# Master Plan

## Parafield Airport

November 2012

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Parafield Airport

# FOREWORD

On behalf of Parafield Airport Limited I am pleased to present our 2012 Master Plan which was approved by the Federal Minister for Infrastructure and Transport on 5 November 2012.

The Parafield Airport Limited Master Plan for the period November 2012 to November 2017 fulfils the requirements of Sections 78 to 83A of the *Airports Act 1996* as amended, being the airport's primary planning document for the next five years with a planning horizon for the next twenty years.

Parafield Airport is the principal general aviation and pilot training airport in South Australia. It is important that the potential of this airport is fully realised to fulfil the expectations of the community for safe, effective and efficient air training and aviation-related services. This can be achieved by bringing together international airport expertise, service providers and financial strength to ensure that the airport is developed in an effective manner in concert with stakeholders requirements and expectations.

This Master Plan represents the plans that Parafield Airport Limited has to develop the airport in its current location, providing local and regional employment opportunities, within an ever expanding community, whilst enhancing its character and history in the area.

Since 2009, Parafield Airport Limited has developed and introduced additional consultative media including brochures, web site and committees, technical measures and procedures to accurately record the movement of aircraft at the airport and a technical working group to assess methodologies to improve the amenity of the community from flying training impacts where operationally safe to do so. This group reports and responds to the Airport Consultative Committee.

A shortcoming in previous master planning has been a difficulty in accurately assessing aircraft movement details by being dependent on a variety of sources that did not correlate. The gathering of accurate statistical details on aircraft movements at Parafield has moved a step closer with the installation and successful operation of an ABaSS – (Aircraft Billing and Surveillance System). This system, which is now correlated to data from Airservices Australia and data from the on-airport aviation operators, is a major tool in being able to assess aircraft movements 24 hours per day, seven days per week with a significantly higher degree of accuracy. An added bonus is an improvement in safety and security as any movement onto or from the runways is recorded.

This Master Plan has been developed through an extensive consultation program involving community and stakeholder input on the issues. The three tiers of Government have been involved in the consultative processes regarding the development of the airport. Where applicable, the outcomes of consultation have been incorporated.

The Master Plan for 2012-2017 has been structured into five main volumes that comply with the requirements of the *Airport Act 1996* and best meet the company's Vision Statement which is:

> *'To be a top tier Airport Business Centre in Asia Pacific, recognised for delivering exceptional outcomes to our customers, partners, shareholders and community'.*

Our critical asset is our staff, who will be supported and trained to provide open, honest and personalised customer service to our community. Respect for our heritage is a priority in the context of an operating airport that has in the past, and will in the future, always continue to provide essential air services and economic growth to the communities we serve. Our philosophy is to operate and develop Parafield Airport in accordance with the principles of sustainable development, recognising that the success of our organisation can be enhanced by conducting business in a way that is efficient and environmentally, socially and economically responsible. Safe and secure operations are paramount.

The five volumes of the Master Plan are:

- Volume 1 – Airport Master Plan;
- Volume 2 – Ground Transport Plan;
- Volume 3 – Sustainability Plan (Airport Environment Strategy);
- Volume 4 – Community Plan; and
- Volume 5 – Appendices.

This Master Plan will continue to be the primary guide to the future planning and development of the airport and its environs, addressing our statutory obligations pursuant to the *Airports Act 1996* and Regulations.

We believe that we have delivered a plan that is both realistic and achievable in the current international and national climates.

Mark Young
Managing Director
Parafield Airport Limited

# EXECUTIVE SUMMARY

## INTRODUCTION

Parafield Airport Limited (PAL) has a clear vision to develop Parafield Airport as a nationally recognised Class D Airport of Excellence with a partnership approach to business thereby helping to generate prosperity for the communities of South Australia. Parafield Airport is also a major component of Australia's aviation training infrastructure.

Achievement of this vision requires long-term planning in a structured and consultative manner. This Master Plan sets the framework for the development of Parafield Airport to meet industry demand and community expectations for the next 20 years.

PAL gives assurance that it will work closely with all stakeholders in government, business and the wider community to realise its vision while balancing economic and social development with environmental management.

## THE PURPOSE OF A MASTER PLAN

The purpose of the Master Plan is to summarise the planning framework for Parafield Airport over a planning horizon of 20 years, within the context of the airport's ultimate development potential.

Sections 78 to 83A of the *Airports Act 1996* (the Act) is the guiding legislation in the preparation of this Master Plan. After public comment and relevant amendment the Draft Master Plan was lodged for approval with the Federal Minister for Infrastructure and Transport. The Minister approved the Draft Master Plan, and this Final Master Plan will remain in force for a period of five years from the date of approval or until it is replaced by a new/revised plan.

## ECONOMIC SIGNIFICANCE

Parafield Airport makes an important contribution to the South Australian economy through employment and value-added production associated with the airport's business activities.

It is estimated that entities that operate in association with Parafield Airport directly employ 823 people on-site and 184 people off-site, for a total of 1007 people. These people have gross wages and salaries of an estimated $67.0 million. An estimate of the value-added of the airport is a total value-added of $105.5 million.

In total, the full economic impacts associated with the operations of Parafield Airport are estimated to be a contribution of $184.3 million to Gross State Product and support for 1914 full time equivalent jobs.

## DEVELOPMENT OBJECTIVES

In order to realise the vision of Parafield Airport, PAL has identified specific marketing and growth objectives which it will pursue in the course of this planning period to develop the airport by:

- maintaining the airport as South Australia's principal general aviation and civilian flight training centre;
- enhancing the airport as a key element of transport infrastructure;
- facilitating flight training activities and the movement of general aviation and freight by infrastructure improvements;
- contributing to the viability of the airport as a business enterprise through the provision of commercial, retail and industrial activities; and
- provision of an economic core and employment centre for the northern suburbs of Adelaide and beyond.

## LAND USE PLANNING

Consultation between the State Government, Local Government and PAL has resulted in an agreed land use development plan titled Airport Zone that is specifically aligned with the State planning regime.

PAL has retained the same precinct definitions as were provided in the 2004 Master Plan:

- Runways;
- Central;
- Commercial Estate;
- Levels;
- Bennett;
- Cross Keys; and
- Kings.

For each precinct, the Master Plan contains Objectives and Desired Future Character Statements, along with Principles of Development Control which include Envisaged, Non-Complying and Merit uses, in similar vein to that in existence under the State Planning regime.

## KEY CHANGES

The Parafield Airport Master Plan (2012) has been structured into five volumes that comply with the requirements of the Act and best meet the company's vision statement:

- Volume 1 – Airport Master Plan;
- Volume 2 – Ground Transport Plan;
- Volume 3 – Sustainability Plan (Airport Environment Strategy); and
- Volume 4 – Community Plan;
- Volume 5 – Appendices.

## AIRSPACE PROTECTION

PAL has continued to consult with State Government on revising planning procedures within the State Planning protocols to recognise airports and plan appropriately for off-airport areas affected by aircraft noise. Fulfilment of this process is likely to occur during this planning period.

PAL continues to take a pro-active role within the State with the relevant authorities to ensure that airspace protection requirements are provided for in the development, assessment and approval procedures.

## SUSTAINABILITY

The Board, Executive Management and Staff of PAL have embraced a Sustainability Policy for Parafield Airport.

This document, and particularly Volume 3 - the Sustainability Plan (Airport Environment Strategy) of this Master Plan, marks a new era for PAL, predicated on fully-integrated corporate and environmental objectives with transparent and measurable performance targets.

The goals and actions contained in this Master Plan represent positive and rigorous benchmarks to generate the best outcomes for the airport.

## IMPLEMENTATION

Airport developments proposed within this document will only be implemented as demand determines. Each stage or development will be subjected to planning, commercial, operational and sustainability assessments.

Where applicable, Major Development Plans will be prepared in compliance with the Act. These Major Development Plans are subject to Commonwealth approval including environmental impact assessments, community and industry liaison and consultation.

All developments on airport, whether of a major or minor nature, are subject to Commonwealth approval after sign-off by the Airport Building Controller.

## REVIEW

A review of the Master Plan is required every five years or as directed by the Minister in accordance with the requirements of the Act.

# Master Plan

## Parafield Airport

### Volume 1: Airport Master Plan

November 2012

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Parafield Airport

# TABLE OF CONTENTS

## VOLUME 1 AIRPORT MASTER PLAN

## LIST OF FIGURES

## LIST OF TABLES



## VOLUME 2 GROUND TRANSPORT PLAN

## VOLUME 3 SUSTAINABILITY PLAN

## VOLUME 4 COMMUNITY PLAN

## VOLUME 5 APPENDICES

# ABBREVIATIONS

| | |
|---|---|
| AAA | Australian Airports Association |
| AAL | Adelaide Airport Limited |
| AAWHG | Australian Aviation Wildlife Hazard Group |
| ABaSS | Aircraft Billing and Surveillance System |
| ABC | Airport Building Controller |
| ACCC | Australian Competition and Consumer Commission |
| AEO | Airport Environment Officer |
| AEP | Airport Emergency Plan |
| AER | Airport Environment Report |
| AES | Airport Environment Strategy |
| AFP | Australian Federal Police |
| Airservices | Airservices Australia |
| ALA | Aircraft Landing Area |
| ALC | Airport Lessee Company |
| AMSA | Australian Maritime Safety Authority |
| ANEC | Australian Noise Exposure Concept |
| ANEF | Australian Noise Exposure Forecast |
| ANEI | Australian Noise Exposure Index |
| APU | Auxiliary Power Unit |
| ARFF | Airport Rescue and Fire Fighting |
| ASR | Aquifer Storage and Recovery |
| ASTR | Aquifer Storage, Transfer and Recovery |
| AST | Above-ground Storage Tank |
| ATS | Air Traffic Services |
| ATSA | Air Transport Safety Authority |
| BAeFTA | British Aerospace Flight Training Adelaide |
| BOM | Bureau of Meteorology |
| CASA | Civil Aviation Safety Authority |
| CASRs | Civil Aviation Safety Regulations |
| CBD | Central Business District |
| CEMP | Construction Environmental Management Plan |
| $CO_2e$ | Carbon Dioxide Equivalents |
| CTAF | Common Traffic Advisory Frequency |
| DCC | Department of Climate Change |
| DoIT | Department of Infrastructure and Transport |
| DPA | Development Plan Amendment |
| DPTI | Department of Planning, Transport and Infrastructure |
| DSEWPC | Department of Sustainability, Environment, Water, Population and Community (Commonwealth) |
| EMP | Environmental Management Plan |
| EMS | Environmental Management System |
| EPA | Environment Protection Authority (SA) |
| EPBC | Environment Protection and Biodiversity Conservation Act 1999 |
| ETSA | Electricity Trust of South Australia |
| FAC | Federal Airports Corporation |
| FEGP | Fixed Electrical Ground Power |
| FOD | Foreign Object Debris |
| FTA | Flight Training Adelaide |
| GA | General Aviation |
| GAAP | General Aviation Aerodrome Procedures (now replaced with Class D Aerodrome Procedures) |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| GPU | Ground Power Unit |
| GSP | Gross State Product |
| HELSP | Housing and Employment Land Supply Program |
| ICAO | International Civil Aviation Organisation |
| ILS | Instrument Landing System |
| IMP | Irrigation Management Plan |
| ISO 14000 | Australian and International EMS Standard |
| MDP | Major Development Plan |
| MFP | Multi-Function Polis |
| MOS | Manual of Standards |
| MTOW | Maximum Take Off Weight |
| NASAG | National Airports Safeguarding Advisory Group |
| NPI | National Pollution Inventory |
| ODS | Ozone Depleting Substances |
| OLS | Obstacle Limitation Surface |
| PACC | Parafield Airport Consultative Committee |
| PAL | Parafield Airport Limited |
| PAR | Plan Amendment Review |
| PANS-OPS | Precision Approach Navigation Surfaces – Operations |
| PSZ | Public Safety Zone |
| RPAs | Rules and Practices for Aerodromes |
| RFFS | Rescue and Fire Fighting Service |
| RPT | Regular Public Transport |
| SA | South Australia |
| SES | State Emergency Service |
| SOP | Standard Operating Procedure |
| TAAATS | The Australian Advanced Air Traffic System |
| TAR | Terminal Area RADAR |
| TFI | Tourism Futures International |
| TOD | Transport Oriented Development |
| TSP | Transport Security Program |
| UST | Underground Storage Tank |
| VFR | Visual Flight Rules |
| VMC | Visual Meteorological Conditions |

# GLOSSARY

**Ab initio**
All training up to completion of commercial pilots licence and multi-engine command instrument rating.

**Aerodrome/Airport**
A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

**Aircraft Landing Area**
A place which may be suitable for the landing and take-off of an aeroplane of appropriate certification and performance but which may not fully meet formal standards of construction, marking, maintenance or reporting.

**Airport Control Service/Air Traffic Control**
Air traffic control service provided by Airservices Australia

**Airport Emergency Plan**
A plan developed by the Airport Operator to co-ordinate all agencies and their individual Airport Emergency Procedures, State or supporting area plans for dealing with an airport emergency

**Airport Emergency Procedures (Standard Operating Procedures)**
Individual agency procedures for meeting the Airport Emergency Plan.

**Aircraft Operator**
The person whose name appears on the Aircraft Register as the operator of the aircraft, the holder of the Certificate of Registration with respect to the aircraft or any person who, with the authority of the holder of the Certificate of Registration for the aircraft and the written acceptance of PAL, operates that aircraft when it arrives or departs from Parafield Airport as the case may be.

**Airport Operator**
The airport operator is the person(s) or organisation whose name appears on the licence document and/or in AIP Enroute Supplement Australia. (For the purposes of this Master Plan, Parafield Airport Limited, ACN-075176608 is the airport operator at Parafield Airport.)

**Aviation-Related Support Industry**
Includes aircraft hangars, catering services, freight terminals, car rental and valet facilities, car parking, vehicle storage, fuel depots and hydrants, storage facilities warehousing, offices, engineering support and maintenance activities and passenger terminals.

**Airport Security Program**
In accordance with the *Aviation Transport Security Act 2004*, a written plan prepared by an Airport Operator that details security measures and procedures for the airport as approved by the Secretary, Department of Infrastructure and Transport.

**Airside**
The movement area of an airport, adjacent terrain and buildings or portions thereof, access to which is controlled.

**Apron**
The part of an airport used for the purpose of enabling passengers to board, or disembark from aircraft; for loading cargo onto, or unloading cargo from, aircraft; and or-for refuelling, parking or carrying out maintenance on aircraft.

**Aviation Attraction**
An Aviation Attraction relates to a place or event of interest for airport visitors, typically covering themes of inherent or exhibited cultural aviation value, historical aviation significance, or amusement opportunities related to aviation activities. Aviation Attractions include but are not limited to air shows, aviation museums, public flight simulation facilities and aviation-themed amusement centres.

**Aviation Security**
A combination of measures and human and material resources intended to safeguard civil aviation against acts of unlawful interference.

**Brand Outlet Centre**
A shopping centre in which is located one or more discounted outlets used by retailers to centralise the distribution and sale of excess or damaged stock, test limited amounts of new products and provide inventory control together with associated support retail activities such as fast food, restaurants and ancillary retailing and services, either as

independent shops or as alternate activities within the Brand Outlet shops themselves. Normally this would involve a shop, or group of shops, with a floor area exceeding 500 m², that offers by retail clothing, sporting goods, and personal effects goods.

### Bulky Goods Retailing
Includes premises that are used for the display, sale and rental of automotive parts, camping and recreational supplies, curtains and fabrics, homewares, hardware, stationary and office supplies and that do not sell food stuffs, personal effects or clothing (other than sold incidentally to the primary purpose of the shop) and retail showrooms and service trade premises.

### Categorised Airport
An airport that has been identified by the Department of Infrastructure and Transport through an instrument signed by the Secretary and issued pursuant to ATSA 2004 Sec 28 as being an airport requiring the implementation of specific aviation security measures through an Airport Security Program.

### Commercial
Commercial includes activities associated with the storage, sale, manufacturing and distribution of goods and services. Such activities include, but are not limited to: hotels, light industry, motor vehicle business (other than a wrecking yard), offices, petrol filling station, retail showrooms, service trade premises, service industries, shops, storage and warehouse facilities.

### Community
For the purpose of the Parafield Airport Master Plan, 'Community' is defined as the group of people or businesses who own and/or occupy land within the northern suburbs or anyone interested in the development or operation of the airport.

### Control Tower
A unit established to provide air traffic control service to airport traffic.

### Department
The Commonwealth Department of Infrastructure, and Transport.

### Farming
Cropping and grazing, including horse or animal agistment (except agistment for air freight or export purposes) and horticulture.

### Fixed Base Operation
An FBO is a commercial business use providing aeronautical services such as fuelling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance, flight instruction, passenger facilitation and passenger accommodation areas for General Aviation operators and business charter operators. An FBO is a primary provider of support services for General Aviation Operators at a public-use airport.

### General Aviation
General Aviation means all Civil Aviation Operations other than Regular Public Transport operations.

### Handling Agent
An organisation which provides an airline with services such as, but not necessarily confined to, engineering support, passenger handling, operational services and the supply of consumable items.

### Home Display Centre
A group of houses or transportable houses for display and purchase.

### In flight
In flight commences when the last external door of the aircraft is closed in preparation for the first movement of the aircraft for the purpose of taking off; or if the aircraft moves before all doors are closed for the purpose of taking off, when it first so moves, until the first external door of the aircraft is opened after the aircraft comes to rest.

### Landside
That area of an airport and buildings to which the public normally has free access.

### Manoeuvring Area
Those parts of an airport used for the take-off, landing and taxiing of aircraft, excluding aprons.

### Movement Area
That part of an airport used for the surface movement of aircraft, including manoeuvring areas and aprons.

### Obstacle Limitation Surface
The Obstacle Limitation Surfaces (OLS) are conceptual (imaginary) surfaces associated with a runway, which identify the lower limits of the aerodrome airspace above which objects become obstacles to aircraft operations, and must be reported to CASA.

### Prohibited Area
In relation to an airport, means any part of the airport upon or in relation to which is posted a notice to the effect that access to that part of the airport is prohibited, and purporting to have been posted with the Authority of the Chief Executive of the Airport Operator.

### Regular Public Transport Service
Means an operation of an aircraft for the purpose of an air service that:
- is provided for a fee payable by persons using the service; and
- is conducted in accordance with fixed schedules to or from fixed terminals over specific routes; and
- is available to the general public on a regular basis; and
- as is defined in the Air Navigation Act 1920.

