**

The resident population of Bunbury Geographe has continued to grow in recent decades, with the rate of growth slowing or accelerating according to the prevailing economic conditions. Both the Southwest Regional Blueprint (SWDC et al, 2014) and the Bunbury Geographe Regional Growth Plan (Growth Plan Partnership, 2016) support an aspirational population for Bunbury Geographe of 300,000 people by 2050. Given the existing population of 91,400, the aspirational growth target is ambitious and will require concerted political, economic, social and governance effort to achieve this. A related priority initiative is an interventionist Second City Policy to encourage increased decentralisation and the diversion of some forecast growth from Perth-Peel to Bunbury Geographe.

Whilst the Busselton-Margaret River Regional Airport will continue to offer general aviation services, its principal focus is higher-order commercial air transport services, including regional, inter-state and international RPT, charters and freight operations. In light of this, some general aviation previously based at Busselton has relocated to Bunbury Airport and this trend is forecast to continue. Similarly, while pilot training is a

**Monitoring airport usage**

Changes to the MOS139 mean that 'registered' airports will be converted to 'certified' airports to conform to ICAO standards. The new standard provides for a number of 'bands' based on numbers of passengers and aircraft movements. On a commercial basis, companies such as Avdata record the numbers and details of aircraft movements, however the cost of obtaining information from such continuous monitoring needs to be balanced against the benefits.

Rather than continuous monitoring, a cost-effective option is to engage a suitable company every few years (or when updated data is needed) to record the number of traffic movements and aircraft types for a set period (e.g. three-month, six-month or 12-month period). This would enable regular monitoring of usage patterns and assist with forecasting future operations.

**Recommendation 2:** Every few years (or when updated data is needed), the City of Bunbury engage a suitable company to record the number of air traffic movements and aircraft types for a set period (three-month, six-month or 12-month period).

**Centre of Excellence for Emergency Management**

Bunbury Airport is well placed to build on its existing emergency management capabilities to become a nationally recognised Centre of Excellence for Emergency Services Management. The existing facilities are unique to regional Western Australia, with fire fighting and RFDS patient transfer recently joined by the purpose-built 24/7 helicopter rescue facility (the first outside the metropolitan area).

Together, these form the nucleus of an emergency management centre that can become a model for other regions and a centre of excellence for training and research in rural and remote fire, rescue and emergency management.

**Recommendation 3:** Bunbury Geographe Airport to become a 'marque' Centre of Excellence for Emergency Services Management including training and research in rural and remote fire, rescue and emergency management.

**2.6.2 Aerodrome Reference Code System**

Consistent with the longstanding reservation of the airport land under the GBRS, it is intended that the existing runway be extended to 1530 m length and widened to 23 m.

Code 3 runways have an aerodrome reference field length of 1200 m up to but not including 1800 m. with a minimum runway width of 30 m. As an upgrade to 23 m wide is proposed for the foreseeable future, the applicable Aerodrome Reference Code number is Code 2.

As the intended wing span is 15 m up to but not including 24 m and the outer main gear wheel span is intended as 4.5 m up to but not including 6 m, the appropriate element 2 reference code is Code B.

Accordingly, the proposed upgraded runway would be Code 2B.

Ultimately, should the extended runway also be widened to 30 m, then the applicable code would be Code 3C.

A future cross-runway (designed to Code 1B) is also proposed to provide greater flexibility under different wind conditions.

### 2.6.3 Selected Design Aircraft

The proposed upgraded runway (extended to 1530 m length and widened to 23 m) would have an Aerodrome Reference Code of 2B. This will be suitable for larger aircraft for private and commercial charter activities, such as the twin-turboprop Beechcraft King Air 350 (11 seats) and the Fairchild SA-226 Metro II (19 seats). It will also suit small jet aircraft such as the Cessna Citation (4-10 seats), Embraer Phenom 300 (7-9 seats) and Bombardier Challenger 605 (9 seats).

Ultimately, should the 1530 m runway be widened to 30 m, this would enable use by aircraft such as the twin-turboprop Jetstream 31 (18 seats) and Bombardier Dash 8-100 (36 seats).

The proposed Code 1B cross-runway would be suitable for a wide range of smaller general aviation aircraft such as the Cessna 172P Skyhawk and Piper Cherokee PA-28 (4 seaters) and the Piper Meridian PA-46 (6 seats) as well as the AT-802 Air Tractor used for bushfire fighting purposes.



Fairchild SA-226 Metro II



Embraer Phenom 300

### 2.6.4 Navigation Systems

Bunbury Airport (registered under IATA as BUY and under ICAO as YBUN) operates Runway 07/25 as a Code 1B non-precision instrument approach runway served by visual aids and a non-visual aid providing at least directional guidance adequate for a straight-in approach.

It has non-precision approach markings, Illuminated Wind Indicator (windsock) and pilot-activated LED runway lighting. Being a non-controlled aerodrome, CASA recommends the use of 'standard' traffic circuit and radio broadcast procedure by radio-equipped aircraft. Pilots have access to Common Traffic Advisory Frequency (CTAF).

### 2.6.5 Aviation Support and Landside Facilities

#### Mechanical facilities

The airport hosts a Licensed Aircraft Maintenance Engineer providing maintenance, repair and overhaul from throughout the South West from a specialised workshop with three full time employees.

#### Water bomber water tank

A 170,000L water tank provides a water supply for re-filling Water Bombers (AT802 Air Tractors) and helicopters used for firefighting. The tank has a governed slow re-fill due to limited mains capacity, however according to DBCA this worksadequately.



AT802 Air Tractor water bombers are based at Bunbury Airport each summer

### Meteorological facilities

The recently installed Automated Weather Information Station (AWIS) on Lot 120 South Western Highway (land owned by the City of Bunbury) is operated and maintained by DFES.

### 2.6.6 Security Requirements

Bunbury Airport requires airside access permits made pursuant to MOS139 and Civil Aviation Rules 89. Fencing separates airside and landside areas. Airside access is controlled via two swipe card vehicle access gates and keypad activated personnel gates. The objective is to ensure that priority is given to aircraft on the runway, apron and taxiways by providing aerodrome facilities and maintaining aerodrome environments that are safe for aircraft operations. This is achieved by pro-active safety management and complying with civil aviation prescribed standards and procedures.

### 2.6.7 Airspace Protection Surfaces

Chapter 7 of the MOS139 defines the standards that control the airspace around an aerodrome. Obstacle Limitation Surfaces (OLS) are a series of 'surfaces' that set the height limits of objects around an aerodrome.

An aerodrome operator must establish the OLS applicable to the aerodrome. For a non-instrument and non-precision instrument runway the OLS that must be established are the conical surface, inner horizontal surface, approach surface, transitional surface and take-off climb surface.

Objects, except for approved visual and navigational aids, must not be located within the OLS area of an aerodrome without the specific approval of CASA.

The physical dimensions of the OLS surfaces, for approach runways, must be determined using MOS139 Table 7.1-1: Approach Runways. An annual take-off survey is carried out including PANS-OPS.



### 2.6.8 Aircraft Noise Contours

Australian Noise Exposure Forecast (ANEF) is a cumulative measure of aircraft noise exposure as endorsed by Airservices Australia and as amended from time to time. According to Infrastructure Australia, the Australian Noise Exposure Forecast (ANEF) was developed through a major socio-acoustic survey carried out in the vicinity of a number of Australian airports in 1980.

ANEF takes into account the following features of aircraft noise:

- the intensity, duration, tonal content and spectrum of audible frequencies of the noise from aircraft take offs, approaches to landing, and reverse thrust after landing;
- the forecast frequency of aircraft types and movements on the various flight paths; and
- the average daily distribution of aircraft arrivals and departures in both daytime and night time. (Daytime is defined as being between the hours of 7.00am and 7.00pm.)

The ANEF system was developed as a land use planning tool aimed at controlling encroachment on airports by noise sensitive buildings. The system underpins Australian Standard AS2021 'Acoustics— Aircraft noise intrusion—Building siting and construction'. The Standard contains advice on the acceptability of building sites based on ANEF zones.

The acceptability criteria vary depending on the type of land use with an aircraft noise exposure level of less than 20 ANEF being acceptable for the building of new 'noise sensitive premises' such as residential dwellings, schools and hospitals.

There is existing ANEF mapping for Bunbury Airport based on the largest aircraft presently able to use runway 07/25. Given the proposed cross runway, anticipated growth in airport usage and the potential for changes in land use or intensification in surrounding areas, it would be prudent to undertake a further ANEF assessment.

### 2.6.9 Environmental and Heritage Sites

#### Potential Contaminated Site

The City of Bunbury's Lot 14 and Lot 120 located east of the South Western Highway are included on the Department of Water and Environmental Regulation (DWER) Contaminated Sites Database as a Potential Contaminated site based on reported anecdotal knowledge of previous pesticide use in agriculture on the land. Soil testing is required to confirm the presence or absence of such contamination and any necessary remedial action.

**Recommendation 4:** Commission soil testing to confirm the presence or absence of pesticide contamination on Lot 14 and Lot 120 east of the South Western Highway and any necessary remedial action.

Aboriginal Heritage sites 19795 and 4873 are mentioned at 2.2.9 above. As portion of the subject land east of the South Western Highway is on land within or adjacent to these sites, it is recommended a Noongar Standard Heritage Agreement (NSHA) is entered into. In addition, an 'Activity Notice' should be issued under the NSHA, if there is a risk that an activity will 'impact' (i.e. by excavating, damaging, destroying or altering in any way) an Aboriginal heritage site. The Aboriginal Heritage Due Diligence Guidelines, referenced by the NSHA, provide guidance on how to assess the potential risk to Aboriginal heritage.

**Recommendation 5:** Detailed investigation of Aboriginal Heritage site 19795 should be undertaken in accordance with the Aboriginal Heritage Due Diligence Guidelines prior to any detailed planning or developmental works associated with the Master Plan. A Noongar Standard Heritage Agreement (NSHA) should be entered into and an 'Activity Notice' issued under the NSHA if there is a risk that an activity will impact the site.

## 3 AIRPORT MASTER PLAN

### 3.1 Facilities Development Plan

Planning for facilities development is central to the Master Plan. Calibre carried out extensive investigations and stakeholder consultation prior to preparation of a preliminary concept plan ("Concept Plan") - (refer Figure 7: Preliminary Concept Plan).

Whilst there was significant merit in the Concept Plan, it was dependent on realignment of the South Western Highway through construction of the Davenport Link connecting the South Western Highway to Willinge Drive (Port Access Road). This would necessitate an additional bridge over the Preston River.

However, feedback from State Government agencies in relation to planning for the Bunbury Outer Ring Road (BORR) advised that the proposed Davenport Link will not be funded as part of the BORR project.

Therefore, pending future detailed examination of regional road access to the Port of Bunbury and the City Centre, there is no short to medium-term prospect of the Davenport Link being developed.

Consequently, there is little short to medium-term prospect of the South Western Highway adjacent the airport being realigned, which has the following flow-on effects for the short to medium-term future:

- the main runway cannot be extended eastward
- a cross-runway together with associated Air Park lots and airport-related industry cannot be developed to the east of the existing South Western Highway alignment.

At the City of Bunbury's request, Across Planning has further investigated the airport development opportunities at or adjacent the existing airport situated west of the South Western Highway. Those investigations indicate the possibility of developing an 800m-long cross-runway on a north/north-west by south/south-east axis, together with taxi-ways, new hangar sites, airport-related industry site and public carpark and viewing area

(refer Figure 8: Bunbury Geographe Airport Master Plan 2020-2040).

**Recommendation 6:** The City of Bunbury endorse the plan entitled Bunbury Geographe Airport Master Plan 2020-2040 as the guide to land use and airport facilities development over the 20-year period to 2040.

This section outlines the main elements examined for the Concept Plan and proposed Master Plan.

In accordance with the Regional Airport Master Planning Guidelines (Australian Airports Association, 2014) facilities are described below under the headings of Movement Area Facilities, Aviation Support Facilities and Other Facilities.

#### 3.1.1 Movement Area Facilities

##### Main Runway

Commensurate with the needs of the State's Second City for a first-rate General Aviation airport, and the existing reservation under the GBRS, it is proposed that in the medium-term future the existing runway be upgraded by extending it to 1530m length and widening it to 23m to Aerodrome Reference Code 2B.

Ultimately, should the 1530m runway be widened to 30m, then the applicable code would be Code 3C.

**Recommendation 7:** In the long-term, plan to upgrade the main runway of Bunbury Geographe Airport in the medium-term future to 1530 m long and 23 m wide with an Aerodrome Reference Code of 2B.

##### Cross-Runway

A future cross-runway is proposed to provide greater flexibility, safety and reliability under different wind conditions. The cross-runway will be particularly beneficial to smaller aircraft more susceptible to the effects of cross-winds, including aircraft used for pilot training and recreational use.