### Regulatory Signs
A sign, which advises of any law, regulation or restriction which it, would be an offence to disregard.

### Research and Development
Means a building or facility used primarily for research, innovation and business development in science, technology and education.

### Residential Accommodation
Means premises or buildings associated with aviation education/training either as independent units or with shared common amenities and facilities.

### Retail Showroom
Premises used primarily for the sale, display or offer by retail of furniture, floor coverings, computers, electrical goods and appliances, lighting, outdoor furniture and white goods.

### Runway-related Activities/Facilities
Includes runways, taxiways, aprons, clearways, compass swing and engine run-up areas, glide path facilities, helicopter landing parking and servicing, landing equipment, radar and all aircraft navigational aids.

### Secretary
The Secretary to the Commonwealth Department of Infrastructure, and Transport.

### Sterile Area
In relation to an aerodrome, means an area in the aerodrome to which persons, vehicles and goods are not permitted access until given clearance, in relation to aviation security, under Section 12 of the *Aviation Transport Security Act 2004*.

# 1 INTRODUCTION

## 1.1 BACKGROUND

Parafield Airport is located on the Northern Plains of the Adelaide metropolitan area, 18 kilometres north of the Central Business District (CBD) of the City of Adelaide. It is the principal General Aviation and Flight Training facility in South Australia.

The first master plan for the airport was developed under instructions from the previous owner, the Federal Airports Corporation, and was released in draft form in 1996.

This is the fourth master plan prepared by Parafield Airport Limited (PAL) for Parafield Airport. This plan builds on the aeronautical requirements, environmental protections and surplus land use concepts developed in the previous three master plans.

This Master Plan (MP) varies in approach from the 2004 Master Plan by focusing on the issues of sustainability and how these issues affect the continued growth of the airport and the development of aviation infrastructure. The previous Airport Master Plan was approved by the Minister on 3 November 2004.

PAL is also required under the *Airports Act 1996* to prepare an Environment Strategy every five years for Ministerial approval. The 2009 Sustainability Plan (Airport Environment Strategy) was approved by the Minister on 24 October 2009. The approved Sustainability Plan was based on the principles of sustainable operation and development which have developed as a fundamental component of the PAL business.

The Sustainability Plan retains all the legal requirements of the Act in relation to Airport Environment Strategies, but extends the application of the strategy beyond compliance as described in the Act and Regulations to the voluntary application of recommended sustainable development principles.

To adequately integrate sustainability issues across the Master Plan and the Sustainability Plan, PAL has incorporated the Sustainability Plan into the Master Plan. This is presented as Volume 3 of this MP.

The remaining volumes of the MP are Volume 2 the Ground Transport Plan, Volume 4 the Community Plan and Volume 5 the Appendices.

The Ground Transport Plan deals with the issues of moving people and freight onto and off the airport and the interactions with the surrounding road and public transport infrastructure. The Community Plan deals with the social interactions between PAL and communities both immediately surrounding the airport and in the Parafield and Adelaide regions in general. Volume 5 includes appendices referred to in the earlier volumes.

## 1.2 LEGISLATIVE REQUIREMENTS

Parafield Airport is operated predominantly under the provisions of the Commonwealth *Airports Act 1996* however there are numerous other acts pertaining to the operation of aviation and aviation safety that PAL must comply with. PAL is required by the Act to submit a new draft Master Plan to the Federal Minister prior to the expiry of the original approved master plan every 5 years or as directed by the Minister.

Generally within this document, Master Plan refers to the current approved Master Plan (2004), while MP refers to this document

Parafield Airport is a certified aerodrome which operates under the provisions of Civil Aviation Safety Regulation (CASR) Part 139 - Aerodromes. The aerodrome must comply with the design and operating standards set out in the Manual of Standards Part 139 – Aerodromes and is audited against this Regulation and Manual of Standards on a regular basis by the Civil Aviation Safety Authority.

## 1.3 CONTENTS

The required contents of the MP are detailed under Section 71 of the Act and must include PAL's:

- development objectives, including the extent of consistency (if any) with planning schemes in South Australia;

- assessment of the future needs of the airport users for services and facilities relating to the airport;
- intentions for land use and related development of the airport site (covering landside, airside, surface access, and land use planning/zoning) including the extent of consistency (if any) with planning schemes in South Australia;
- forecasts relating to noise exposure levels, over a 20-year planning period;
- flights paths for aircraft likely to use the airport in the future;
- ANEFs for the surrounding airport lands;
- plans, developed through consultation with airline users of the airport and the neighbouring Local Government bodies, for managing significant aircraft noise intrusion above significant levels; and
- assessment of the environmental issues that might reasonably be expected to be associated with the implementing of the plan and PAL's plans for dealing with those expected issues.

In addition to requirements under the Act, the *Airports Regulations 1997* also contains requirements for airport master plans. These requirements relate to:

- any change to the OLS or PANS-OPS surfaces for the airport concerned that is likely to result if development proceeds in accordance with the master plan;
- for an area of an airport where a change of use of a kind described in subregulation 6.07 (2) of the *Airports (Environment Protection) Regulations 1996* is proposed:
  - the contents of the report of any examination of the area carried out under regulation 6.09 of those Regulations; and
  - the airport lessee company's plans for dealing with any soil pollution referred to in the report;
- an airport master plan must, in relation to the landside part of the airport, where possible, describe proposals for land use and related planning, zoning or development in an amount of detail equivalent to that required by, and using terminology (including definitions) consistent with that applying in, land use planning, zoning and development legislation in force in the State or Territory in which the airport is located, and
- a draft or final master plan must:
  - address any obligation that has passed to the relevant airport lessee company under subsection 22 (2) of the Act or subsection 26 (2) of the Transitional Act; and
  - address any interest to which the relevant airport lease is subject under subsection 22 (3) of the Act, or subsection 26 (3) of the Transitional Act.

These requirements and their location in the document is shown in Table 1.1.

## Table 1.1 Requirements for Master Plan Content

| *Airports Act 1996* Requirements | Location in the Document (In this volume except where indicated) |
|---|---|
| Development objectives | Volume 1; Section 6.7 |
| Assessment of the future needs of civil aviation users of the airport, and other users of the airport, for services and facilities relating to the airport | Volume 1; Section 3.4.5, Section 4 and Section 7 |
| Intentions for land use and related development of the airport, where the uses and developments embrace airside, landside, surface access and land planning/zoning aspects | Volume 1; Section 6 to 8 |
| Australian Noise Exposure Forecast for the areas surrounding the airport. | Volume 1; Section 5 |
| Plans developed through consultation with airline users of the airport and neighbouring Local Government bodies for managing aircraft noise intrusion in areas forecast to be subject to exposure above the significant ANEF levels | Volume 1; Sections 5.12 and 5.13 |
| Assessment of environmental issues that might reasonably be expected to be associated with the implementation of the plan | Volume 1; Section 7<br>Volume 3; Sections 9 to 14 |
| Plans for dealing with the environmental issues including plans for ameliorating or preventing environmental impacts | Volume 3; Sections 9 to 14 |
| In relation to the first 5 years—a plan for a surface access system on the landside of the airport that details: | |
| · a road network plan; | Volume 2; Section 8 |
| · the facilities for moving people and freight at the airport; | Volume 2; Section 8 |
| · the linkages between those facilities, the road network and public transport system at the airport and the road network and public transport system outside the airport; | Volume 2; Section 8 |
| · the arrangements for working with the State or local authorities or other bodies responsible for the road network and the public transport system; | Volume 1; Section 6; Volume 2; Section 8.7 |
| · the capacity of the ground transport system at the airport to support operations and other activities at the airport; | Volume 2; Section 8 |
| · the likely effect of the proposed developments in the master plan on the ground transport system and traffic flows at, and surrounding, the airport. | Volume 2; Section 8 |
| In relation to the first 5 years—detailed information on the proposed developments that are to be used for:<br>· commercial, community, office or retail purposes; or<br>· for any other purpose that is not related to airport services. | Volume 1; Section 7 |
| In relation to the first 5 years—the likely effect of the proposed developments on: | |
| · employment levels at the airport; | Volume 1; Section 3.4.5 |
| · the local and regional economy and community, including how the proposed developments fit within the planning schemes for commercial and retail development in the area adjacent to the airport; | Volume 1; Sections 6.1 to 6.6 |
| · an environment strategy that details: the objectives for the environmental management of the airport the areas within the airport site which are identified as environmentally significant; | Volume 3; Sections 9.8, 10 to 14 |
| The sources of environmental impact associated with operations | Volume 3; Sections 9 and 13 |
| The studies, reviews and monitoring to be carried out in connection with the environmental impact associated with operations | Volume 3; Sections 9, 11 and 13 |
| Time frames for completion of studies reviews and for reporting on that monitoring | Volume 3; Section 9 to 14 |
| Specific measures to be carried out for the purposes of preventing, controlling or reducing the environmental impact associated with operations | Volume 3; Section 9 to 14 |
| Time frames for completion of those specific measures | Volume 3; Section 9 to 14 |
| Details of the consultations undertaken in preparing the strategy | Volume 1; Section 2; Volume 4; Sections 19 and 21 |
| Identification of any proposed Sensitive Developments | Volume 1; Section 6 |

# 2 MASTER PLANNING PROCESS

## 2.1 PURPOSE OF THE MASTER PLAN

The purpose of an Airport Master Plan is to summarise the planning framework for the development of an airport over a planning period of 20 years, within the context of the airport's ultimate development potential.

The master plan provides the airport operator, the three tiers of Government, Commonwealth, State and Local, the local community, aviation industries and interests, commercial users and investors with confidence to plan for the future development of the airport and its environment. It provides the basis for planning of aviation activities, land and commercial development, environmental management and infrastructure delivery in an integrated and timely manner.

The implementation of the planned activities at Parafield Airport and the triggers to the implementation are detailed in Volume 1, Chapter 7 of this MP covering the first five years in some detail, the following five to twenty years in summary and including an ultimate planning option.

An approved Airport Master Plan remains in force for a period of five years unless the Airport Lessee Company is directed by the Minister to replace the plan. This review process forms a comprehensive regime for the ongoing regulation of activities on the airport through consultation with key stakeholders, various levels of Government, the aviation industry, and the airport and local communities.

## 2.2 BACKGROUND STUDIES

The MP is based on a number of detailed studies undertaken in recent years, concerning airport planning, land use planning and environmental and socio economic issues. These studies include:

- Parafield Airport Master Plan (2004) endorsed by the then Federal Minister for Transport and Regional Services;
- Draft Parafield Airport Master Plan and associated studies (2009);
- Air Traffic Forecasts for Parafield Airport prepared from the following sources:
  - Aircraft Billing and Surveillance System (ABaSS);
  - Flying Training Schools Audited Operations Movement Data;
  - Airservices Australia Tower Operating Hours Movement Data;
  - Major Tenants Operational Movement data;
  - Gross State Product (GSP); and
  - industry market assumptions;
- Assessment of the Socio-Economic Drivers of Parafield Airport on the Community of South Australia (September 2011), Hudson Howell - a report on the demographic profile of the region and the economic significance of Parafield Airport; and
- Review of the Capacity Analysis of Parafield Airport - Aerodrome Design Pty Ltd (2011).

## 2.3 THE MASTER PLANNING PROCESS

PAL is required under Section 76 and Section 78(1) of the Act to submit a new draft Master Plan to the Federal Minister prior to the expiry of the original master plan approved under Sect 81 of the Act or, as in this case, as directed by the Minister, in his letter to PAL dated 4 May 2010, and subsequently amended in the Minister's letter of 5 July 2010 under Section 81 (8) of the Act, that PAL "is directed to provide a fresh master plan on or before 4 May 2012". This date was subsequently extended by the Minister to on or before 30 June 2012 to allow for more extensive consultation with all parties.

Section 77 of the Act advises that the approved Airport Master Plan will be in force for a period of five years from the date of approval or until it is replaced by a revised plan.

Under the Act, the draft Master Plan is to be developed in consultation with stakeholders, including airport users, government departments at all three tiers and authorities and surrounding communities. Once a draft Master Plan has been prepared, it is then to be placed on public display for 60 business days to allow for the interested public to review and make written comment on its content. At the end of the 60 business day review period, PAL is required to prepare a response document which lists all persons or organisations who commented on the MP, the issues raised, and how PAL showed due regard to those issues, including where changes to the Master Plan have been made.

The response document, together with the draft Master Plan, as exhibited, is then submitted to the Minister for Infrastructure and Transport (the Minister) for approval. The Minister indicates whether or not the proposed amendments to the draft Master Plan are approved and any additional changes required.

PAL then prepared this Final Master Plan, which will become the Parafield Airport Master Plan, in force for a period of five years, or until requested by the Minister to be reviewed.

This Final Master Plan (MP) has been advertised and made available for viewing or downloading on the PAL website www.parafieldairport.com.au. Hard copies may also be viewed at PAL or requested free of charge from PAL.

## 2.4 CONSULTATION

The Act and Regulations specify that a full consultation program is required prior to the preparation and submission of a draft Master Plan and draft Airport Environment Strategy to the Minister for approval. This consultation program is to include (as a minimum):

- newspaper advertisements;
- circulation of draft plans for public and stakeholder inspection;
- a 60 business day comment period; and
- a summary of how comments have been addressed.

A comprehensive summary of the consultative process to date is provided at Volume 4, Chapter 10.

PAL involved the community and stakeholders in the formative stages of the development of the MP and, through the Parafield Airport Consultative Committee and Planning Consultative Forum, invited comments and ideas at an early stage. These were collated and appropriate recognition made in the documentation to reflect planning in harmony with the State's guidelines. The State's planning principles and guiding documentation are detailed in Volume 1, Chapter 6.

The following consultation program and development timetable was prepared and implemented to enable PAL to meet the legislative timetable (Table 2.1).

This program was designed to ensure that interested parties had the opportunity to advise and influence the development of the MP prior to presentation to the public as prescribed by the legislation.

This early involvement at both a strategic and operational level helped to develop a master plan that is relevant to the needs and requirements of the South Australian community at large and the airport stakeholders.

Table 2.1 Consultation and Preparation Timetable

| Timeframe | Target | Action | Consultation | Outcome |
|---|---|---|---|---|
| Sep-Oct 2011 | Prepare Exposure Draft | Finalise runways/aprons/ helicopter capacity analysis and layout plans – including Public Safety Zones (PSZ) to 1 Km<br>Up to Q400 status. | AAL/PAL Airport Operations<br>Peter Francis – Airports Design<br>Flying Training Schools and tenants | Reviews and plans complete |
| | | Finalise forecasting - base numbers, and predictions of numbers, types of aircraft, flight paths and circuits. | Airservices Australia<br>AAL/PAL<br>Technical Review Committee | Forecasts adopted |
| | | Update, review and develop precinct plans and development zones complete with access and egress, estimated economic benefits – Section 6 and 7. | City of Salisbury<br>Hudson Howells<br>URS<br>Murray Young and Assoc.<br>AAL/PAL | Reviews finalised |
| | | Update socio-economic review including requirements from Aviation Policy and Master Plan for employments growth etc. | Hudson Howell | Update completed |
| | | Review Airspace Protection (Restricted Airspace Gazettal) in light of runway capacity etc and Q 400 operations. | Airport Operations | Review completed |
| | | Undertake ANEF update subject to completion of final movement data and forecasting detail above.<br>Pre-warn Airservices Australia of request for Parafield ANEF update. | Synnot & Wilkinson<br>Airservices Australia | |
| | | Update approved Sustainability Plan. Obtain updated Section 6 from Property. | Sustainability Section | Review completed |

## Table 2.1 Consultation and Preparation Timetable (continued)

| Timeframe | Target | Action | Consultation | Outcome |
|---|---|---|---|---|
| | | Finalise review of Ground Transport Plan– including access and egress to Precincts, modes of transport, bicycle paths etc. | Property<br>Murray Young and Assoc.<br>State Transport | Review completed |
| | | Commence photography of airfield, operators and facilities for use in final documentation. | Simon Casson | Completed |
| | | Review current political and local issues climate.<br>Design and detail Community Consultation plan as per Guidelines.<br>Ensure Parafield website is operable and has e-mail link. | Corporate Affairs<br>Airport Management | Guidelines adopted |
| Oct-Nov 2011 | Letter of Advice of Master Plan | Advise Federal, State and Local Government elected members and administration of proposal to prepare a Master Plan for lodging with the Federal Minister for Infrastructure and Transport. | Specifically advise:<br>**Federal Members**<br>Mark Butler<br>Tony Zappia<br>Nick Champion<br>**State Departments**<br>Minister for Transport Energy and Infrastructure<br>Minister for Planning<br>Environment Protection Authority<br>**Federal Departments**<br>DoIT<br>Civil Aviation Safety Authority– Canberra and Local<br>Airservices Australia -Canberra and Local<br>**Local Government**<br>Mayors and Elected Members<br>City of Salisbury<br>Adelaide<br>Tea Tree Gully<br>Pt Adelaide/Enfield | Letters despatched |
| | Exposure Draft Considerations | Prepare Exposure Draft and deliver personally to relevant representatives for their retention and subsequent comment. | GM Corporate Affairs and R Synnot present to:<br>DoIT<br>CASA<br>AsA<br>SEWPaC | Exposure draft left with agents |
| Nov 2011-Feb 2012 | | Prepare MP for Public Display including adjustments and amendments resulting to MP from Exposure Draft comment. | Synnot & Wilkinson<br>PAL | Documents prepared |
| Mar-Jun 2012 | | Documents on public display and amended as agreed through consultation. | Using all forms of media including public hearings, consult with all stakeholders including community groups and individuals, state and local government, federal government, airlines and industry. | Consultation undertaken |

# 3 THE AIRPORT

## 3.1 AIRPORT SITE

Parafield Airport is located in South Australia, 18 km north of the Adelaide CBD in the City's strategic northern growth sector. Parafield Airport enjoys the facilities that come with being one of the busiest GA airports in Australia. The airport is bordered by Kings Road to the north, Main North Road to the east, the new Elder Smith Road to the south and the main northern rail line to the west.

## 3.2 AIRPORT HISTORY

(Extract from "*From Tin Shed to Glass Showcase*" Peter Donovan 2005)

The Commonwealth acquired 132 hectares of farmland at Parafield 18 km north of Adelaide on 22 September 1927. The new Adelaide Airport at Parafield opened for aircraft operations on 1 October 1927.