Emergency services aircraft including the Air Tractor water bombers will also benefit from the increased flexibility, as presently they occasionally have to transfer their operations to another aerodrome due to unfavourable cross-winds at Bunbury.

In addition, the cross-runway will facilitate an opportunity for development of significant additional hangars where private recreational aviation enthusiasts and other aircraft owners will be able to lease a hangar with direct taxiway access on one frontage and road access on the opposite frontage.

The Concept Plan showed a potential Air Park associated with a cross-runway predominantly on private land (Lot 81) to the east of the South Western Highway. Airpark Lots are designed with vehicle access on one frontage and direct taxi-way access on the other frontage.

There are a limited number of Airparks already existing in Australia (e.g. Temora NSW, Yarromine NSW, Gatton QLD and Yarrowonga VIC), and such developments are commonplace in other parts of the world, including the USA.

However, there is little prospect of the cross-runway being developed east of the South Western Highway. The potential for developing Air Park lots adjacent the proposed cross-runway west of the South Western Highway is constrained by conservation areas and they have not been included in the Master Plan (refer: Figure 8 Master Plan 2020-2040).

**Recommendation 8:** In the short to medium-term, plan for a cross-runway 800 m long and 18 m wide with an Aerodrome Reference Code of 1B to provide an alternate runway, particularly when strong cross-winds adversely affect the main runway.

##### Taxiways, aprons and aircraft parking areas

The Master Plan identifies additional taxiways/lanes for the short, medium and long-term. Short-term, a taxi-lane extension is required to service around six new hangar sites identified at No 4. A new taxiway is proposed on the southern side of the proposed main runway, which could later be extended further eastward together with the future runway extension.



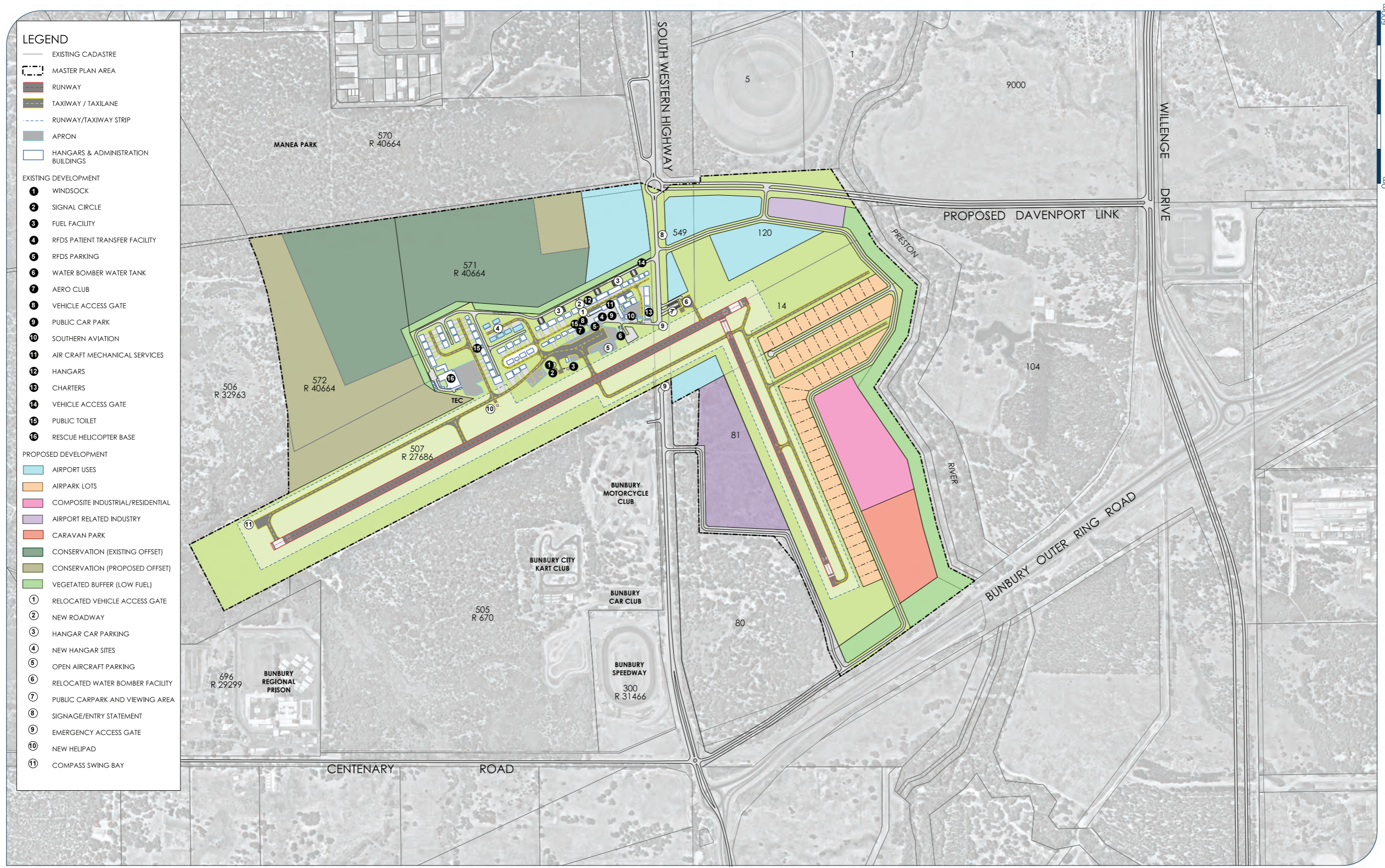
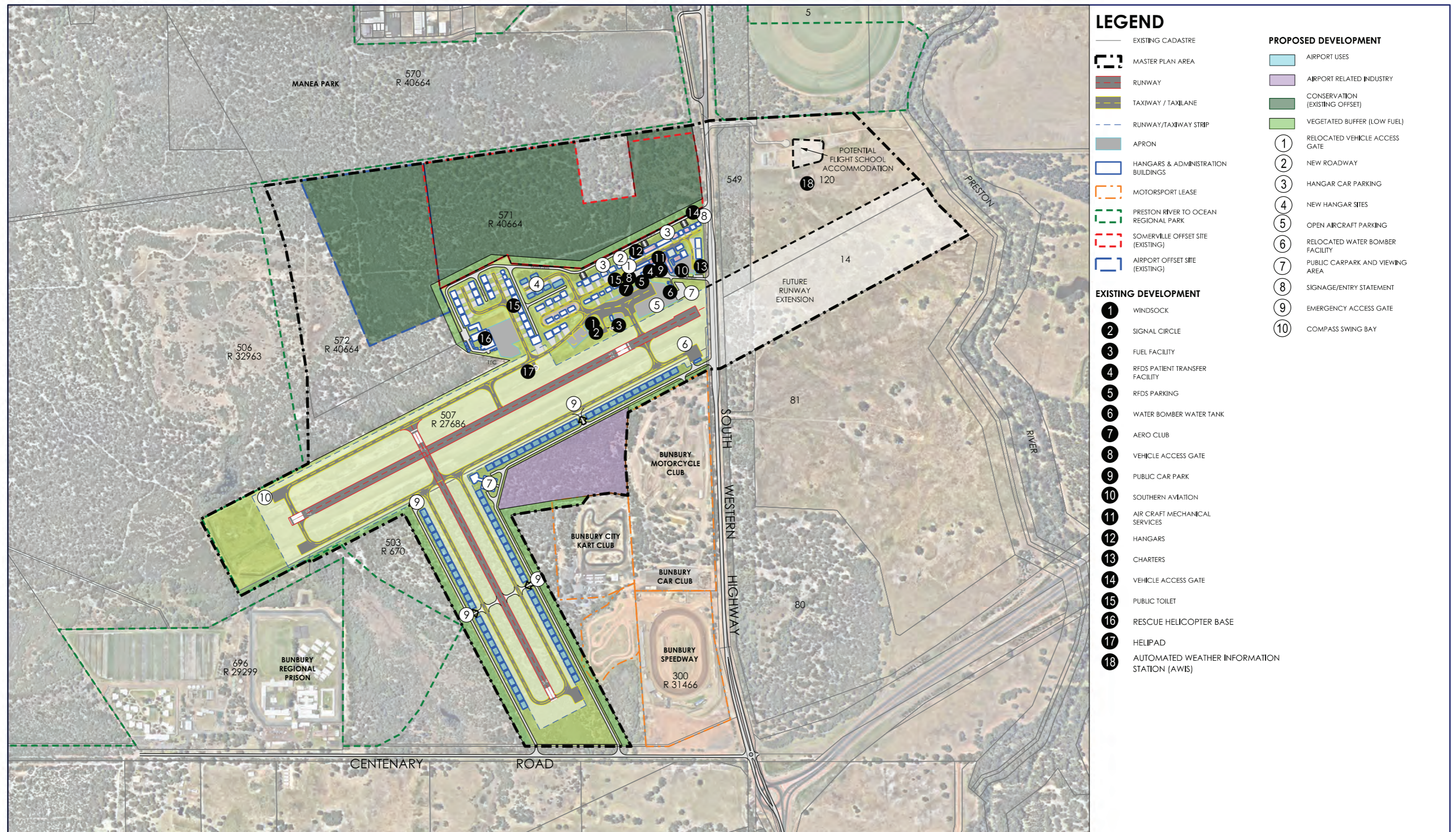