Adelaide Airport at Parafield was closely associated with the development of airlines that were to play a significant role in Australia's aviation history. Adelaide Airways Ltd based at Parafield was one of the predecessors of Australian National Airways Pty Ltd (ANA). The company was established in July 1935 to operate services between Adelaide and Broken Hill, Melbourne, Kangaroo Island and Port Lincoln, and it acquired the Adelaide-Perth route flown by Western Australian Airways on 12 June 1936. Adelaide Airways merged with Tasmanian-founded Holymans Airways Pty Ltd in 1936 to form ANA with interstate routes that serviced Perth, Adelaide, Melbourne, Sydney and Hobart. The company continued to acquire other airlines and routes and become the premier Australian airline. The company introduced the DC2 to Australia and established a clear competitive advantage over its smaller rivals.

Guinea Airways was also based at Parafield after it introduced scheduled services between Adelaide and Darwin on 5 March 1937 with Lockheed Electra 10 aircraft. The company had been registered in Adelaide a decade before, on 4 November 1927, to operate services between its goldfield operates in New Guinea. The company operated a service between Adelaide and Sydney in 1938 before handing it over to Ansett Airways. Thereafter it concentrated on developing regional services in South Australia and acquired the local operates of MacRobertson Miller Airways in April 1939.

Ansett Airways did not develop at Parafield but the latter was one the of the earliest airports added to that company's network. The airline began services between Melbourne and Parafield on 29 November 1937, less than two years after Reginald Myles Ansett established the company on 17 February 1936 with its inaugural flight from Hamilton, in Victoria, to Essendon, in suburban Melbourne. The popularity of the service prompted Ansett to acquire additional aircraft and extend his operations. The Adelaide service was suspended during World War 2, but recommenced afterwards with DC3 aircraft.

Parafield Airport, the aviation gateway to South Australia, was continually upgraded to match advances in aviation. The terminal building, containing a passenger lounge and administration offices and topped by a new control tower, was completed in May 1940. Minor extensions were made to the aerodrome including the erection of several Bellman hangers.

Despite physical improvements, Parafield's days as South Australia's premier airport were numbered. Many passengers had long considered Parafield too far from the city: the travelling time was upwards of half an hour. In fact, in November 1935 members of South Australian Aero Club, based at Parafield, suggested that Victoria Park racecourse in the city's east parklands become Adelaide's airport. This received scant regard, but the following year, when Parafield's shortcomings were becoming apparent, CW Hawker raised the matter of a new Adelaide Airport in federal parliament.

More importantly from an operational point of view, Parafield could not be developed to the standard required of a 'Transcontinental' airport. A transcontinental airport had been defined at an aviation convention in 1944 in Chicago convened to establish international standards for civil aviation. The Adelaide Hills, immediately to the east, meant Parafield was becoming increasingly unsuitable for commercial operations with the development

of ever-larger aircraft, such as the Convair and the DC4, which were proposed for the Melbourne-Adelaide-Perth route. Investigators indicated that runways of the required approach standard could not be constructed in certain directions at Parafield.

In addition, the lack of paved runways rendered Parafield unsuitable for larger aircraft during wet weather – aircraft had to be diverted to the paved wartime strip at Gawler. A 30-metre wide 1798-metre long cinder strip was completed in 1949 as a temporary solution, though this still proved unsuitable for heavy aircraft in poor weather. The proximity of the eastern hills meant construction of a paved runway did not offer a long-term solution.

Moreover, the rapid development of commercial operations highlighted the need to have these separated from training and general aviation operations. Indeed, this had begun to be a problem even before World War 2. In addition, the federal government determined that each capital should have two airports, one to serve smaller aircraft and training operations. For example, Bankstown was to become the second airport to Sydney's Mascot, while Moorabbin was to become secondary to Essendon in Melbourne.

## 3.3 RELATIONSHIP TO OTHER AIRPORTS

A number of other airports catering for the GA industry are currently operating within close proximity to Parafield as described below.

Adelaide Airport is the international and domestic air transport gateway to the City of Adelaide and the State of South Australia. Facilities at Adelaide Airport are well established and cater for the full range of commuter services, domestic and international services.

RAAF Base Edinburgh is currently a Defence facility and is home base for the Maritime Patrol Group operating P3 Orion aircraft. Future operations and activity at the aerodrome will be dependent on government policy.

Gawler Aerodrome (Aircraft Landing Area (ALA)) is approximately 20 km north of Parafield and is predominantly used as a flying and training aerodrome for glider operations. Limited airside facilities exist for powered GA fixed-wing operations.

Murray Bridge ALA is approximately 100 km east of Adelaide. The airport has a cross-runway configuration with associated taxiways and apron parking areas. A number of unit and small hangars exist with some maintenance activity. There is a flying school situated on the airport.

Aldinga ALA is approximately 60 km south of Adelaide. The airport is a cross-runway configuration, with associated taxiways and parking. There is a flying school situated on the airport and some maintenance facilities. Some operational restrictions apply due to nearby hills and ranges. The main activities at the aerodrome include flying training and joy flights.

Goolwa ALA is approximately 130 km south of Adelaide. The airport consists of a sealed runway with a natural-surface short cross strip, sealed taxiway and apron facility. There is a flying school situated on the airport. The main activities include flying training and joy flights.

## 3.4 ECONOMIC SIGNIFICANCE

The contribution that Parafield Airport makes to the South Australian economy can be determined by estimating the employment and value added production associated with the airport's overall air and other business activities. This is measured through a combination of a business survey and economic modelling to estimate the direct and indirect (multiplier) economic benefits attributable to airport activity. These outcomes are put into context by comparing the outcomes with those of the 1998, 2004 and 2008 reports (Hudson Howell 1998, Hudson Howell 2004, Hudson Howell 2008) and by assessing the airport's operating environment, including global and local economic conditions and changes in the level of activity at the airport. Strategic issues and their potential impacts are also considered.

### 3.4.1 Changes in Airport Activity and Trend Analysis

The 2008 report (Hudson Howell 2008) noted that aircraft movements at Parafield Airport had declined substantially between 2000 and 2004, reaching the lowest number of movements (127,162) since 1987/88. The figures have been somewhat skewed by various changes to the operating hours of the air traffic control tower and statistics gathered at that facility. However, there was a significant and sustained recovery in the number of aircraft movements after 2004, peaking at 242,384 in 2008/2009.

This recovery in aircraft movements is consistent with strong economic trends over that time. The performance is especially strong when compared with national and state-based general aviation and regional airline trends over the same period. Bureau of Infrastructure, Transport and Regional Economics (BITRE) General Aviation Activity data show that total landings declined from 2005 to 2009 in the General Aviation and Regional Airlines sectors.

Parafield Airport's growth performance to 2009/2010 is particularly strong against these national trends. However, of some concern is a sharp 17% decline in aircraft movements recorded during 2010/2011 (241,000 to 200,000). This decline in aircraft movements is inconsistent with other South Australian and national economic data for 2010/2011 which remained relatively stable during this period. Possible causes include:

- a correction based on strong growth since 2004 and recent national trends;
- competition from regional airports (e.g. Gawler, Goolwa, etc.);
- increasing fuel prices; and/or
- general economic and financial uncertainty during 2011.

Further investigation and ongoing performance monitoring is required to fully understand this trend and, if necessary, for corrective action to be taken. Importantly, PAL have taken action to gather more accurate movement data through the sharing of information by tenants, the introduction of the Aircraft Billing and Surveillance System (ABaSS) and the analysis of Airservices Australia statistics to correlate with PAL's on ground data.

## 3.4.2 The Economic Impact of Parafield Airport

In total, the full economic impacts associated with the operations of Parafield Airport are estimated to be a contribution of $184.3 million to Gross State product (GSP) and support for 1,914 Full Time Equivalent (FTE) jobs. Table 3.1 compares the 2011 and 2008 findings. While the jobs impact increases substantially, the GSP impact remains fairly constant. This is due to the loss from the precinct of some businesses with high value jobs, while growth is focussed in areas with lower wage levels (e.g. retail).

Table 3.1 Economic Impact of Parafield Airport 2008 and 2011

| | Year | |
|---|---|---|
| Impact | 2008 | 2011 |
| Number of Entities | 68 | 84 |
| Direct Employment<br>· On-site<br>· Off-site | 904<br>750<br>154 | 1007<br>823<br>184 |
| Indirect Employment | 809 | 907 |
| Total Employment | 1713 | 1914 |
| Total Value-added* | $184.5 million | $184.3 million |

* Contribution to Gross State Product

The increased business activity associated with the airport during the last 3 years was forecast in the 2008 report which highlighted the completion of infrastructure and development plans as catalysts for improved business activity (e.g. Elder Smith Road, Port River Expressway, Northern Expressway, etc.). These and other infrastructure projects have provided Parafield Airport and its commercial estate with exceptional access to transport and industrial infrastructure which has resulted in an expanding business and employment base over the past few years. The number of business entities located at Parafield Airport grew from 68 in 2008 to 84 in 2011, an increase of 16 businesses or 24%, with commercial and retail businesses accounting for the majority of this growth. Commercial and retail businesses now account for the majority of airport business entities – 43 of 84 or 51.2%.

The growth of recent years can be expected to continue based on this improved infrastructure and Parafield's proximity to the CBD. The airport has a secure long-term lease (to 2048 with an option of a further 49 years to 2097), so strategic and contingency planning is important to ensure that PAL is well placed to respond to growth pressures.

As noted above, the mix of new employment is changing with non-airport businesses (e.g. retailing) now the main driver of new employment at Parafield Airport. This trend is likely to continue during the next 5 years as Parafield is well placed for retail, commercial and industrial activity and industrial land is in short supply in the north and north western areas of metropolitan Adelaide.

It can be concluded from this assessment that Parafield Airport has continued to experience growth in its level of economic activity between 2008 and 2011 while improving its overall contribution to the state economy in terms of jobs.

This includes an analysis of Parafield's relative competitive position, market share and ability to provide additional revenue sources to improve the mediocre return on aeronautical assets. The competitive situation for general aviation was a major concern raised in the 2004 and 2008 reports when survey respondents had a perception that the airport's general aviation business was in decline (supported by aircraft movement data at the time).

## 3.4.3 Aeronautical and Non-Aeronautical Economic Impacts

Given the growing importance of non-aeronautical business at Australian airports, including Adelaide and Parafield Airports, it was decided to extend the socio-economic impact study to consider the respective contributions of aeronautical and non-aeronautical activity at Parafield Airport. Table 3.2 summarise the results of the economic modelling which has been based on the outputs from the business survey.

Table 3.2 Aeronautical and Non-Aeronautical Direct and Induced Economic Impacts

| Impacts | Value Added ($m) | Employment (FTE) |
|---|---|---|
| Aeronautical | | |
| Direct | 33.6 | 220 |
| Induced | 15.4 | 139 |
| TOTAL | 49.0 | 359 |
| Non-Aeronautical | | |
| Direct | 52.7 | 787 |
| Induced | 82.5 | 768 |
| TOTAL | 135.3 | 1555 |
| Total | | |
| Direct | 86.4 | 1007 |
| Induced | 97.9 | 907 |
| Total | 184.3 | 1914 |

In total, the economic impacts associated with aeronautical entities at Parafield Airport are estimated to be a contribution of $49 million to GSP and support for 359 FTE jobs. Non-aeronautical entities that operate at Parafield Airport are estimated to contribute $135.3 million to GSP and support 1,555 FTE jobs.

## 3.4.4 Employment and GSP Forecasts

Employment data from the current 2011, 2004 and 2008 studies were compared with airport aircraft movements in order to determine a level of correlation between the respective growth rates to enable employment and GSP forecasts to be made based on forward estimates of aircraft movements contained in PAL's Master Plan for Parafield Airport.

Consultation with AAL and PAL management also identified that, in addition to employment growth associated directly with aeronautical activities and current employment lands, additional employment lands will be created over the next 20 years resulting in additional direct employment in commercial, retail and light industrial activities. It was conservatively estimated that between 120,000 and 200,000 square metres (net) of additional lettable space could be added by 2032.

The following optimistic and expected employment forecasts were made incorporating both aeronautical and non-aeronautical growth to 2032 (Table 3.3, 3.4 and 3.5).

The above employment forecasts were subsequently used to forecast Parafield Airport's future contribution to Gross State Product (or value added) based on a correlation between employment and GSP. The following total GSP contribution forecasts ($ million) were therefore made incorporating both aeronautical and non-aeronautical growth to 2032 (Table 3.6).

## 3.4.5 Strategic Considerations

One of the more important strategic issues related to Parafield Airport is its impact on noise, urban development and the price of adjacent housing stock. It is concluded from the research that there is no evidence to suggest that, in terms of housing price growth, suburbs contiguous to the Parafield Airport performed worse than the Adelaide metropolitan area during the period or worse than the overall Cities of Salisbury and Playford during the period 2001 to 2010. This analysis is based on data supplied by the Real Estate Institute of South Australia (REISA) and sourced from RP Property data (www.rpdata.com). While this analysis is performance-based, it is important to recognise that suburbs contiguous to the Parafield Airport may have started from a lower base because of their proximity to the airport. However, the important finding is that being contiguous to the airport does not appear to have disadvantaged the suburbs in terms of price growth potential and there appears to be no correlation between house prices in the region and proximity to the airport.

The key strategic issues to emerge from the business survey include:

1. For the aviation industry, location is a major

Table 3.3 Aeronautical and Non-Aeronautical Employment and Forecast Growth to 2032 (FTE)

| Forecast Growth | 2008 | 2011 | 2012 | 2017 | 2022 | 2027 | 2032 |
|---|---|---|---|---|---|---|---|
| Optimistic | 1713 | 1914 | 2314 | 2954 | 3279 | 3577 | 3872 |
| Expected | 1713 | 1914 | 2018 | 2501 | 2712 | 2897 | 3080 |

Table 3.4 Aeronautical Employment and Forecast Growth to 2032 (FTE)

| Forecast Growth | 2008 | 2011 | 2012 | 2017 | 2022 | 2027 | 2032 |
|---|---|---|---|---|---|---|---|
| Optimistic | 374 | 418 | 505 | 645 | 716 | 781 | 846 |
| Expected | 374 | 418 | 441 | 546 | 592 | 633 | 673 |

Table 3.5 Non-Aeronautical Employment and Forecast Growth to 2032 (FTE)

| Forecast Growth | 2008 | 2011 | 2012 | 2017 | 2022 | 2027 | 2032 |
|---|---|---|---|---|---|---|---|
| Optimistic | 1339 | 1496 | 1808 | 2308 | 2563 | 2796 | 3026 |
| Expected | 1339 | 1496 | 1577 | 1954 | 2119 | 2264 | 2407 |

Table 3.6 Aeronautical and Non-Aeronautical GSP Forecast Growth to 2032 ($million)

| Forecast Growth | 2008 | 2011 | 2012 | 2017 | 2022 | 2027 | 2032 |
|---|---|---|---|---|---|---|---|
| Optimistic | 184.5 | 184.3 | 222.8 | 284.4 | 315.7 | 344.4 | 372.8 |
| Expected | 184.5 | 184.3 | 194.3 | 240.7 | 261.1 | 279.0 | 296.5 |

strength for a number of reasons, including ease of access (staff, clients, suppliers, etc.), access to transport (rail and bus), access to the university and proximity to Adelaide Airport airspace (for training).

2. For retailers and businesses generally, the high traffic volume and main road frontages are the major strengths.
3. Aged and run down aviation facilities appear to be the major weaknesses and complaint from tenants and users. This relates to airport infrastructure with a particular focus on public toilet facilities. Other concerns include a lack of car parking (including undercover) and aircraft hangar space.
4. Public uncertainty about the future of the airport may be restricting private investment in airport facilities.
5. There is a perceived opportunity for the airport to increase patronage through promotion and being more cost effective (compared with regional airports). Other opportunities noted included the potential for food outlets (staff and clients) and replacement of tired infrastructure with a new industrial precinct.

As identified previously, the number of aircraft movements appears to have peaked in recent years and fallen by 17% during 2010/2011 in what appears to have been a correction for growth in previous years along with economic uncertainty and increasing regional competition. However, the business survey indicates that there is still potential for growth in aviation business and that this could be accelerated by two strategies:

- an improvement in aviation related site infrastructure; and
- a well-researched and focussed marketing strategy including improved cost competitiveness.

Organic growth is likely to come from the aviation training activities but there is longer term potential in the developing mining and defence sectors.

Mining developments, especially Olympic Dam, will require workers and contractors to be transported on a regular basis and Parafield is well placed to cater for such demand. There are already regular fly-in-fly-out charter services from Parafield to the Beverley and Honeymoon mines. Defence is already a strong industry contributor in the region and Parafield has benefited from several defence contractors being located at the airport (e.g. Mincham Aviation; TAE/NAC – formerly Tenix). There is clearly the potential for more defence contractors to be located at Parafield as the industry develops over time, especially given Parafield's close proximity to the Defence Science and Technology Organisation (DSTO) and Edinburgh air base.

Finally, the airport's contribution to exports and the State Strategic Plan through flight training activities is significant (especially Flight Training Adelaide).

The export value of flight and other aviation training at Parafield is estimated from the business survey to be in the order of $20 - $30 million per annum supporting approximately 300 direct and indirect jobs. There is good potential for future expansion of flight training along with other aviation training such as engineering, and the Parafield location and infrastructure are clearly strengths in supporting this activity. For example, the Parafield Airport TAFE Campus is dedicated to specialised training of pilots (underpinning knowledge and theory only) and Licensed Aviation Maintenance Engineers.

It is understood that TAFE is currently updating all processes, systems and training materials in preparation for approval from the Civil Aviation Safety Authority (CASA) to operate as a CASA appointed Maintenance Training Organisation under new regulations. The University of South Australia also recently announced that it will increase its number of pilot training students from 25 to 300 which will see an increase in staffing and resources.  The above expansion plans point to continued growth in aviation training over the next few years.

# 4 FORECASTS

## 4.1 INTRODUCTION

Parafield Airport is one of the busiest General Aviation (GA) airports in Australia. In 2010/2011 Parafield Airport was the fourth busiest GA airport behind Jandakot, Moorabbin and Bankstown.

Parafield Airport has four runways and practical ultimate capacity for 436,800 fixed wing and approximately 13,200 rotary wing for a total 450,000 movements annually. It is dominated by pilot training operators which have contracts with many of the major airlines in Australasia.