Figure 7: Preliminary Concept Plan





This plan has been prepared for planning purposes. Areas, contours and dimensions shown are subject to survey.

Figure 8: Bunbury Geographe Airport Master Plan 2020-2040



When the cross-runway is developed, a parallel taxiway is also proposed on either side enabling efficient use and direct access from hangars.

The strategic focus of the Master Plan means that only indicative locations for short-term new and extended aprons and aircraft parking areas are identified. Further investigation will be required in future Airport Development Plans to determine the actual need, location and size of additional aprons and aircraft parking areas.

**Recommendation 9:** Airport Development Plans implementing the Master Plan should include the progressive development of new taxiways to service the existing and upgraded runway, the future cross-runway and proposed new hangars.

### Lighting

Existing LED pilot-activated runway lighting is of a high standard, however general airport landside lighting needs upgrading to improve security and for the convenience of airport users.

**Recommendation 10:** Include an upgrade of general landside lighting in the Bunbury Geographe Airport Development Plan.

## 3.1.2 Aviation Support Facilities

### Fuel facilities

Although the airport has an existing Avgas bowser for general use, the only jet fuel (Jet A1) bowser is owned by DBCA and dedicated to their operational needs only, such as helicopters used for firefighting purposes. Other aircraft requiring Jet A1 fuel (i.e. turbine engine aircraft) are reliant on fuel pumped from 200 litre drum storage. As demand increases for aircraft using jet fuel, a Jet A1 fuel bowser should be installed (additional to the existing dedicated DBCA jet fuel facility).

**Recommendation 11:** Provide for installation of a Jet A1 fuel bowser in the Bunbury Geographe Airport Development Plan (additional to the existing dedicated DBCA jet fuel facility).

### Aircraft hangars

Of the 70 existing hangar sites available for lease, only five sites remain available at the time of writing. Re-development of some of the older hangars would increase the number of hangars and available floorspace, however there is also a need for land for new hangars to meet future demand.

In the short-term, additional hangars can be developed adjacent the existing hangars west of the South Western Highway (refer to Site 4 in Figure 9: Master Plan - Enlargement). Approximately 24 new hangars can be developed on the south side of the main runway. Once the cross-runway is built, provision is made for additional hangars on either side of the runway (49 in total).

**Recommendation 12:** The Master Plan and Airport Development Plans provide for additional leasehold hangar sites.

### Airport Uses

In the short-term, the proposed new hangar area identified at Site 4 is an example of 'Airport Uses'. Although six hangars are shown, the actual number will be determined following more detailed planning. However, the vast majority of the 'Airport Uses' area will not be required until the medium-term and long-term. Future Development Plans and adjustment of the Master Plan over time will identify the actual usage, but will typically include:

- additional aircraft hangars
- operations and administration buildings
- fuel facilities
- aircraft maintenance
- airport related commercial premises
- visitor facilities.

In the short-term, a public viewing area and associated car park is proposed overlooking the main runway near the entry road off the South Western Highway. Once the cross-runway is built, it is proposed that a second public viewing area be developed with a vantage point allowing viewing of aircraft movements on both runways.

### Airport Related Industry

An area of some 5.3 ha south of the main runway and immediately west of the Bunbury Motorcycle Club site is identified for 'Airport Related Industry'. Future Development Plans and adjustment of the Master Plan over time will identify the actual usage of the site, but it is intended to accommodate a range of light and general industry uses related to general aviation. These will typically include:

- aircraft equipment, servicing and repairs
- warehousing and logistics
- emergency management equipment
- servicing of land-based aerodrome vehicles and equipment
- metal fabrication.

**Recommendation 13:** Set aside the area identified for Airport Related Industry to accommodate a range of light and general industry uses related to general aviation.

### Navigation aids

The existing Illuminated Wind Indicator (IWI) requires an elevated work platform and trained operator to be brought in whenever the windsock or one of the floodlights require replacement. Contemporary IWI have hinged posts that eliminate the need for elevated platforms and allow the Airport Officer to undertake replacements without external assistance. New IWI cost in the order of \$9,750 (ex. GST) and adding a concrete base and electrician expenses would bring the cost to around \$15,000 (ex. GST). It is recommended the existing IWI be replaced in the 2020-25 timeframe.



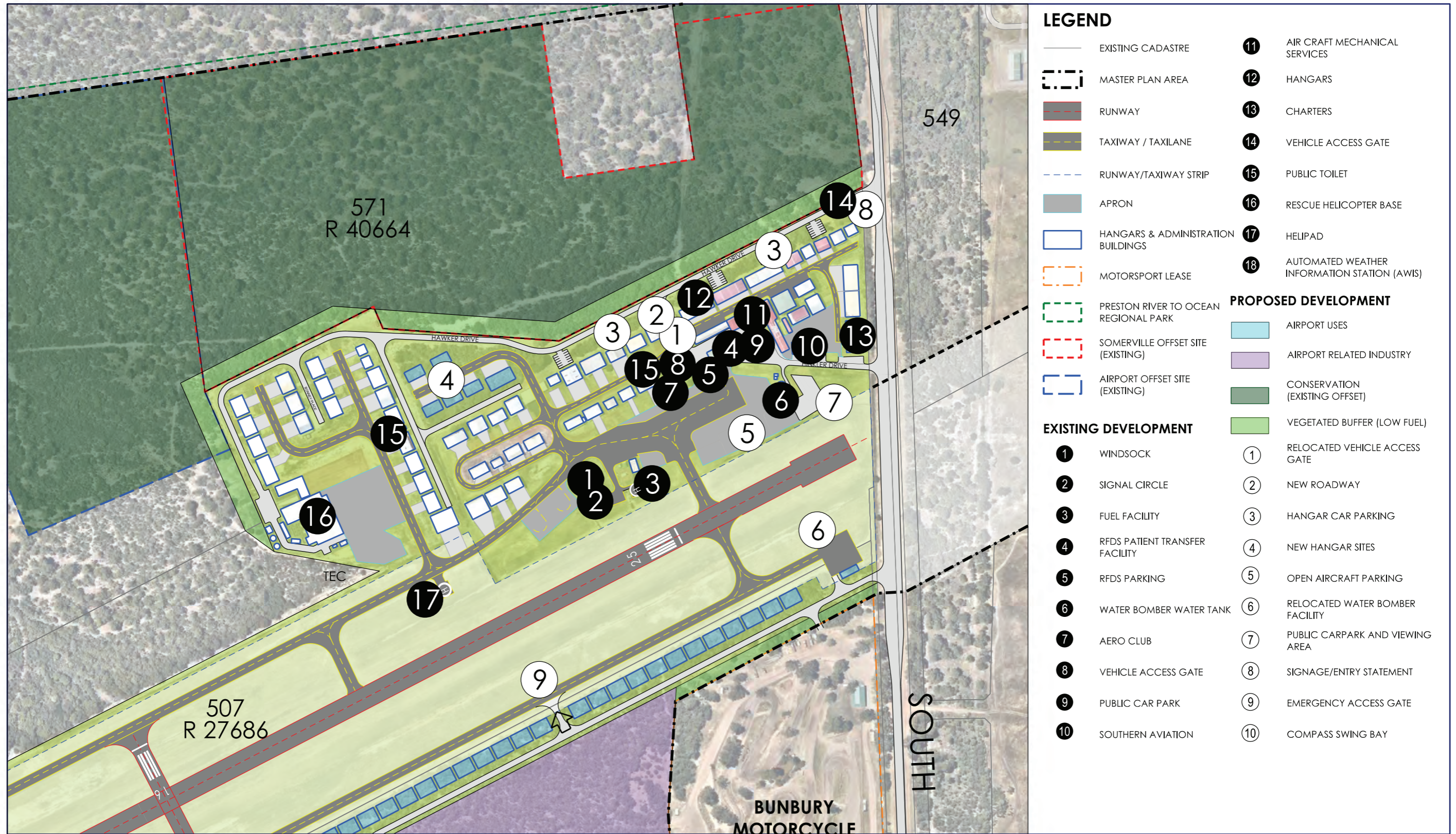


Figure 9: Master Plan – Enlargement



**Recommendation 14:** Replace the existing illuminated wind indicator with a hinged post model during the 2020-25 timeframe.

**Compass Swing Bay**

A Compass Swinging Site is a prepared area with minimum magnetic abnormalities on which an aircraft may be oriented (or swung) to various headings, for the purpose of checking the aircraft on-board compass system(s). Sites should be located well away from any structures likely to cause any large magnetic effects.

According to CASA Advisory Circular AC 139-15(0), the site should be at least 200 m from large magnetic effects such as steel hangars and 100 m from power and communications cables (above or below ground), other aircraft, and other objects that contain ferrous material.

Site No 10 on the Master Plan fulfils the above-mentioned criteria and is also a cost-effective location to install a Compass Swing Bay because it utilises the existing run-up bay near the threshold of Runway 07.

**Recommendation 15:** The Master Plan and Airport Development Plans provide for installation of a Compass Swing Bay for the purpose of checking the on-board compass systems of aircraft.

**Meteorological facilities**

In 2018, Airservices Australia installed a weather camera at the airport, which complements the AWIS weather station operated and maintained by DFES. The weather camera has an expected lifespan of 10-15 years, with the airport operator (City of Bunbury) being responsible for future replacement.

**Recommendation 16:** A future Development Plan for the Bunbury Geographe Airport allow for replacement of a weather camera by the year 2030.

**Airside security access**

The Airport Reporting Officer issues airside security cards to personnel requiring regular airside access (i.e. inside security

fencing). St John Ambulance and other emergency services personnel who need to access the RFDS patient transfer station and RFDS aircraft obtain key pad access using a security code.

Feedback received from some airport users was that less frequent visitors (such as ambulance drivers that may travel from more distant parts of the region to the airport) may not know the security code. All emergency services personnel likely to require access should be given the security code(s).