GA at Parafield is dominated by pilot training and recreational activities. There are a range of other GA activities which occur from time to time such as crop dusting, aerial photography, search and rescue, fire fighting and policing. Of recent times there has been an increase in charter services to service mining activities in South Australia. There is, however, no accurate data available on the purpose of each movement.

PAL has installed a camera system to capture arrivals and departures to/from the airport's runway system in order to verify aircraft movement data provided by Airservices. These data together with data provided by the major flying schools based at Parafield has led PAL to adopt the aircraft movement data provided by Airservices for the 2010/2011 financial year as being 200,272 movements (refer to Table 4.1)

## 4.2 PAST AIR TRAFFIC MOVEMENTS

The past traffic performance for Parafield Airport for the period 1988 to 2008 was reviewed by Tourism Futures International in 2009 (TFI 2009). Figure 4.1 charts the traffic levels over that period.

In 2008, flying training at Parafield Airport sustained its high level of activity with 228,398 aircraft movements recorded in 2007/08 during airport control tower hours of 0800 to 1800 each day.

Table 4.1 Aircraft Movements at Parafield Airport

| Type of Movement | Movements FY 2010/2011 | % |
|---|---|---|
| Training | | |
| FTA | 136,860 | 68 |
| Other Flying Schools | 50,630 | 25 |
| Total | 187,490 | 94 |
| Other | | |
| Fixed Wing | 10,568 | 5 |
| Rotary Wing | 2,214 | 1 |
| Total | 12,782 | 6 |
| Total Movements | 200,272 | 100 |

The traffic falls shown in Figure 4.1 result from changes in the demand for pilots and, over the longer time period, from changes in tower monitoring periods. The falls from 2002 and into 2004 resulted from the collapse of Ansett and the cutback of many training contracts in the wake of the SARS epidemic in Asia, the September 11 terrorist attack and the Asian economic crisis.

Traffic declined by 9.2% in 2003/04 but increased by 31.1% in 2004/05, 12.1% in 2005/06 and 21.4% in 2006/07. Growth in 2007/08 was a more modest 0.7%. The sustained growth over 2004/05 to 2006/07 added 63% to the 2002/03 traffic levels.

FTA is the main trainer at Parafield Airport. FTA has trained students from Qantas, Cathay Pacific Airlines, China Airlines, Chinese Rescue and Salvage, Dragonair, JAL Express and the Hong Kong Government Flying Service. The majority of aircraft movements at Parafield Airport are generated by FTA. FTA also commenced helicopter pilot training during 2008, having acquired two new helicopters during that year.

Training of local pilots also continues to grow through the services of The University of South Australia Aviation Academy, Adelaide Flight Training Centre, Forsyth Aviation and the Bruce Hartwig Flying School.

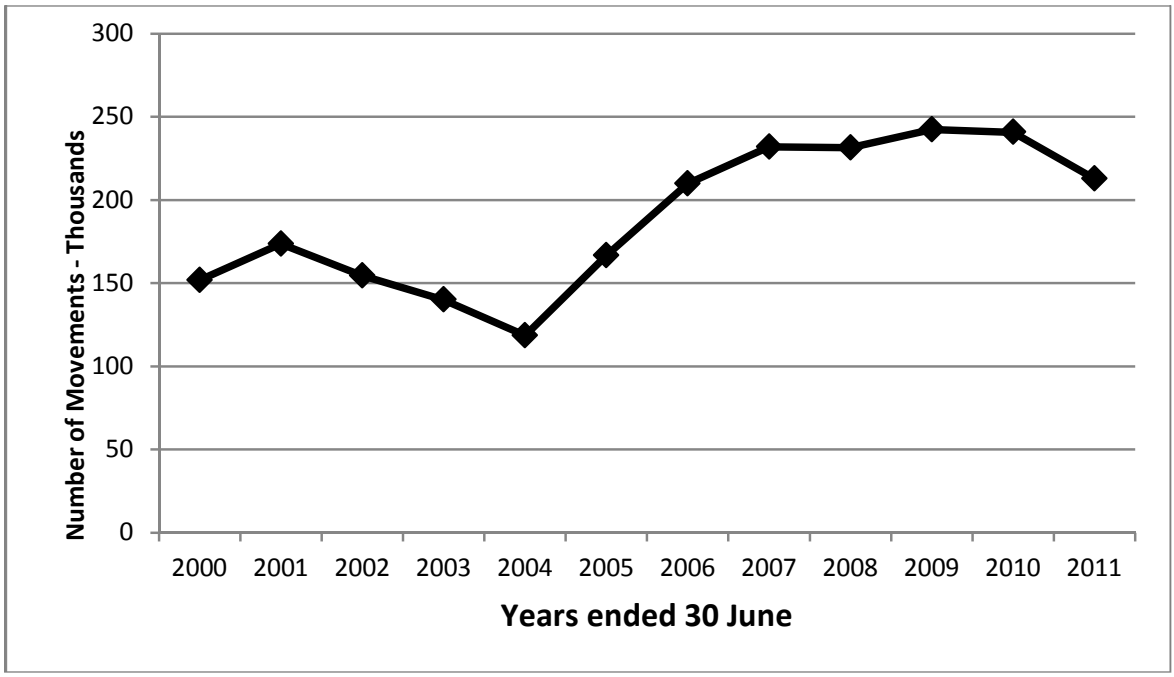



Figure 4.1 Aircraft Movements at Parafield Airport

Source: Airservices Australia Website

## 4.3 FUTURE AIR TRAFFIC MOVEMENTS

To establish a forecast for Parafield, the Gross State Product (GSP) has been used as a proxy for overall activity growth. The following scenarios (Table 4.2) have been used for GSP based on forecasts published in the 2011 South Australian Supply and Demand Outlook by the Australian Energy Market Operator Ltd (AEMO).

### 4.3.1 FTA Forecasts

As FTA accounts for 68% of the current Parafield movements, they were consulted as to their forecasts in the short term. For fixed wing aircraft, they provided forecast flying hours out to December 2012. These indicated a substantial growth in 2011 and 2012 of approximately 10% each year. FTA saw available visual flight rules (VFR) airspace and aircraft fleet size as constraints on future growth, however moves towards reduced requirements for flying hours for commercial licenses and the increased use of simulators would provide offsets to student growth. Student numbers for 2012 are expected to grow 10% on 2011 numbers. FTA has been approved for training students who do not have a university degree; they have some 70 private students on a waiting list at this time. There continues a very strong demand from Asia for pilot training. The short term forecast above has been used, reverting back to GSP thereafter. The year 2011 saw a substantial reduction in rotary aircraft movements which FTA explains was due to a reduction in the number of helicopter students from 10 to 3. Student numbers are expected to rise to 9 from March 2012 and then to 15 by March 2013. Helicopter training is expected to continue growing, however current facilities have a capacity for only 30 students. Further, current airfield facilities for helicopters, especially for night operations, provide a considerable constraint due to their impact on fixed wing operations. A conservative outlook has been adopted of an additional increase of 1 student each 3 years beyond FTA's forecast student numbers.

Table 4.2 GSP Scenarios Used ($millions)

| GSP Scenarios | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | Growth Rate (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | 80,814 | 83,232 | 85,287 | 87,402 | 89,665 | 91,305 | 92,586 | 93,471 | 94,142 | 94,787 | 95,704 | 1.7 |
| Base | 81,250 | 84,411 | 86,517 | 88,835 | 91,530 | 93,685 | 95,679 | 97,724 | 99,863 | 102,100 | 104,573 | 2.6 |
| High | 81,519 | 86,040 | 88,447 | 91,310 | 94,470 | 97,129 | 99,692 | 102,688 | 106,019 | 109,486 | 113,035 | 3.3 |

Source: 2011 South Australian Supply and Demand Outlook, AEMO, 2011

Table 4.3 Projected Fixed Wing Growth Rates to 2031

| | Growth Rate (%) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TFI GA Forecast ADL | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
| Low | 2.8 | 1.1 | 0.1 | 0.1 | 0.6 | 1.0 | 0.2 | 0.2 | 1.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Base | 4.8 | 3.1 | 2.1 | 2.0 | 2.5 | 2.0 | 0.6.0 | 0.6 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 | 1.2 | 1.1 |
| High | 7.8 | 6.0 | 5.0 | 5.0 | 4.9 | 3.4 | 2.0 | 2.0 | 2.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.7 | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 | 1.5 |

Source: Tourism Futures International, GA Forecasts 2011

## 4.3.2 Helistar

The forecasts include an allowance for the proposed movement of Helistar operations to Adelaide which will reduce other helicopter movements at Parafield by 1,150 per annum (2011). This move will enable the closing of the eastern helipad.

## 4.3.3 Heavier Fixed Wing Forecasts

There has been a growth in heavier aircraft using Parafield (greater than 7 tonnes maximum take off weight) in the last 3 years. This reflects increased charter work partially due to mining operations in South Australia. As this is expected to increase in the near term, the TFI forecasts for GA traffic at Adelaide Airport have been used to escalate the heavier category of fixed wing operations (see Table 4.3).

## 4.3.4 Calendar Year

Forecasts have been calculated initially for financial years using the 2010/11 financial year movements (Table 4.1) as a base and by applying the growth forecast methodologies described above, which are all financial year based. Table 4.4 is a worked example of this methodology showing how the 2011 base year movement of 209,000 has been derived.

Tables 4.5 to 4.7 and Figure 4.2 have been converted to a calendar year basis to align with the Parafield Master Plan by averaging the movements between adjacent financial years. Thus CY2011 is the simple average of FY2010/11 and FY2011/12 movements; CY2012 is the simple average of FY2011/12 and FY2012/13.

Table 4.4 Calendar Year Forecast Calculation for CY2011

| Type of Movement | Actual FY 2010/11 | Forecast FY 2011/12* | Forecast CY 2011** |
|---|---|---|---|
| Training | | | |
| FTA | 136,860 | 152,905 | 144,883 |
| Other Flying Schools | 50,630 | 52,598 | 51,614 |
| Total | 187,490 | 205,503 | 196,496 |
| Other | | | |
| Fixed Wing | 10,568 | 10,992 | 10,780 |
| Rotary Wing | 2,214 | 1,105 | 1,660 |
| Total | 12,782 | 12,097 | 12,440 |
| Total Movements | 200,272 | 217,600 | 208,936 |

Notes:

*Using the forecast parameters as set out in Section 4.3.1-4.3.3

**Simple average of FY movement 2010/11 and 2011/12

## 4.4 MOVEMENT FORECASTS

The forecasts using the above assumptions are presented in Table 4.5.

The base case forecasts analysed by various types of activity are presented in Table 4.6.

Parafield Airport has four runways and a practical capacity for fixed wing aircraft of 436,800 movements per annum (Aerodrome Design 2011). Table 4.7 shows forecast fixed wing movements do not reach capacity even in the high case during the 20-year period up until 2031.

Table 4.5 Aircraft Movement Forecasts

| | Low | | Base | | High | |
|---|---|---|---|---|---|---|
| Calendar Year | Forecast Movements (000s) | Annual Growth (%) | Forecast Movements (000s) | Annual Growth (%) | Forecast Movements (000s) | Annual Growth (%) |
| 2011 | 209 | | 209 | | 209 | |
| 2012 | 231 | 10.7 | 232 | 10.8 | 233 | 11.1 |
| 2013 | 252 | 9.2 | 253 | 9.3 | 255 | 9.5 |
| 2014 | 262 | 4.0 | 264 | 4.3 | 267 | 4.8 |
| 2015 | 268 | 2.3 | 271 | 2.8 | 275 | 3.2 |
| 2020 | 284 | 0.7 | 302 | 2.1 | 318 | 2.9 |
| 2025 | 300 | 1.2 | 340 | 2.5 | 371 | 3.2 |
| 2030 | 316 | 1.2 | 382 | 2.4 | 431 | 3.2 |
| 2031 | 320 | 1.2 | 391 | 2.4 | 445 | 3.2 |

Table 4.6 Composition of Base Case Forecasts

| | Forecast Movements (000s) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar Year | Day | Night | Training | Other | Landings | Circuits | Fixed Wing | Rotary Wing |
| 2011 | 202 | 7 | 196 | 12 | 61 | 148 | 200 | 9 |
| 2012 | 224 | 8 | 219 | 12 | 67 | 165 | 216 | 16 |
| 2013 | 245 | 8 | 240 | 13 | 72 | 181 | 227 | 26 |
| 2014 | 256 | 8 | 251 | 13 | 74 | 190 | 233 | 31 |
| 2015 | 263 | 8 | 258 | 13 | 76 | 185 | 239 | 32 |
| 2016 | 269 | 9 | 264 | 14 | 78 | 200 | 245 | 33 |
| 2017 | 274 | 9 | 269 | 14 | 80 | 203 | 250 | 33 |
| 2018 | 280 | 9 | 275 | 14 | 81 | 208 | 255 | 34 |
| 2019 | 287 | 9 | 281 | 15 | 83 | 213 | 261 | 35 |
| 2020 | 293 | 9 | 287 | 15 | 85 | 217 | 267 | 35 |
| 2021 | 300 | 10 | 294 | 15 | 87 | 223 | 274 | 36 |
| 2022 | 307 | 10 | 302 | 16 | 89 | 228 | 280 | 37 |
| 2023 | 314 | 10 | 308 | 16 | 91 | 233 | 287 | 37 |
| 2024 | 322 | 10 | 316 | 16 | 93 | 239 | 294 | 38 |
| 2025 | 330 | 11 | 323 | 17 | 96 | 244 | 301 | 39 |
| 2026 | 337 | 11 | 330 | 17 | 98 | 250 | 308 | 39 |
| 2027 | 345 | 11 | 338 | 18 | 100 | 256 | 316 | 40 |
| 2028 | 353 | 11 | 347 | 18 | 103 | 262 | 323 | 41 |
| 2029 | 361 | 12 | 354 | 18 | 105 | 268 | 331 | 41 |
| 2030 | 370 | 12 | 363 | 19 | 108 | 274 | 339 | 42 |
| 2031 | 379 | 12 | 372 | 19 | 110 | 281 | 347 | 43 |

Note: Minor variations in the forecast numbers will occur due to rounding errors.

Table 4.7 Fixed Wing Forecast Movements

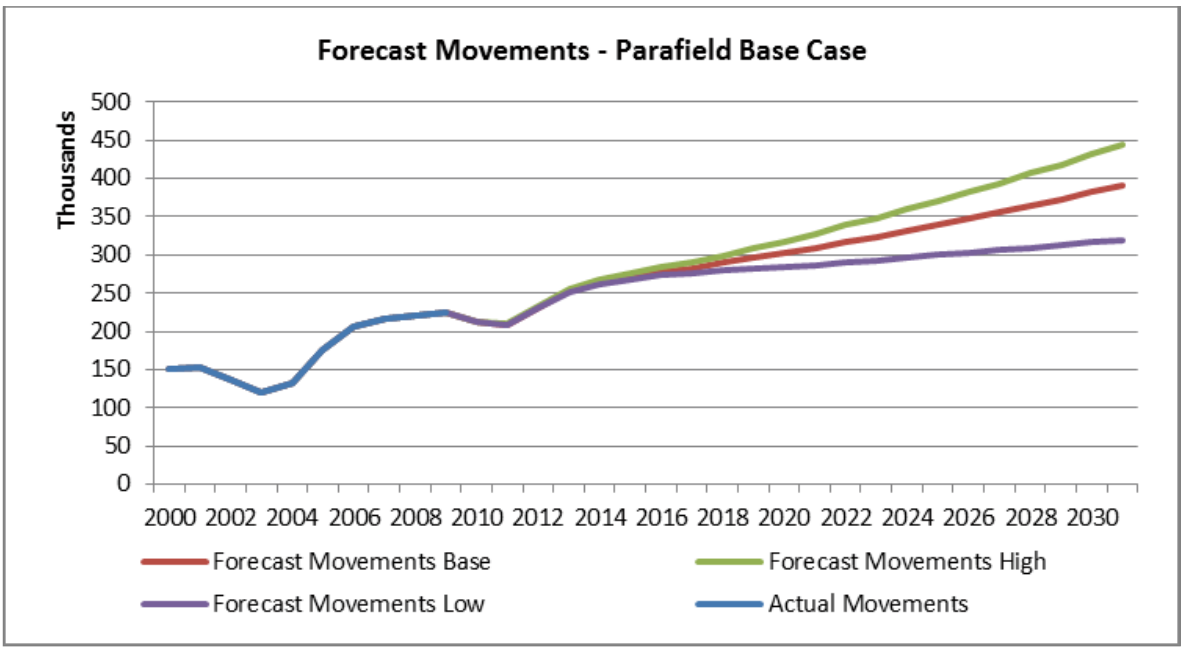
| Fixed Wing Forecast Movements (000s) | | | |
|---|---|---|---|
| Calendar Year | Low | Base | High |
| 2011 | 200 | 200 | 200 |
| 2012 | 215 | 216 | 217 |
| 2013 | 226 | 227 | 228 |
| 2014 | 231 | 233 | 236 |
| 2015 | 236 | 239 | 244 |
| 2020 | 249 | 267 | 283 |
| 2025 | 261 | 301 | 332 |
| 2030 | 274 | 339 | 389 |
| 2031 | 277 | 347 | 401 |

The base, low and high forecast movements at Parafield are shown in Figure 4.2, which also shows the published movement numbers for the past 10 years.

## 4.5 RUNWAY CAPACITY

There are many varied components to an aviation system such as Parafield Airport, such that any single value of capacity is misleading. The 1996 Draft Master Plan prepared for the FAC indicated that a figure of 520,000 movements per year would be the notional ultimate capacity for Parafield Airport. This assumes some arrival and departure traffic on each runway. However, a re-evaluation of that capacity in 2004 indicated that a practical ultimate capacity of 450,000 movements per year would be more realistic. This MP has accepted this ultimate capacity figure as there has been no significant changes in the airside infrastructure or the typical fleet mix proposed for the airport which would warrant a review of this capacity figure. This ultimate runway capacity of 450,000 movements per year would not be realised within the planning horizon of this MP. More detailed discussion on aircraft movement forecasts is presented in Section 4.3.

Figure 4.2 Historical and Predicted Movement Numbers



# 5 AIRCRAFT NOISE METRICS AND ANEF/ANEC

## 5.1 INTRODUCTION

Noise is associated with many activities that involve a release of energy, including transport movements arising from the operation of airports. Noise from aircraft is consistently identified as the most significant environmental effect of airport operations.