**Recommendation 17:** All ambulance personnel and other emergency services personnel operating in the Bunbury Geographe and wider region likely to require access to the RFDS patient transfer facility and airside at the airport be issued with the security access code(s).

**Emergency access gates**

Once new hangars are built south of the existing main runway, it is proposed that an emergency access gate be installed to enable vehicle access across the runway strip in times of emergency, such as uncontrolled bushfire approaching from the south, west or east (Site 9 on the Master Plan). Once the proposed cross-runway is built, three additional emergency access gates are proposed to assist with public evacuation if required.

Similarly, in the long-term, extending the main runway to 1530 m length is dependent on realignment of the South Western Highway using the proposed Davenport Link to Willinge Drive and closure of portion of the existing highway reserve from a point near the intersection of Hinkler Drive (main airport access) and a point on the southern boundary of Lot 507 (existing airport land).

When this occurs, it is proposed that emergency access gates be installed on both sides of the main runway strip to enable vehicle access in times of emergency, such as the need for evacuation of the motorsport facilities to the south or the airport itself should there be an major bush fire approaching, for example. Although all landholdings in the area have at least a single road access, the provision of a secondary access is strongly recommended.

**Recommendation 18:** The Master Plan and Airport Development Plans provide for installation of emergency access gates at Site 9 on the Master Plan plus on either side of the main runway strip following runway extension and associated realignment and partial closure of the South Western Highway.

**3.1.3 Other Facilities**

**Access roads**

Several new access roads are identified in the Master Plan, including at Site 2 where future relocation of existing Hangar 50 would be needed to provide for a road connection between Hinkler Drive to Hawker Drive via the public car park area. Together with a relocated vehicle access gate, this will improve vehicle connectivity between the eastern and western parts of the existing airport.

Two new access roads are proposed to service the new hangars on the south side of the main runway and either side of the cross-runway. Both roads connect to Centenary Road.

Commensurate with future extension of the main runway across the existing alignment of the South Western Highway, it is proposed that a new road be developed that 'loops' around the eastern extremity of the expanded airport near the Preston River foreshore, to maintain suitable road access to Lot 81 (privately owned), preferably connecting to Centenary Road.

Future realignment and partial closure of the South Western Highway will enable downgrading of the section of highway providing access to the motorsport clubs and Lot 80 (proposed industry) and remove the need for Main Roads WA to construct the planned grade separated interchange at the existing intersection of the South Western Highway and the proposed Bunbury Outer Ring Road.

This downgrading should also enable a four-way intersection (roundabout) at the junction of Centenary Road and the proposed new road, with minimal disruption to remnant vegetation at the southern end of Lot 80. This direct



connection to Centenary Road will also help minimize extra travel time for motorists accessing the Bunbury Regional Prison when portion of the South Western Highway is closed.

**Recommendation 19:** The Master Plan and Airport Development Plans provide for the planning and development of new access roads as shown in the Master Plan.

#### Vegetation Offset Areas

Similar to the existing offset areas identified in Figure 5: Bunbury Airport Environmental Context, it is recommended that additional remnant vegetation areas under City of Bunbury control be investigated as offsets for areas proposed to be cleared for airport purposes.

**Recommendation 20:** Additional remnant vegetation areas under City of Bunbury control be investigated as offsets for areas proposed to be cleared for airport purposes.

#### Low Fuel Vegetated Buffer

The existing airport is vulnerable to bushfire, especially from bushfire prone land immediately north and west. Bushfire hazard assessment should be undertaken in accordance with State Planning Policy 3.7 Planning in Bushfire Prone Areas and the related Guidelines. Subject to the outcomes of a Bushfire Attack Level (BAL) assessment, the Master Plan identifies an indicative Low Fuel Vegetated Buffer. As a minimum, this buffer should be subject to regular hazard reduction.

Adjacent the Preston River, it is suggested that the strip of foreshore land reserved under the GBRS as Regional Open Space for the purposes of revegetation and flood management, also be managed as a low fuel zone. Similarly, the previously proposed environmental linkage between Lot 80 and the Preston River should be managed as a low fuel vegetated buffer.

**Recommendation 21:** Low Fuel Vegetated Buffers be provided in the locations identified in the Master Plan, subject to the outcomes of BAL assessment.

#### Utility Services

The strategic focus of this Master Plan is too high-level for specific analysis of future utility requirements. Investigation of future airport utility services requirements should be undertaken in association with other landowners, particularly owners of land zoned for industrial purposes.

**Recommendation 22:** Investigation of future airport utility services requirements should be undertaken in association with nearby landowners.

#### Airpark and Caravan Park and Camping Ground

The Preliminary Concept Plan (refer Figure 7) identified a potential Airpark comprising freehold lots of approximately 25m wide x 50m deep to the east of the cross-runway (east of the South Western Highway).

The Preliminary Concept Plan also proposed development of a Composite Industrial/Residential area that could provide for limited light industrial and storage uses at the rear, with a dwelling at the front. These dwellings would face the dwellings in front of the hangars in the Airpark lots opposite, thereby creating a 'special' residential amenity for people seeking a particular lifestyle.

A 4ha Caravan Park and Camping Ground was identified immediately south of the Composite area. Such facility could be developed similar to one existing at Temora Airport in NSW, a regional airport well known for aviation events where aviators and other visitors come from far and wide. The facility could be used by competitors and patrons of the nearby motorsport venues, some of whom arrive with campers, large trailers and equipment. Some of the visitors attracted to events at the airport could also choose to stay close by at the caravan and camping ground.

Similar to the Composite area, this site would require special conditions due to the likelihood of incidences where allowable noise levels under the Environmental Protection (Noise) Regulations would be exceeded.

The Master Plan (refer Figure 8) now proposes development of the cross-runway to the west of the South Western Highway, where there is insufficient suitable land for a caravan park and camping ground.

### 3.2 Financial Considerations

The strategic nature of this Master Plan excludes detailed examination of airport finances including airport incomes, expenditure and the reserve fund which is more appropriately dealt with in the Airport Development Plan(s). However, there are several financial considerations that influence strategic planning for the airport, as discussed below.

The existing Development Plan includes an asset plan showing capital assets, suggested maintenance years and costs. Financial figures for the period 2014/15 (actual) to 2016/17 (forecast budget) show that, generally speaking, operating income is matching operating recurrent expenditure.

However, income (derived from hangar and other property lease fees) is insufficient to meet the needs for larger capital works projects, including some projects eligible for part funding under the State Government's Regional Airports Development Scheme (RADS) normally on a matching \$ for \$ basis.