The most effective means for reducing the impact of aircraft noise is through the proper planning of land use for areas adjacent to the airport. Other means include alternative runway alignments and/or adopted flight path procedures, restrictions of aircraft movements by aircraft type or the implementation of aircraft operational procedures aimed at achieving desired noise abatement objectives.

The recent trend in renewing airline fleets also has the advantage that the newer aircraft types are generally much quieter than existing or older aircraft types.

Airservices Australia has provided a more detailed spread of approaching and departing aircraft in the Parafield airspace.

The remodelled ANEFs included in this MP therefore reflect this greater detail, providing the most accurate ANEFs for community consideration and will also address the ANEF concerns raised by the Minister in his letter of deferral of the 2009 draft Master Plan, dated 5 July 2010.

The *Airports Act 1996* requires a MP to include forecasts of noise levels resulting from the operation of the airport (*Section 71 – Contents of Draft or Final Master Plan* of the *Airports Act 1996*). There are many ways to forecast and display aircraft-related noise levels and the Australian Government has specified the use of the computer based Integrated Noise Model (INM) which produces Australian Noise Exposure Forecasts (ANEFs) for the prediction of exposure to aircraft noise.

ANEFs are one measure to describe aircraft noise in relation to impacts on surrounding lands and communities, but recent evidence suggest that there is little relationship between noise exposure attributed to ANEF modelling and aviation-related noise complaints.

Therefore, additional tools have been devised to better model and communicate areas around airports which will experience noise from aircraft. ANEFs are still required by law and additionally by government planning authorities to plan and regulate land use and proposed developments around airports.

PAL has also included in this MP two additional descriptors of airport noise at Parafield Airport:-

- Aircraft Over-flight Maps showing the likely number of aircraft that will overfly specific areas round the airport from arrivals, departures, circuit training and a combination of all three are described and included in section 5.12.1; and
- maps showing the numbers of noise events above 60 and 70 dB caused by overflying aircraft and are also shown in 5.12.2 (a decibel is a direct measure of the sound pressure emanating from a defined source) – the background to how these maps were prepared is also provided in this section.

## 5.2 NOISE PLOTS

ANEI, ANEF and ANEC plots are plans of the airport and surrounding localities on which contours of equal (usually 20, 25, 30 and 35) noise exposure units have been superimposed. The level of noise impact increases as the noise level value increases. Each of the three variations of contour plans are closely related but differ in the type of base data and assumptions used in their preparation. The definitions and relationship of each type are as follows:

- ANEI (Australian Noise Exposure Index) - An ANEI is a plot of defined noise exposure based on the actual operations of the airport and uses an analysis of actual aircraft movements over a twelve month period, usually a calendar year. It represents the best estimate of the actual noise exposure for a particular period

rather than for some forecast future scenario. An ANEI is primarily used to establish a "base case" from which an ANEF and ANECs can be developed.

- ANEF (Australian Noise Exposure Forecast) - An ANEF is a plot of estimated noise exposure based on a forecast of aircraft movements and fleet mix for a defined future horizon. The ANEF provides an indication of the change in noise emissions over time, and is used for developing appropriate land use zoning of areas affected by aircraft noise.
- ANEC (Australian Noise Exposure Concept) – An ANEC is an illustration of the aircraft noise exposure at a site using data which may bear no relationship to actual or future situations. Its primary function is to assess the noise effects of various operational or airport development alternatives. Although the land use compatibility table can be used to evaluate the ANEC values, ANEC information is not used for definitive land use planning. However, it serves as a valuable planning guide in assessing the relative impact of future development options. ANEC plots have been produced for the long-term theoretical capacity of the airport as part of this plan.

## 5.3 THE AUSTRALIAN NOISE EXPOSURE FORECAST SYSTEM

The ANEF system is the aircraft noise exposure index currently adopted in Australia. The aircraft Noise Exposure Forecast (NEF) technique was first developed in the United States in the late 1960s and is recognised internationally. It was subsequently modified in Australia as the ANEF in 1982.

The ANEF system provides a scientific measure of noise exposure from aircraft operations around airports. It can also provide valuable guidance for land use planning in the vicinity of the airport. Table 5.1 shows the land use compatibility as recommended by Standards Australia: Australian Standard AS2021-2000 *Acoustics - Aircraft Noise Intrusion Building, Siting and Construction*.

The ANEF computation is based on forecasts of traffic movements on an average day. Allocations of the forecast movements to runways and flight paths are on an average basis and take into account the existing and forecast air traffic control procedures at the airport which nominate preferred runways and preferred flight paths for noise abatement purposes. The following factors of aircraft noise are taken into account in calculating the ANEF:

- the intensity, duration, tonal content and spectrum of audible frequencies of the noise of aircraft takeoffs, landings and reverse thrust after landing (the noise generated on the airport from ground running of aircraft engines or taxiing movements is not included for practical reasons);
- the forecast frequency of aircraft types and movements on the various flight paths;
- the average daily distribution of aircraft takeoffs and landing movements in both daytime (7am to 7pm) and night time (7pm to 7am) hours; and
- the topography of the area surrounding the airport.

## 5.4 CALCULATION OF THE ANEF

The ANEF system combines noise level and frequency of operations to calculate the average noise level at any point along and to the side of the flight path using the following reasonably simple mathematical procedure.

Partial ANEFs are calculated for the frequency of number of night-time and day-time operations of each aircraft type and flight path. These calculations use a value of Effective Perceived Noise level (EPNL) for each aircraft and takes into account all known annoying aspects in the temporal, frequency spectrum and spatial domain. The EPNL level is obtained by the algebraic addition of the maximum perceived noise level at any instant corrected by noise tonal and duration factors. The EPNL unit is also used for the international certification of new aircraft. These Partial ANEF values are computed for each significant type of noise intrusion. The total ANEF at any point on the ground around the airport is composed of all individual noise exposures (summed logarithmically) produced by each aircraft type operating on each path over the period of one day.

These calculated values do not take account of any background noise levels such as road or rail activities.

## 5.5 NOISE THRESHOLD LEVELS

The effects of noise can range from minor to very serious depending on the noise level, its duration and the subject's sensitivity. Noise, by definition being unwanted sound, elicits a wide range of individual responses in the vicinity of airports and the reasons for the differences between individuals are largely socially-based and too complex to quantify. Research has indicated however, that, unlike an individual's reaction, community response to noise impact issues is more predictable.

Table 5.1 AS2021 Table of Building Site Acceptability Based on ANEF Zones

| | ANEF Zone of Site | | |
|---|---|---|---|
| Building type | Acceptable | Conditionally Acceptable | Unacceptable |
| House, home unit, flat, caravan park | Less than 20 ANEF (Note 1) | 20 to 25 ANEF (Note 2) | Greater than 25 ANEF |
| Hotel, motel, hostel | Less than 25 ANEF | 25-30 ANEF | Greater than 30 ANEF |
| School, university | Less than 20 ANEF (Note 1) | 20 to 25 ANEF (Note 2) | Greater than 25 ANEF |
| Hospital, nursing home | Less than 20 ANEF (Note 1) | 20-35 ANEF | Greater than 25 ANEF |
| Public building | Less than 20 ANEF (Note 1) | 20-30 ANEF | Greater than 30 ANEF |
| Commercial building | Less than 25 ANEF | 25-35 ANEF | Greater than 35 ANEF |
| Light industrial | Less than 30 ANEF | 30-40 ANEF | Greater than 40 ANEF |
| Other industrial | Acceptable in all ANEF zones | | |

Notes:

1. The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of Clause 2.3.2 in AS2021 – 2000 may be followed for building sites outside but near to the 20 ANEF contour.
2. Within 20 ANEF to 25 ANEF, some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate (see also Figure A1 of Appendix A in AS2021 – 2000).
3. There will be cases where a building of a particular type will contain spaces used for activities which would generally be found in a different type of building (e.g. an office in an industrial building). In these cases Table 5.1 should be used to determine site acceptability, but internal design noise levels within the specific spaces should be determined by Table 3.3 in AS2021 – 2000.
4. This Standard does not recommend development in unacceptable areas. However, where the relevant planning authority determines that any development may be necessary within existing built-up areas designated as unacceptable, it is recommended that such development should achieve the required ANR determined according to Clause 3.2 in AS2021 – 2000. For residences, schools etc., the effect of aircraft noise on outdoor areas associated with the building should be considered.
5. In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations.

In the area outside the 20 ANEF contour noise exposure may be of concern for some individuals. Within the area between the 20 to 25 ANEF contour, levels of noise are generally accepted to emerge as an environmental problem, and within the 25 ANEF contour the noise exposure becomes progressively more severe. Table 5.1 compares land use to acceptable ANEF contour levels.

## 5.6 THE INTEGRATED NOISE MODEL

Studies of aircraft noise impacts presented for Parafield Airport were carried out using the United States Federal Aviation Administration (FAA)-approved Integrated Noise Model (INM) Version 7.0b. This internationally recognised, computer-based noise simulation model calculates contours from an analysis of the contribution the various defined aircraft and their operations have on the overall noise emissions from the airport. The resulting noise 'footprint' can then be used to assess the relative impacts different aircraft fleets and/or operational procedures have on the surrounding environs. The INM model contains a database of civil passenger and military aircraft along with their performance and typical noise characteristics.

The impact of aircraft noise was modelled for two scenarios:

- the highest predicted number of aircraft and fleet mix for 2031; and
- the highest predicted number of aircraft and fleet mix at maximum (ultimate) capacity.

The latter scenario is estimated to be the worst-case in terms of potential noise impacts and provides a safety margin for future planning.

## 5.7 FLIGHT MOVEMENTS

The numbers of flights operating from Parafield Airport in the future are discussed in detail in the previous section (Chapter 4). The numbers of flights used in the noise modelling were the "Base Case" scenario for the 2031 year (20-year horizon as specified in the Act) and the highest numbers of movements as predicted at this stage under current air traffic and airport standards for the airport in the ultimate capacity modelling. These are provided in Table 5.2 and 5.3 respectively.

## 5.8 FLEET MIX

The fleet mix of aircraft operating from Parafield Airport twenty years or more into the future cannot be defined exactly. At best, the mix of aircraft using the airport in the future can only be inferred from current fleet mixes and discussions on the intentions of the flight training facilities, airlines and industry sources regarding future purchases and any impending retirements of aircraft in the 20-year period. The expected fleet mixes for domestic, regional and general aviation that were used for the modelling are provided in Tables 5.2 and 5.3, and for the majority of the movements, generally reflect the current fleet mix. PAL has recognised in its assessment and fleet mix, the potential for new generation large aircraft such as the Q400 being used for charter operations.

## 5.9 RUNWAY UTILISATION

The Civil Aviation Safety Authority (CASA) recommends in accordance with ICAO (1987) Annex 14, that the number and orientation of runways at an aerodrome should be such that the usability factor of the aerodrome is not less than 95% for the aeroplanes that the aerodrome is intended to serve. In Australia, it is usual practice to aim for a usability factor of 99.8% for capital city regular public transport airports and 99.5% for other aerodromes (CASA 1991). The Manual of Standards Part 139 (MOS 139) also requires that where runways are provided essentially for light aeroplane operations, the maximum permissible cross-wind component to be used for determining runway usability is to be 10 knots where ab initio flying is carried out.

Table 5.2 Predicted Movements in 2031

| INM Code | Aircraft Types | Total Annual Movements |
|---|---|---|
| General Aviation | | |
| BEC58P (267) | DA42 DA42 Diamond Aircraft Industries (D) | 44,424 |
| CNA441 (286) | SC7 Skyvan SHORTS (T) | 59 |
| CNA500 (287) | C500 Citation I, Citation 500 CESSNA (J) | 32 |
| COMSEP (288) | DH1 Chipmunk DHC-1 DE HAVILLAND (P) | 450 |
| DHC6 (289) | B190 1900 Airliner BEECH (T) | 898 |
| EMB145 (290) | SIRA G-SIRA EMBRAER (J) | 24 |
| GASEPF (265) | GASEPF 1985 1-ENG FP PROP (P) | 285,920 |
| GASEPV (266) | GASEPV 1985 1-ENG VP PROP (P) | 10,192 |
| LEAR35 (294) | BE40 400A Beechjet (T1 Jayhawk) BEECH (J) | 32 |
| MU3001 (264) | C560 Citation V 560 CESSNA (J) | 3,904 |
| DHC830 (263) | DH8D Dash 8 - 400 DE HAVILLAND CANADA (T) | 1560 |
| Helicopters | | |
| B407 | BELL 407 | 4,296 |
| EC130 | Eurocopter EC-130 | 8,591 |
| R22 | Robinson R22B | 8,591 |
| SC300C | Schweizer | 21,517 |
| Total Annual | | 390,486 |

Table 5.3 Predicted Movements at Ultimate Capacity

| INM Code | Aircraft Types | Total Annual Movements |
|---|---|---|
| General Aviation | | |
| BEC58P (267) | DA42 DA42 Diamond Aircraft Industries (D) | 51,196 |
| CNA441 (286) | SC7 Skyvan SHORTS (T) | 67 |
| CNA500 (287) | C500 Citation I, Citation 500 CESSNA (J) | 38 |
| COMSEP (288) | DH1 Chipmunk DHC-1 DE HAVILLAND (P) | 520 |
| DHC6 (289) | B190 1900 Airliner BEECH (T) | 1,032 |
| EMB145 (290) | SIRA G-SIRA EMBRAER (J) | 30 |
| GASEPF (265) | GASEPF 1985 1-ENG FP PROP (P) | 329,496 |
| GASEPV (266) | GASEPV 1985 1-ENG VP PROP (P) | 9,181 |
| LEAR35 (294) | BE40 400A Beechjet (T1 Jayhawk) BEECH (J) | 38 |
| MU3001 (264) | C560 Citation V 560 CESSNA (J) | 4,500 |
| DHC830 (263) | DH8D Dash 8 - 400 DE HAVILLAND CANADA (T) | 4,381 |
| Helicopters | | |
| B407 | BELL 407 | 4,951 |
| EC130 | Eurocopter EC-130 | 9,900 |
| R22 | Robinson R22B | 9,900 |
| SC300C | Schweizer | 24,796 |
| Total Annual | | 450,021 |

As flying training, including ab initio flying training, is the major activity at Parafield Airport, the maximum desirable cross wind component is 10 knots. Based on Bureau of Meteorology data, this wind analysis for a 10 knot crosswind component, runway usability for daylight hours, considering all winds, is as follows:

- Whole airport 92.7%
- Directions 03-21 79.0%
- Directions 08-26 77.8%
- Direction 03 65.1%
- Direction 21 64.3%
- Direction 08 41.3%
- Direction 26 42.2%.

This analysis shows that the usability of Parafield Airport based on a 10 knot crosswind is below the Australian and ICAO recommended standards. However, based on a 15 knot cross wind, which is within the capability of most modern aircraft including those operating at Parafield Airport, but not compromised by pilot limitations, a runway usability of 98.8% is available.

In practice, the actual usage of the runway system will depend on a number of factors such as wind, taxiing distance, destinations, runway availability, maintenance, etc. The actual split of runway usage of Parafield Airport is:

- Direction 03 26.0%
- Direction 21 49.0%
- Direction 08 4.0%
- Direction 26 21.0%.

## 5.10 FLIGHT PATHS

The impacts of aircraft noise will be greatly affected by the flight paths that are used by aircraft approaching the airport or after takeoff. The flight paths that are used are determined by the runway used (discussed previously in Section 5.9) and the destination of the flight.

Generally, the tracks used by aircraft have been chosen to limit the impact of noise on surrounding land uses, but within the bounds of operational guidelines and safety standards imposed by Airservices and CASA.

### 5.10.1 Arrivals and Departures

Maps showing the general placement of flight paths are provided in Appendix A Figures A1 to A4 (arrivals), Figures A5 to A8 (departures), Figures A9, A10, A12, A15 and A16 (Circuits) and A11, A13 and A14 (helicopters). These flight paths have been discussed with Air Services personnel at Parafield Airport and reflect the current operating procedures.

Most importantly, the flight paths used are based on measured tracks from the new RADAR tracking and have been 'spread' to better represent the lateral extent of the areas the aircraft fly in.

### 5.10.2 Circuits

Circuits within Australia are defined by CASA (Civil Aviation Regulation (1988) CAR 92, Civil Aviation Advisory Publications).

#### Fixed Wing Circuits

Circuits are an essential part of pilot training which is the most common use for circuits at Parafield. A typical circuit is made up of the following basic components:

- take off into the wind and commence climb;
- turn cross wind at 500 ft or more above ground level and continue climb;
- level at 1,000 ft and turn downwind;
- turn base (cross wind) and commence descent; and
- turn final and land, touch and go or full stop.

To demonstrate where aircraft on a typical circuit fly, a series of diagrams have been created (see Appendix A, Figures A9, A10, A12, A15 and A16). These circuits have been produced using the training aircraft types used and forecast for use at Parafield Airport on each of the four runways, using both ends. The runways are 03R/21L, 03L/21R, 08L/26R and 08R/26L. Night operations including helicopters are conducted from 03L/21R only The circuits track the theoretical inner and outer paths flown by the aircraft under set conditions and with no human, mechanical or environmental variation. Flight parameters were set following CASA circuit guidelines. Aircraft climb to 500 ft above aerodrome level before commencing first turn and continue until levelling flight at 1000 ft above aerodrome level.

Real circuits will vary from the diagrams for many reasons including, but not limited to, the following:

- no two aircraft are the same;
- turning circles and cruise speeds vary by aircraft (like those of motor vehicles);
- wind direction and strength;
- atmospheric pressure;
- air temperature;
- performance of different training aircraft types;
- human variation;
- amount of traffic in the circuit and the need to maintain safe separation;
- training requirement to fly different circuits and landing techniques which involve varying angles of descent; and

- instruction from Air Traffic Control such as to alter path to allow for other circuit traffic, traffic departing or arriving from Parafield Airport.

### Rotary Wing Circuits

Helicopter circuits at Parafield Airport have been developed in liaison between the helicopter flight training school and Airservices, following CASA guidelines. The circuit paths are designed to reduce overflight of residential areas as much as practicable. Tracks predominantly overfly clear space, industrial areas and major roads to reduce the impact of circuit flying on resident areas surrounding the airport. Helicopters continue climb after take-off until levelling out at 800 ft above aerodrome level.

### Night Circuits

When required, night circuits will be flown, but can only operate on runway 03L/21R as this is the only lit runway at Parafield. This means night circuits will only be flown to the West/North West of the runway in the normal circuit pattern. Both fixed wing and rotary winged aircraft fly the same circuit, however training schools liaise with each other when rotary wing night circuits are planned to ensure only fixed wing or rotary winged aircraft fly at one time.

Night flying is an essential component required to achieve a Command Instrument Rating, an important element in advanced flight training.

Parafield Airport is not under curfew, however circuit training is voluntarily restricted to the following hours: Monday to Friday from 7am until 11pm, Saturday from 7am until 9pm and Sunday from 8am until 9pm and New Years Day pursuant to an agreed 'Fly Friendly Policy' (see Section 5.13.1).

## 5.11 MODELLING RESULTS

Maps showing the ANEF for the numbers of aircraft movements expected in 2031 and the ANEC for the ultimate capacity of the airport are shown in Figures A17 and A18 in Appendix A.

Two charts showing firstly a comparison of the 2031 ANEF with the 2025 ANEF and secondly a comparison of the 2031 ANEF with the 2029 ANEF, are shown in Appendix A as Figures A19 and A20 respectively.

The 2031 ANEF contours vary significantly from the 2025 ANEF. Several factors have changed since the 2025 ANEF of the 2004 Master Plan was produced, which has resulted in changes to the 2031 ANEF. These include:

- A change in the International Noise Monitoring (INM) model available which appears to widen contours and now integrates helicopter activity in the model - which it did not in 2004.
- Flight activity data was collected during reduced tower hours in 2004. Estimate calculations show that if the activity data collection window was the same as for 2011 the flying activity could have been around 23% higher than recorded. PAL's data collection since 2009 (including ABASS) has provided a defensible total of actual flights.
- Improved radar data provided actual tracking for arrivals and departures in 2011 compared with previously used theoretical single line tracks. This has resulted in a wider spread of tracks used for the 2031 ANEF.
- Circuit tracks were previously based on single line theoretical tracks. In 2011 PAL used theoretical circuit tracks based on differing performance of aircraft based on forecast fleet mix. This also has resulted in much wider tracking of circuits for the 2031 ANEF.

It is difficult to draw conclusive comparisons between the 2025 and 2031 ANEF's due to the above changes, but analysis suggests without the change in the above listed items, that the 2031 ANEF contours could be similar to the 2025 ANEF.

## 5.12 ALTERNATIVE REPRESENTATION OF AIRCRAFT NOISE IMPACTS

### 5.12.1 Aircraft Overflight Maps

For GA airports in Australia with large numbers of flights by training aircraft, the ANEF system is recognised as having limited applicability in defining which areas of surrounding lands may be affected by aircraft noise. In particular, for training aircraft flying circuits, the location of the overflights and frequency of planes flying overhead is often the cause of noise complaints being registered with authorities.

To address this concern, it is possible to calculate the number of times an area, particularly existing residential, that it is likely to be overflown on an average operating day at the airport by using the refined maps of arrivals and departures flight tracks and the detailed maps of circuits.

Maps showing the location of the probable

overflights and the numbers of these flights per day for Parafield Airport operating at "Ultimate Capacity" are presented in Appendix A, Figures A21 (Circuits) A22 (Arrivals) and A23 (Departures).

This method of demonstrating flight noise and activity is based on the maximum capacity of the airfield (450,000 movements). This capacity may never be reached but is a realistic figure that indicates the maximum aeronautical potential of the airfield in its current configuration.

Therefore, in a worst case scenario and by using colour graduation, the overflight diagrams indicate (purely as a guide) the likely number of over-flights that could be expected to be experienced now and in the future. In that regard, these over-flight maps are a reasonably accurate representation of what is most likely to be experienced in the worst case scenario of the airport reaching its capacity in the years after 2031. However, whilst all reasonable care has been taken to depict these over-flights, there are a number of external influences that may affect the actual performance of an individual aircraft in flight and these are detailed in Section 5.10.2 in Volume 1 of this MP.

Accordingly, these figures are provided to assist persons in the areas identified to understand what is occurring and/or to make a considered decision in respect of likely over-flights now or in the future. These figures can be used by prospective property purchasers to estimate the likely overflights in any particular area around the airport and by land use planners when considering the suitability for future zonings and re-zonings.

### 5.12.2 Noise Event Modelling

The aircraft over-flight maps presented in Section 5.12.1 above, provide an estimate of the number of aircraft that are likely to fly over particular areas surrounding the airport on an average day.

N60 and N70 modelling provides maps of areas that are likely to experience a predicted number of noise events from aircraft flying overhead. N60 noise modelling computes the number of noise events greater than 60 dB(A) on the "average" day over particular areas. These flight tracks are represented at Appendix A in Volume 5 of this MP.

Similarly, N70 maps represent the number of noise events greater than 70 dB(A) on the "average" day over the same areas. These maps allow stakeholders to interpret aircraft noise issues based on actual counts of aircraft with noise profiles greater than 60 and 70 decibels over the flight paths that aircraft use around Parafield Airport.

## 5.13 AIRCRAFT NOISE MITIGATION

### 5.13.1 Aircraft Noise Analysis

The ANEF for 2031 (Figure A17) and the ANEC for ultimate capacity (Figure A18) show that there may be some increase in the residential areas affected by airport noise with the increased air traffic expected in the future. These impacts will be alleviated to some degree by the gradual replacement of the existing fleet with quieter aircraft.

PAL produced an ANEF in 2004 for the Master Plan that was approved by the Minister at the time. That Master Plan is still in operation at the airport. In 2009, PAL produced an updated MP which was endorsed by Airservices, but as the 2009 Master Plan was not accepted by the Minister, the ANEF prepared in 2009 was not used as a part of the Master Plan for the Airport.

In Appendices A19 and A20 of Volume 5, comparison plots of the newly endorsed 2031 ANEF are overlaid on the ANEFs produced in 2004 and 2009 respectively. These overlays indicate that there is a considerable difference between the ANEF contours. The reasons for the differences relate to a number of factors:

- an increase in the numbers of flights modelled;
- the spreading of the tracks and the use of sub-tracks in the 2031 modelling;
- a change of the INM Model (version 6 to version 7);
- the use of helicopter circuit tracks and the integration of the helicopter modelling into the INM model; and
- a slightly different fleet mix.

All these factors influenced the significant changes of the ANEFs from 2004 through to the ANEF this year.

In terms of significant ANEF (2031) contours, the 35 ANEF contour is contained entirely within the airport boundaries. The 30 ANEF contour only crosses the airport boundary to the north over Kings Road and covers an area of land zoned industrial. The 25 ANEF contour extends northward over Salisbury Downs and generally covers areas zoned industrial with a small area to the northern tip extending over a residential area. To the west, the 25 contour extends over an area of residentially zoned land in

Parafield Gardens and to the south over The Levels which mainly includes the University and Defence establishments. To the east, the 25 contour extends only marginally over Main North Road and sightly into the commercially zoned land along the eastern side of Main North Road.

The 20 ANEF contour extends to the north including areas of Salisbury Plain, includes Salisbury Downs and to the west of the airport crosses over Parafield Gardens. To the south the 20 contour crosses over The Levels and to the east extends into the Para Hills area.

PAL is currently reviewing the Parafield Airport Fly Friendly Program for the airport and will engage with stakeholders to refine the program and consider any additional measures for managing noise impacts on an ongoing basis. In addition, PAL will work collaboratively with the City of Salisbury to ensure that any future development will recognise the 2031 ANEF and the ultimate capacity ANEC and that any developments within the significant ANEF contours will be constructed to meet Australian Standard 2021-2000.

Whilst Parafield Airport operates 24 hours of the day it has in place industry working arrangements for circuit training. PAL further proposes to conduct consultative meetings with the airport operators and Airservices to maximise the use of the movement area infrastructure and to minimise the impacts on the community. PAL has issued an Engine Ground-run Policy for the testing of aircraft engines. This Policy has been ratified by the Airport Environmental Officer and is subject to periodic review.

The Policy directs aircraft owners and maintenance operations as to when and where they may test-run engines. PAL staff monitor these events and apply the full remedy of the *Airport (Environmental Protection) Regulations 1997* in the event of any breaches. Further detail and objectives relating to the management of ground-based noise is provided in Volume 3, Section 13.1.

The long-term land use planning of the airport and surrounding areas, particularly those associated with the ANEF contours shown in Figures A17 and ANEC contours in A18, is being addressed.

The South Australian Government is working with other state and territory jurisdictions and the Commonwealth to reach an agreed and coordinated position, in accordance with the National Aviation Policy White Paper *Flight Path to the Future*, on a framework to safeguard significant airports from inappropriate surrounding new development, and on how the agreed framework may be incorporated into their respective planning systems. This agreement is expected to be considered by Transport and Infrastructure Ministers in May 2012. Once finalised, it is intended to be referenced in COAG's capital cities strategic planning review.

### 5.13.2 Parafield Airport Technical Working Group

In 2010 the Parafield Airport Technical Working Group was formed. This group works as a sub group of the Parafield Airport Consultative Committee (PACC) and is comprised of Airport Management and Operations staff, the flight training schools, maintenance organisations, Airservices (Air Traffic Control), CASA and other aviation related businesses operating from Parafield Airport.

The objectives of the committee are:

1. To consider flight paths, airspace and runway usage to minimise aircraft noise impacts on surrounding communities.
2. To provide a forum to discuss proposals to change:
   - Flight paths
   - Training circuits
   - Airspace
   - Runway usage.
3. To review and improve Parafield "fly friendly" policies.
4. To review and interpret noise complaint information.
5. To review current proposed changes to airport aviation facilities.
6. To review the 'Ground-Running Policy'.
7. To participate in Master Planning.

The committee was formed to enable technical aviation issues to be discussed openly, and in detail, whereas only the outcome is relevant to the community and elected members represented on the Parafield Airport Consultative Committee. A report of the Technical Working Group outcomes is presented at each PACC meeting. The new format of meetings has worked very well and produced improved outcomes in relation to the objectives of the group.

Progress to date includes:

- agreement on creation of a 'Fly Friendly

Program';
- no circuit training before 8:30 am on Sundays (previously 8:00 am);
- variation to exclude circuit training times before 9:00 am on Anzac Day; and
- addition of New Years Day to agreed 'no circuit training days'.

# 6 LAND USE PLANNING

## 6.1 INTRODUCTION

The land use provisions of this MP are based on a revision of the 2004 Master Plan, taking into account:

- South Australia's Strategic Plan (2011);
- *Strategic Infrastructure Plan for South Australia (2005)* and the *Strategic Infrastructure Plan for South Australia Discussion Paper 2010* which was released for public consultation in February 2011 – this discussion paper and feedback will be used to prepare a new Strategic Infrastructure Plan for South Australia;
- *30 Year Plan for Greater Adelaide (2010);*
- *Housing and Employment Land Supply Program Report (2010);*
- *Airports Act 1996* and *Airports Amendment Act 2007* and *2010;*
- the approved Minor Variations under the *Airports Act 1996* to the November 2004 Master Plan, specifically that relating to approval of a Brand Outlet Centre and associated retail in the Commercial Estate Precinct on 11 April 2007;
- changing development pressures and opportunities identified since the 2004 Master Plan;
- input from the PACC, the Adelaide Airport Consultative Committee (AACC), Airport Planning Co-ordination Forum (Adelaide and Parafield Airports), the South Australian State Government, the City of Salisbury and the local community and business;
- consultancy analysis initiated for PAL or proponents;
- *Salisbury City Plan 2020;* and
- City of Salisbury Sustainable Futures documents (2008).

This MP recognises that Parafield Airport is an important aviation facility for South Australia and a world-class aviation training facility being categorised as a Specialist Centre in the State Government 30 Year Plan for Greater Adelaide. The MP also includes employment land in terms of Industry and an established retail Bulky Goods Centre. The Plan seeks to ensure that airport development proceeds in a manner which is compatible with existing adjacent land uses and development policies and ensure that the operational integrity and economic viability of the airport is not compromised. It also allows capacity for growth to meet changes in aviation travel and the aviation support industry, including pilot training activities and general aviation.

The MP establishes an Airport (Parafield) Zone for the entire 433 hectare site. This zone is consistent with State Government principles which provide broad objectives and principles of development control to guide proposed development on the airport site. The zone is broken down into precincts, as shown in Figure 6.1. These precincts are:

- Runways - 244 Ha;
- Central - 20 Ha;
- Commercial Estate - 33 Ha;
- Levels - 9 Ha;
- Bennett - 13 Ha;
- Cross Keys - 82 Ha; and
- Kings - 32 Ha.

It is noted that the delineated precinct areas and boundaries established for the 2012 Master Plan are generally consistent with those detailed in the 2004 Master Plan. With the exception of the Runways Precinct, increased from 222 Ha to 244 Ha; the Central Precinct, decreased from 37 Ha to 20 Ha; and the Kings Precinct, decreased from 36 Ha to 32 Ha. These boundary changes have been made to incorporate the underlying existing and planned land use categories of aircraft aprons and aircraft movement areas into the more appropriately defined Runways Precinct.

### 6.1.1 Precincts

For each precinct, the MP contains Objectives, Desired Future Character Statements, along with Principles of Development Control and Procedural Matters that specify Envisaged and Non-Complying uses in a similar vein to that in existence under the State Planning regime. Any uses not listed as Envisaged or Non-Complying are able to be considered on "Merit" and must undergo an agency referral and public consultation process prior to a decision being made on whether to approve the use.

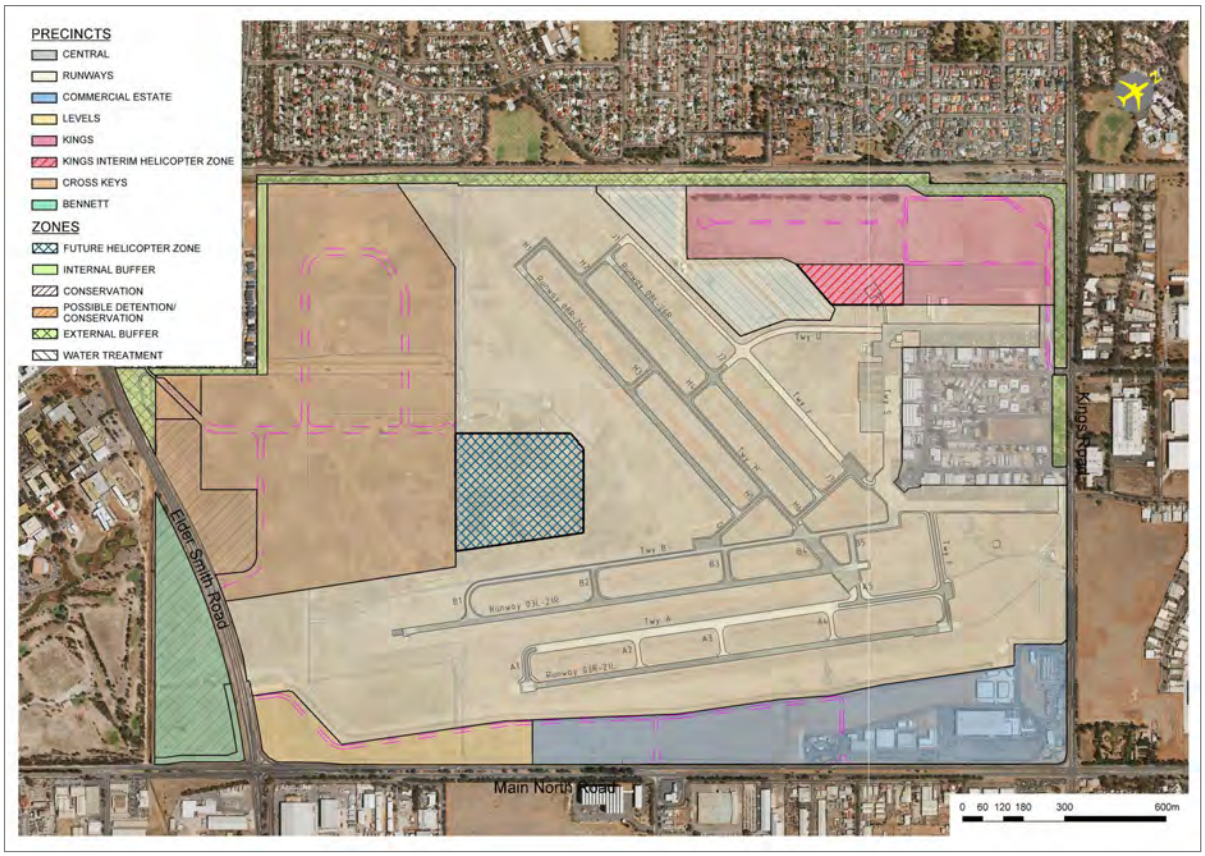



Figure 6.1 Precinct Plan for Parafield Airport

Consistent with the provisions of the *Airports Amendment Act 2007*, the proposed development direction for each precinct is also indicated on the overall Parafield Airport Structure Plan, which is included in Figure 6.2. In the development criteria for each precinct, a Precinct Structure Plan is also incorporated which, consistent with the 2010 amendments carried out for the *Airports Act 1996* (Act 149 compiled on 1 January 2011) outlines the envisaged primary uses including those for commercial (including offices), community or retail purposes, as well as those directed at airport services. In Section 7 of this Master Plan the proposed developments over the next 5 and 20 years and their assessments are discussed, which include environmental aspects, economic and employment levels along with their consistency with State and Local Government Planning Schemes either directly, or in the surrounding vicinity.

## 6.1.2 Buffer and Conservation Zones

Surrounding the airport are some buffer zones that separate airport development precincts from nearby residential areas and that provide drainage swales, railway corridors and shared-use pathways.

A conservation zone at the southern end of the airport has been established for environmentally significant vernal pools, recognising their biodiversity and conservation values. There is a need for strict management control of these ephemeral pools in recognition that similar conservation activities are often classed as an incompatible activity near airports because of their potential to attract birds. This is consistent with ICAO advice on this land use and its potential to become a high risk wildlife attraction.

As accepted at the time of approval of the construction of Elder Smith Road and consistent with the Cross Keys Precinct Major Development Plan (2004), the City of Salisbury has reconfirmed its interest in the environmental management of the vernal pools in the conservation areas under a Sanctuary Agreement with the SA National Parks and Wildlife Service. This council has recognised experience in the sensitive management of conservation environments in nearby Dry Creek, water detention activities close to Edinburgh Airport flight paths and the water harvesting already in place on Parafield Airport in the Runways Precinct. These conservation areas and buffer areas are shown on Figure 6.3.