As recommended in the 2010-2015 Master Plan, an Airport Reserve Fund has been established. The Reserve Fund has received the transfer of some lease income identified for expenditure on projects such as resealing airport bitumen taxiways and runways and management of environmental offset sites.

The 2010-2015 Master Plan identified two potential major sources of income to be dedicated to the Airport Reserve Fund:

- net funds from selling the City's freehold land located east of the South Western Highway (Lots 14, 120, 549)
- net funds from creating and selling Airpark lots on the southern side of the existing airport (with access adjacent the Bunbury Motorcycle Club's Shrubland Park site).



For reasons explained earlier in this report, selling the bulk of the City's Lots 14, 120 and 549 is not recommended as this would prevent airport expansion as provided for under the GBRS. Creating Airpark lots on the southern side of the existing airport is also not recommended, as without additional clearing the lots would be too close to the main runway and vehicle access would be problematic, especially if the highway is realigned.

With those revenue sources being unavailable, alternatives need to be investigated. These could include revenue from:

- leases of additional hangar sites adjacent the existing hangars
- leases of temporary land uses on Lot 14 and Lot 120 that would not jeopardise the proposed airport expansion to the east
- leases of potential expansion of airport and airport-related commercial uses north-east of the existing airport (Lot 571)
- leases of potential airport, airport-related commercial and airport-related industrial uses on portion Lots 120 and 549
- net funds from the sale of Airpark lots along portion of the southern side of Lot 14.

Leaseholders at the airport are subject to payment of local government rates separate from lease fees. The majority of Australian airports combine rates and lease fees, however the City of Bunbury presently levies rates and lease fees separately.

During stakeholder engagement, it was mentioned that whilst revenue from lease fees is identified as airport income, revenue from rates collected from airport properties is not being identified as airport income. This does not represent a true reflection of airport income and may adversely impact the perception of its financial sustainability.

In order to add more clarity and self-determination to financial management of the Bunbury Airport, there is merit in the City of Bunbury adjusting the current arrangements to enable the airport to function as an independent business unit.

### Landing Fees

Landing fees are currently not collected at Bunbury Airport. Throughout Australia, airport practices in relation to landing fees vary widely. Many charge landing fees, but there is considerable variation in the scales of fees applied and some do not charge any landing fees.

For the 3-month period December 2008 to February 2009, Avdata Australia evaluated landings at Bunbury Airport and carried out a trial billing. During the evaluation period, total usage was 3278. Of these, 131 were RFDS flights that were exempt from landing fees (in common with other airports) resulting in 3147 total landings potentially liable for fees. However, 981 (31%) were usages by unidentified aircraft.

There are various reasons for usages by unidentified aircraft at aerodromes, including pilots failing to report the flight or using incorrect aircraft registration numbers to avoid incurring fees. However, the main reason is the dual aircraft registration system. Many airports in Australia use the services of companies like Avdata Australia to record flights via monitoring of airport radio communications. Flights by VH registered aircraft are readily captured and Avdata can issue invoices on behalf of the airport (on a commercial basis – i.e. the airport pays for this service).

Flights by RAAus registered recreational aircraft are not invoiced by companies like Avdata because data on RAAus registered aircraft are not available to them. This means that a significant proportion of airport usages are not paying landing fees to airports that seek to collect them.

During the above-mentioned trial period at Bunbury Airport, 179 statements were generated at a total value of \$37,363. Avdata's various commercial fees and charges amounted to \$4,850 meaning that the net value was \$32,513.

Under the 2010-2015 Master Plan and Airport Development Plan, at the Bunbury Airport lease fees for hangars has been the preferred main source of income rather than landing fees. This is administratively straight forward and does not require engaging an external party.

Calibre's stakeholder engagement revealed a generally high level of satisfaction with lease fees rather than landing fees. The absence of landing fees is viewed as contributing to Bunbury's Airport's reputation as a 'friendly and welcoming airport' and a 'point of difference' that is helping attract additional aviation traffic. For example, the Busselton-Margaret River Regional Airport charges landing fees and anecdotally this has contributed to some light aircraft owners relocating to a hangar at Bunbury Airport.

The pilot training organisations at Bunbury Airport utilise the absence of landing fees as a marketing advantage to attract student pilots from outside the Bunbury Geopraphe region. This results in additional employment opportunities for flight Instructors, aircraft maintenance and refuelling, accommodation and administration.

Another factor is the relationship between landing fees and impact (wear and tear) on the runway surface. Larger aircraft have most impact on the pavement surface, which can hasten the need for maintenance, re-surfacing and replacement. Presently, the most frequent flights at Bunbury Airport by larger aircraft (up to 5,700kg) are made by emergency services aircraft (RFDS and water bombers) which are normally exempt from landing fees at all aerodromes. On the other hand, the most frequent flights by smaller aircraft are for pilot training and these lighter aircraft have a comparatively reduced impact on the runway pavement.

Overall, there is presently no compelling case for the introduction of landing fees, however new sources of revenue for the Airport Reserve Fund should be investigated.

**Recommendation 23:** New revenue sources for the Airport Reserve Fund be investigated.

**Recommendation 24:** The City of Bunbury enable the airport to function as an independent business unit including combining rates and lease fees levied at the airport and identifying both as airport income.



### 3.3 Airport Safeguarding Plan

Off-airport planning aims to minimise the potential encroachment of incompatible activities and development in the vicinity of an airport, particularly in terms of:

- aircraft noise impacts
- intrusions into the protected operational airspace of the airport
- distractions to pilots from lighting in the vicinity of the airport
- wildlife strikes
- building-generated wind-shear and turbulence from nearby development
- public safety
- impacts on navigational aids

The National Airports Safeguarding Framework (NASF) provides guidance for avoiding and managing these impacts.

#### 3.3.1 National Airports Safeguarding Framework

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 NASF comprises a number of principles, measures and guidelines for managing the impacts of aircraft noise and risks to aircraft and land uses surrounding airports.

Outside the airport site, appropriate planning controls should be put in place to protect the ongoing operation of the airport – and the amenity of external land uses.

**Recommendation 25:** Adopt the National Airports Safeguarding Framework framework to avoid encroachment of uses incompatible with the airport.

**Recommendation 26:** The City of Bunbury determine revised OLS for the proposed airport expansion in order to protect the required airspace.

**Recommendation 27:** The GBRS and LPS8 not support scheme amendments and applications for planning consent that will conflict with, and may compromise, existing and planned airport operations.

#### 3.3.2 Aircraft Noise Contours

ANEF is discussed in section 2.6.8. It would be prudent for the Airport Operator to update ANEF assessment for Bunbury Geographe Airport and implement the relevant standards and controls.

**Recommendation 28:** The Airport Operator undertake an updated ANEF assessment and mapping for the Bunbury Geographe Airport and introducing controls as discussed in the National Airports Safeguarding Framework Guidelines A: Measures for Managing Impacts of Aircraft Noise to guide land use and operational decision-making including avoiding encroachment of incompatible uses and unacceptable noise impacts on surrounding land uses.

### 3.4 Planning Policies and Controls

The City of Bunbury Local Planning Policy - Bunbury Airport was adopted in 2006. Whilst elements of the policy remain relevant, it should be reviewed in light of the new Master Plan and to help with its implementation.

**Recommendation 29:** The City of Bunbury review its existing Bunbury Airport Local Planning Policy to ensure consistency with, and help implement, the Master Plan.

### 3.5 Staging

Airport development and expansion should take place over many years to meet short, medium and long term needs.

A staging plan is included in the Master Plan (refer Figure 8: Master Plan – Staging), showing three indicative stages generally based on:

- consolidation and enhancement of the existing site
- development of a cross-runway and airport related industrial precinct
- ultimate extension of the existing main runway and airport expansion eastward.

**Recommendation 30:** Regularly consult and review the Staging plan as the guide to progressive airport development and expansion.

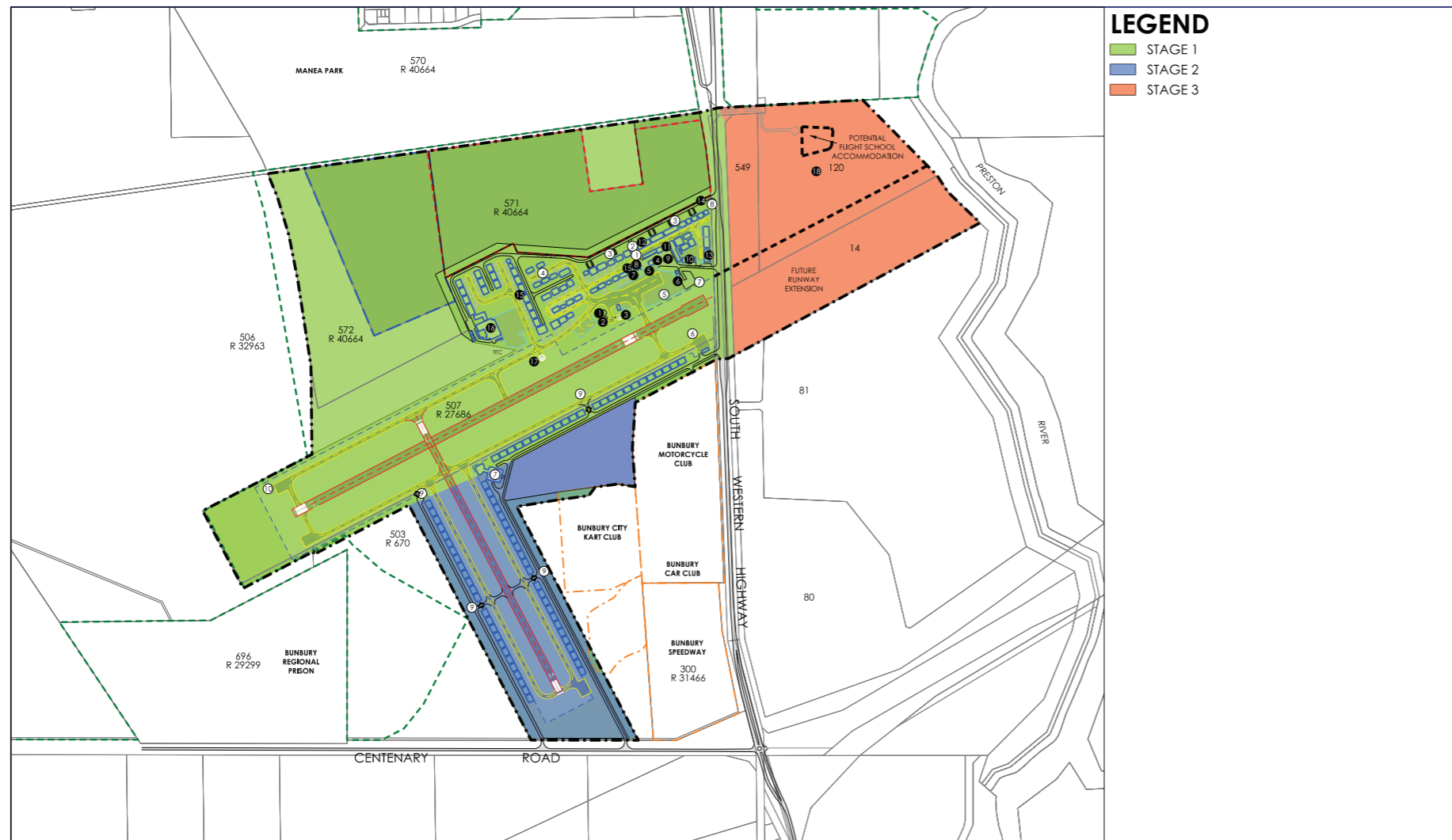
### 3.6 Implementation Plan

The Master Plan should be reviewed every five years, be adjusted as necessary to respond to changing circumstances while maintaining a long-term view, and implemented via an Airport Facilities Plan or Airport Development Plan that is also regularly updated.

The Master Plan is a strategic plan that requires a regularly updated Development Plan to assist with implementation. Whilst elements of the Bunbury Airport Development Plan 2011-2015 remain relevant, an updated plan is now required to support the new Master Plan.

**Recommendation 31:** Prepare an updated Airport Development Plan to assist with implementation of the Master Plan and to replace the Bunbury Airport Development Plan 2011-2015.





This plan has been prepared for planning purposes. Areas, contours and dimensions shown are subject to survey.

Figure 10: Master Plan - Staging

### 3.7 Conclusion

For well over 50 years, Bunbury Airport has contributed to the social and economic development of Bunbury and the wider community. It has well-established regional airport infrastructure and operational structures in place and is geographically well located. Working in partnership with all levels of government, airport users, business and the community, Bunbury Geopraphe Airport is poised for progressive development and expansion to meet the growing general aviation needs of Western Australia's Second City region.