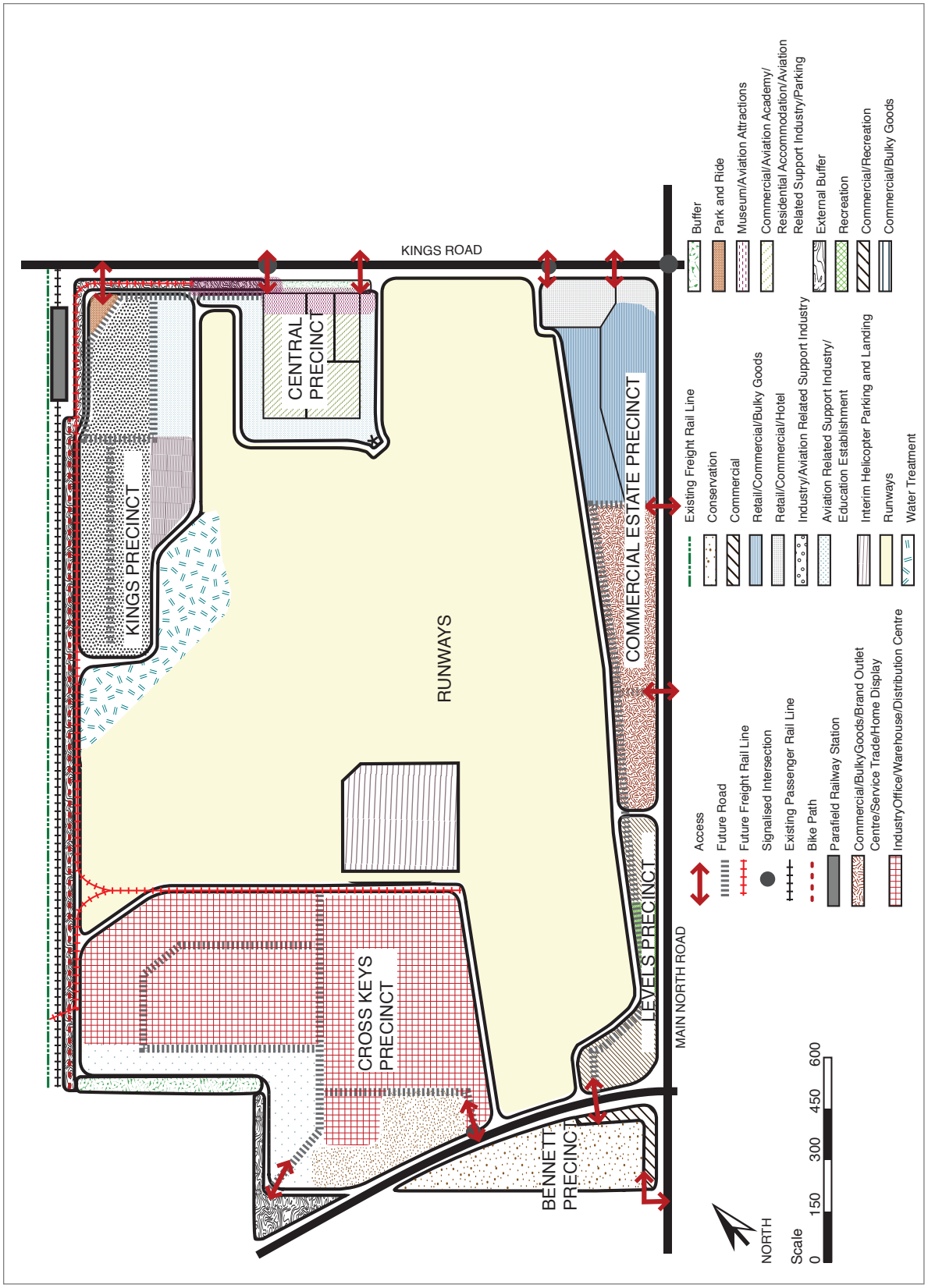



Figure 6.2 Airport (Parafield) Zone Structure Plan

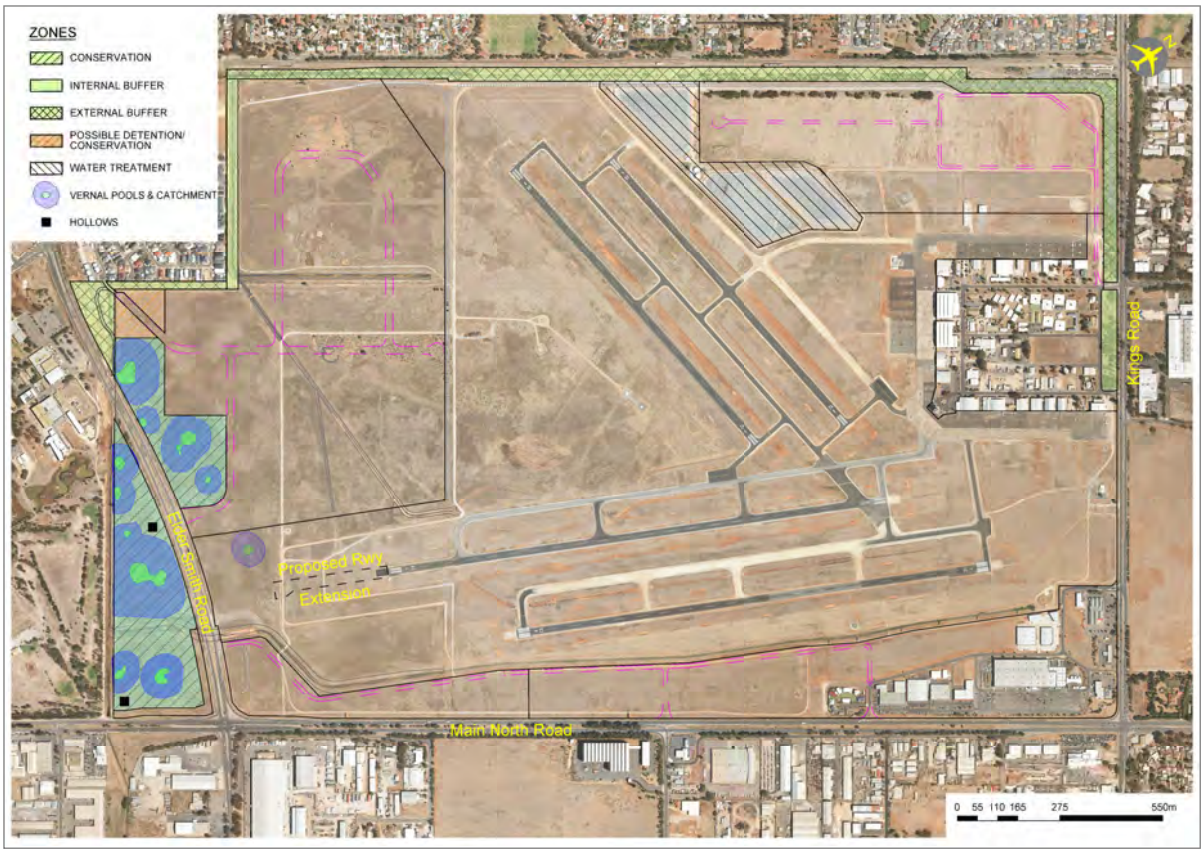



Figure 6.3 Buffer and Conservation Zones

The boundary of the ephemeral conservation areas within the Bennett and Cross Keys Precincts have been re-aligned from that suggested in the Airport Environment Strategy (PAL 2009) to more accurately and directly reflect the protection of the vernal pools and their upland catchments, and to better address airport needs. This re-alignment is consistent with the areas and roadways outlined in the Delta Environmental Consulting (2002) study PAL Vernal Pools – Health, Road and Industrial Estate Impacts, Mitigation and Management, and which was reflected in the Cross Keys Major Development Plan (PAL 2004a), Airport Master Plan (2004b) and Airport Environment Strategy (2004c).

The vernal pool that lies within the Runways Precinct is situated at the southern foot of a runway, and its retention can continue, under close management, pending future runway extension. This particular pool has been independently identified as degraded, having a low biodiversity value, and has been assessed as not being well suited for remediation. Given its location and the potential future runway extension, it has been classified as a control pool, which can be used for benchmarking the remediation success of vernal pools in the conservation zone, and is well suited for monitoring purposes for 5 years, pending possible runway expansion. Additionally, the establishment of a conservation zone within close proximity of the runway would be incompatible with airfield operations due to wildlife attraction and runway end safety area issues.

The boundary of the Cross Keys Precinct has been varied to cater for the approved feeder roads into the Cross Keys Precinct from Elder Smith Road and a provisional location at St Kitts Place in Mawson Lakes. These feeder roads are isolated from the vernal pools and their catchments themselves, as acknowledged in the Delta (2002) environmental study and detailed in the Cross Keys Precinct Major Development Plan (PAL 2004a) which established the path for the construction of Elder Smith Road and links to the associated future industrial development.

The boundary of the Cross Keys Precinct conservation zone along the western side has been varied to exclude a portion of land that is extraneous to vernal pools, but as indicated in the Cross Keys Precinct Major Development Plan (PAL 2004a) and the Parafield Master Plan (PAL 2004b), has been set aside for the possible establishment of a large stormwater detention basin that might complement both future Cross Keys industrial development and the nearby Bennett

Road Drainage system under control of the City of Salisbury. The need for this detention basin will be subject to detailed design of precinct infrastructure and the accepted feeder link road into Mawson Lakes. After these design issues are settled, the extension of the conservation zone to link with the Mawson Lakes Buffer Zones might be considered.

In the Bennett Precinct, the boundary of the conservation zone has been marginally varied to cater for existing service access onto the site for management and possible environmental interpretive activities including associated car parking, small kiosks and conveniences. Also within the precinct are archaeological sites consisting of two stone artefact scatters and six isolated artefacts, identified during a survey of the Bennett Road alignment in 1999 (Wood 1999). These sites, whilst being of a disturbed nature and only having a small possibility of intact cultural deposits, have been established as being of social importance by the local Aboriginal community.

## 6.2 COMMONWEALTH PLANNING POLICY

### 6.2.1 Land Use Planning

The Commonwealth in leasing its airports has retained responsibility for controls over land use planning and development on the airport pursuant to the *Airports Act 1996* and the *Airports Amendment Act 2007* and *2010*. The formal process for achieving this control is for the Federal Minister to approve the submitted Master Plan, which reflects PAL's proposals for land use and related development within the Airport Zone.

The process of approving developments by PAL has been aligned to those processes under State and Local Government initiatives, and particularly employing elements such as Structure Plans as advocated for an efficient planning system to support the new 30 Year Plan for Greater Adelaide. The procedural arrangements for major development on the airport are established by the provisions of the Act and amendments but undergo the rigorous and extensive analysis and consultation evident under State Major Development processes (refer Figure 6.4).

Prior to the commencement of construction of any development classified as a 'Major Development" under the Act, PAL will prepare a Major Development Plan to thoroughly assess the potential impact of the development and outline the management procedures to be undertaken. Any Major Development Plan must be considered by the Minister following public consultation and comment as prescribed in the *Airports Act 1996* and *Airports Amendment Acts 2007* and *2010*. All developments are subject to formal building approval in accord with the *Airports (Building Control) Regulations 1997*, taking into account the consideration of the *Airports Environment Protection Regulations 1997*.

Land use controls are necessary in areas adjacent to the airport to protect its long-term safe and efficient operations. To this end, the Commonwealth introduced the *Airports (Protection of Airspace) Regulations 1997* to support planning authorities in ensuring that the operational integrity of the airport is maintained. While this MP covers only the Airport (Parafield) Zone, close attention is warranted to ensure due consideration is given to Australian Standards, such as AS2021-2000 Aircraft Noise – Building, Siting and Construction for localities abutting Parafield Airport and those susceptible to aircraft noise, as well as building heights and suitable public safety zones.

### 6.2.2 Social Planning

The Commonwealth has offered the States the opportunity to take responsibility for airports in traditional areas of State responsibility. These include certain social planning matters. The offer to transfer regulatory responsibilities in these areas was made on the basis that the States were prepared to amend or adopt their current regulations in the above areas to allow existing activities at airports to continue.

The *Airports Act 1996* (Part 11) allows the Commonwealth to put in place laws at Parafield Airport to control liquor, commercial trading, gambling, vehicle movements and smoking. These laws and resulting regulations also modify or exclude specific State laws in relation to these matters where it is appropriate to do so. The Commonwealth regulations control airport activities by:

- ensuring authorisations to sell or supply liquor at premises on the airport that existed prior to privatisation are continued, subject to compliance with State laws (modified by the Commonwealth where necessary);
- modifying the application of liquor laws in the State in their application to the airport;
- where necessary, ensuring any airline commercial trading authorisations at the airport

that existed prior to privatisation are preserved;
- prohibiting gambling except where an authorisation existed prior to privatisation; or is obtained or varied consistent with the regulations under the Act, with this notably the case for the Roulettes Tavern in terms of Gaming Machines and Gaming Authorities (and Liquor Licensing) as deemed approved operations;
- providing a regime for the issue and withdrawal of authorities for vehicles to be used airside and for persons to drive airside;
- prohibiting smoking in designated no-smoking areas (including terminals); and
- providing a scheme of "on-the-spot" fines for breaches of vehicle control and smoking offences.

Specific aviation functions also come under the jurisdiction of other authorities such as:
- the provision of air traffic services, air navigational facilities and an aeronautical information service;
- the setting of aviation standards and associated regulations by CASA; and
- search and rescue services provided by the Australian Maritime Safety Authority (AMSA).

DoIT also administers the government's domestic and international aviation policies, safety and security provisions and administers the air navigation regulations.

Other Federal and State Government Departments which can provide services as appropriate are the State Emergency Services (SES), Australian Federal Police (AFP), Australian Customs and Border Protection Service (ACBPS), Quarantine, (AQIS), Bureau of Meteorology (BOM), SA Police, SA Ambulance, SA Metro Fire Service, Health, Agriculture and the Australian Transport Safety Bureau (ATSB).

### 6.2.3 Building and Environmental Controls

Under the *Airports Act 1996* and associated Regulations, approval for any building activity on the airport must be obtained from the Airport Building Controller who is appointed by DoIT.

The consent of PAL is required before any approval can be given by the Airport Building Controller. In giving its consent, which may be granted with conditions, PAL must consider the proposal compared against the Objectives, Desired Character, Principles of Development Control and Procedural Matters of the Master Plan and any Major Development Plan approval. PAL will also assess the impact of any proposal on infrastructure and the operations of the airport when reviewing an application for consent.

The Commonwealth has also put in place an environmental management regime at Parafield Airport under the *Airports Act 1996*. An Airport Environment Officer has been appointed by DoIT to ensure the airport follows environmental protection regulations and operates in accordance with good environmental practices as described in the Airport Environment Strategy, Volume 3 of this MP.

## 6.3 STATE AND LOCAL GOVERNMENT PLANNING POLICIES

There are a number of strategic and statutory documents at both the State and Local Government level, offering a planning perspective on Parafield Airport, that have been considered in this review of the Parafield Airport Master Plan. Discussion on the key documents follows.

### 6.3.1 Relationships between Airport Planning and State/ Local Government Planning

A comparative analysis between the airport and State/Local Government Planning is outlined in the Planning Comparison Diagram in Figure 6.4. This indicates similar levels of control and consultation between both regimes. In particular this figure and the review of the following State and Local Government Planning Policies as they relate to airports, reveals the importance of airports to Adelaide in terms of economic and commercial development. Furthermore, there is an increasing emphasis toward economic, social and environmental sustainability, particularly evident through integration of community opportunities where possible.

There is also some evidence of a changing direction under State and Local Government Planning to consider airports and aviation activity in future planning surrounding airports, though with some need by Local Government in particular to consider the long-term nature of airport leases and the high level of capital investment necessary for the development and maintenance of aviation infrastructure. These planning authorities therefore need to integrate planning philosophies consistently with existing airport activities and operations.

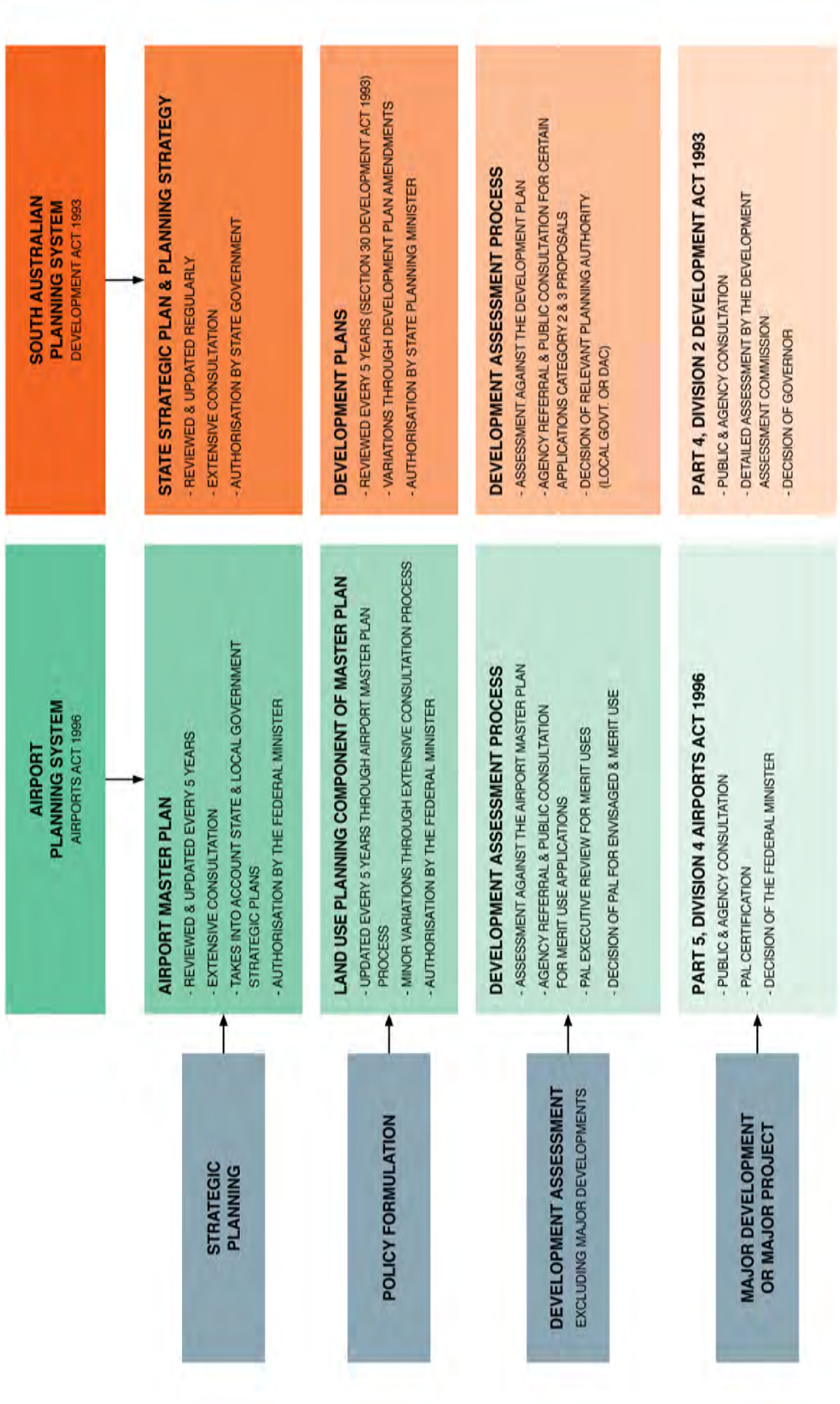



Figure 6.4 Planning Comparison Diagram

### 6.3.2 South Australia's Strategic Plan (2011)

South Australia's Strategic Plan was first released by the South Australian Government in March 2004, and recently updated in 2011. The Plan's targets reflect South Australia's aspirations for where it wants to be as a State in 2014 and beyond. Targets are grouped under the following six objectives:

- Our Community;
- Our Prosperity;
- Our Environment;
- Our Health;
- Our Education; and
- Our Ideas.

Development of the Parafield Airport land will help to achieve the objectives and targets described in Table 6.1 below.

FTA and other flight training schools at Parafield Airport assist in the achievement of the education and workforce development and training aims of the objectives. Overall development will aid the State Government employment targets of 2% per annum over the next five years.

With projected 2012 employment levels at Parafield Airport at between 870 and 1,000 direct employees and a further 1,200 to 1,300 indirect jobs, this could be expected to increase to a total aggregate direct and indirect employment varying between 3,000 and 3,900 jobs within 20 years, as forecast by Hudson Howell (2011). This is further broken down into employees performing aviation services and other airport activities, focusing particularly over the next five years, as outlined in Section 7 of this MP. PAL's contribution to Gross State Product (GSP) is forecast to grow to between $100 million to $150 million over the same 20 year period.

### 6.3.3 Development Act 1993 and Development Regulations 2008

The South Australian planning system is established under the *Development Act 1993* and associated *Development Regulations 2008*. The object of the Development Act is to provide for the proper, orderly and efficient planning and development in the State. Amongst other aims, the Act provides for:

- the establishment of objectives and principles of planning and development;
- a system of strategic planning governing development;
- the creation of Development Plans with policies to guide and control development;
- appropriate public participation in the planning process and the assessment of development proposals; and
- the establishment of various decision making bodies.

### 6.3.4 Planning Strategy for South Australia

The Development Act requires publication by the State Government of the Planning Strategy for South Australia. The Planning Strategy presents the State Government's policy directions for the physical development of the State over the next 10 to 15 years.

### 6.3.5 The 30 Year Plan for Greater Adelaide (a volume of the Planning Strategy)

The relevant volume of the Planning Strategy applicable to Parafield Airport is the 30 Year Plan for Greater Adelaide (2010) which provides directions for urban and regional development for business, including infrastructure provision, utilities supply and government agencies.

Table 6.1 South Australian Strategic Plan - Objectives and Targets

| Objective 2: | Our Prosperity |
|---|---|
| Target 35 | Economic growth: Exceed the national economic growth rate over the period to 2020 (baseline: 2002 – 03). |
| Target 39 | Competitive business climate: Maintain Adelaide's rating as the least costly place to set up and do business in Australia and continue to improve our position internationally (baseline: 2004). |
| Target 47 | Jobs: Increase employment by 2% each year from 2010 to 2016 (baseline: 2010). |
| Target 56 | Strategic infrastructure: Ensure that the provision of key economic and social infrastructure accommodates population growth (baseline: 2010 – 11). |

Table 6.2 30 Year Plan for Greater Adelaide – Policies and Targets

| |
|---|
| Chapter D Policies and Targets: Transport<br><br>9. Ensure planning policy protects airport sites by restricting incompatible uses of land in surrounding areas. Development Plans should identify areas adjacent to airports and under flight paths where new development is inappropriate due to building height restrictions and aircraft noise impacts.<br>10. Require new housing and other noise-sensitive developments permitted in locations adjacent to airports and under flight paths to incorporate appropriate noise attenuation measures to minimise the impact of aircraft noise and airport activities.<br>11. Develop, in cooperation with the Australian Government, a clear policy on the definition of public safety zones around airports for incorporation into Development Plans.<br><br>The economy and jobs<br><br>2. Set specific jobs targets at a regional level, which will:<br>reflect where people are going to live to reduce journey-to-work times take advantage of existing infrastructure, such as transport<br><br>7. Focus business clusters around key transport infrastructure such as road, air, rail and sea terminals, particularly intermodal facilities to maximise the economic benefits of export infrastructure.<br><br>Maps D10 and E4<br>Regional distribution of jobs and designated employment lands. Parafield Airport is identified as a Specialist Centre and Bulky Goods Activity Centre. |

The Plan promotes a more efficient, sustainable and liveable urban form. Shifting the emphasis of new growth away from urban expansion towards a concentration of new housing in existing urban areas is a central theme of the Plan. Growth within the existing footprint of metropolitan Adelaide is promoted by increasing housing densities close to selected transport corridors and at new Transit Oriented Developments (TODs). Key references to policies and targets are outlined in Table 6.2.

### 6.3.6 Strategic Infrastructure Plan for South Australia 2005/6 – 2014/15

The *Strategic Infrastructure Plan for South Australia* is a key document 'in developing a more coordinated long-term approach to infrastructure provision throughout the State. It provides an over-arching State framework for the planning and delivery of infrastructure by all government and private sector infrastructure providers'.

Discussion under the 'Transport' section of the Plan recognises that Parafield Airport houses the State's primary civilian flight training centre and small craft airport.

Under the heading 'Aviation', the Plan comments that 'owners of aviation assets are trying to maximise their return by using the large tracts of land for commercial purposes' and that 'increased road traffic in and around airports is being addressed'.

The plan also notes that 'Parafield Airport is surrounded by residential developments. The recent completion of the Mawson Lakes development has increased the amount of residential development close to Parafield Airport. Noise complaints about training flights are increasing; further residential growth may add to the pressure on the airport.'

Discussion under the 'Land' section of the Plan under the heading 'Industrial Land Supply and Development Opportunities' identifies some 100 hectares at Parafield Airport in the list of the 'most significant areas of vacant land'.

Under the 'Strategic Priorities' heading is listed:

- 'Identify, protect and facilitate the development of a 15- to 20-year supply of suitable industrial land to meet demand'; and
- 'Planning of industrial estates should encourage sustainable industrial practices'.

### 6.3.7 Strategic Infrastructure Plan for South Australia 2010 Discussion Paper

The discussion paper highlights a new approach to integrated land use and infrastructure planning following the release of the 30 Year Plan for

Greater Adelaide. It also refers to the use of best practice in the design of publicly funded infrastructure.

The strategic priorities relevant to the future planning of Parafield Airport are:

- Urban Land – Emerging industry requirements
  - Identify, protect and facilitate the development of a rolling 25-year supply of land including a 15 year supply of industry zoned land to meet demand;
  - Ensure infrastructure is provided in an integrated and timely manner to support existing and proposed industrial land developments;
  - Encourage the use of sustainable industrial practices through planning of industrial estates; and
  - Ensure suitable sites are available for industries that are strategic to the state's economy and have site-specific requirements.

- Transport – Improve aviation infrastructure
  - Aim to ensure any change in land use on or adjacent to airports is consistent with future transport development.
  - Provide for the mining and resource sector's requirement for aerodrome infrastructure to meet exploration, development and workforce needs.

### 6.3.8 Housing and Employment Land Supply Program Report 2010, Greater Adelaide

The *Housing and Employment Land Supply Program* (HELSP) report (2010) supports the strategic aims of the *Planning Strategy* for the timely delivery of suitable land to support residential, industrial, retail and commercial development. The HELSP report combines the former *Metropolitan Development Program* and the *Industrial Land Strategy* into one annual report. Relevant features of the HELSP report include:

- adopting a 25-year rolling supply of residential, industrial, commercial and retail land based on projected population and dwellings, and employment growth; and
- ensuring 15 years of zoned land is available for urban development at any given time.

At the time of writing this MP, the HELSP report requires amendment in relation to the supply of potential industrial land at Parafield Airport. The HELSP report will be corrected by the Department of Planning and Local Government to identify a total of 108 hectares of useable industrial land at Parafield Airport. The land comprises 36 hectares in the Kings Precinct and 72 hectares in the Cross Keys Precinct. The HELSP report identifies the potential industrial land as highly suitable for new industries and links the rezoning of this land with the achievement of the state's future supply targets and the economic development of northern Adelaide.

### 6.3.9 Salisbury (City) Development Plan

Development Plans are key documents in the South Australian planning and development system. They are established under the Development Act 1993 and contain zones, maps and written policies which guide property owners and others as to what can and cannot be done in the future on any piece of land in the area covered by the Development Plan. Development Plans may set out the desired character for different parts of an area, the types of development preferred and whether public notification of an application is required. Development Plans provide the detailed criteria against which development applications will be assessed.

Parafield Airport is located within the Salisbury (City) Development Plan which covers the entire City of Salisbury. Specifically, the airport is within the 'Special Uses Zone' which has the following objective: A zone accommodating special public and private activities involving recreational, community or institutional use of an open character.

The zone provisions also contain a limited number of Principles of Development Control that, in the main, comprises a list of non-complying forms of development. Council-wide policies require the maintenance of the long-term operational, safety and commercial aviation requirements of the Parafield Airport and provide guidance on building heights within the airspace around the airport.

In March 2011, an application to the Minister for Urban Development and Planning to amend the Salisbury (City) Development Plan was made by the City of Salisbury to rezone a 20 hectare site located opposite Parafield Airport on the corner of Main North Road and Kings Road. The site is currently zoned for industrial use but the existing land use is for a single dwelling and agriculture.

The City of Salisbury requested that the Minister consider rezoning the land to 'Bulky Goods' to allow the development of a major commercial bulky goods outlet and recreational facility, as proposed by the current owner of the land. In its request,

Council noted possible economic and social benefits, but recognised the need to overcome complex issues; including the safety of operations at Parafield Airport, the efficiency of the surrounding road network and ensuring that the proposal would not adversely impact existing retail centres.

Concerns were expressed at the PACC Planning Consultative Forum meetings in 2011 over the magnitude of possible breaches of the Parafield Obstacle Limitation Surface in terms of the Air Navigation Act and Regulations, public safety and traffic impacts.

The Minister for Urban Planning and Development has subsequently refused the request by the City of Salisbury to initiate such a Development Plan Amendment, recognising that the land is currently zoned Industrial, and should be retained for this purpose noting its general shortage in metropolitan Adelaide. Subject to suitable commercial arrangements, PAL may be amenable to acquisition of this land based on its current activity so as to protect the airspace surrounding the airport.

### 6.3.10 Salisbury City Plan 2020

The Salisbury City Plan 2020 makes references to Parafield Airport and Council's vision for the airport's future role within the City of Salisbury.

Under the heading 'Parafield Airport Relocation' the document states: 'Parafield Airport is one of Australia's oldest inner city commercial airports. Council believes that its future tenure is limited because of increasing demand for further residential development coupled with the impact airport activity is having on nearby residential areas.' Accompanying maps in the documents have the notation 'Possible for future residential/mixed use development' applying to the Parafield Airport site.

The City of Salisbury Plan 2020 is not directly applicable to the airport land which is under the provisions of the *Airports Act 1996*. The expressed Council vision for Parafield Airport is also a reversal of its previous Corporate Focus from 2003 to 2006, which was convergent with the approved Parafield Airport Master Plan.

The issue of relocating Parafield Airport has been considered by the Commonwealth Government and its long term future as an airport has been confirmed. This reflects the policies within the 30 Year Plan for Greater Adelaide which clearly identify Parafield Airport as being retained and describes policies to protect the airport from encroachment and identify parts of the airport land for industrial and retail employment lands.

During meetings of the Parafield Airport Consultative Committee in 2011, the City of Salisbury has also indicated their intent to work cooperatively consistent with the principles in the 30 Year Plan for Greater Adelaide.

Further, the City of Salisbury has acknowledged that the Federal and State Governments have affirmed their commitment to the aviation industry through respective aviation strategies, including the State recognition of Parafield Airport in the '30 Year Plan for Greater Adelaide'. The Council has also noted the significant economic value and investment linkages generated from Parafield Airport for the community, and confirmed general support for the development proposals specified in the various airport precincts.

## 6.4 EXISTING INTERESTS

PAL inherited several ongoing leases pursuant to the *Airports (Transitional) Act 1996*, which were issued prior to the transition of the management of the airport from the FAC to PAL. Some of these leases continue and their uses have been generally incorporated into the respective zones as "envisaged activities". Any uses that might be now categorised as non-complying, or not separately identified, are able to continue as existing activities while remaining within their current locality on-airport. Similarly, any uses now in existence, or which have been duly approved under the processes of the *Airports Act 1996*, or where there may be some anomalies in planning terminology definitions, are to be categorised as "envisaged activities" within the various airport precincts.

A map of the easements on the airport thought to be in existence at privatisation in 1998 is shown at Appendix I.

## 6.5 DEVELOPMENT DECISION PROCESS

The PAL development decision process closely aligns with the South Australian development assessment process, in the context of the Commonwealth process as described in the *Airports Act 1996*.

As mentioned in Section 6.2, under the Act, controls over land use planning and development on the airport remain with the Federal Minister for Infrastructure and Transport, with PAL to make decisions on development proposals which are consistent with the approved Master Plan.

Figure 6.5 indicates the PAL Development Decision Matrix for the specific forms and types of airport

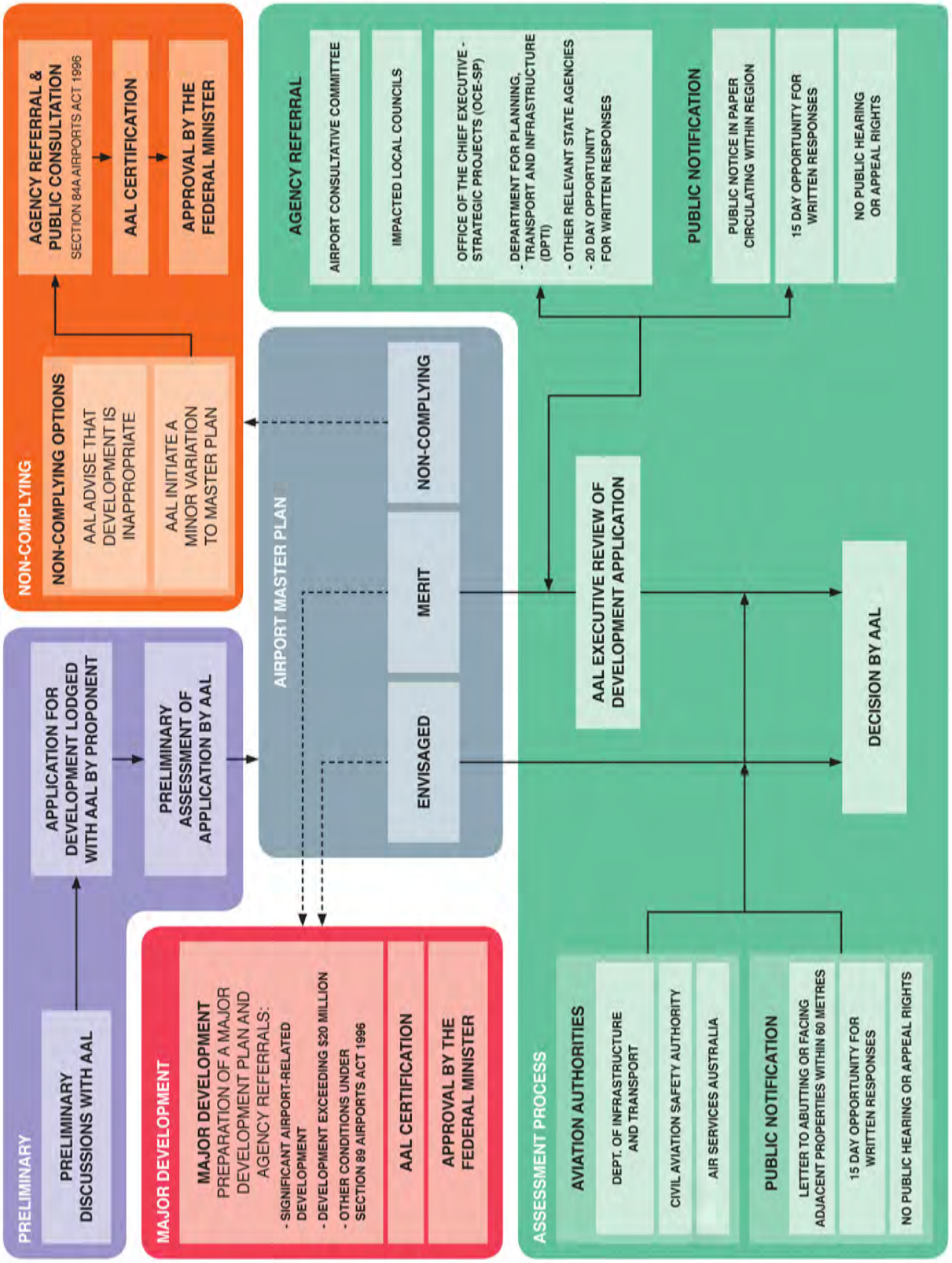



Figure 6.5 Development Decision Matrix

development. There are a number of decision-making steps in this process. These include:

- the decision of PAL to lease land for particular forms of development;
- the decision of airport authority regulators (such as the Department of Infrastructure and Transport and CASA) to accept development which will not unduly impact upon airport and aviation activities; and
- the decision of PAL as to the appropriateness (or otherwise) of the development against the approved Master Plan; this discretionary decision takes into account:
  - the Parafield Airport Zone Objectives and Principles of Development Control;
  - the relevant Precinct Objectives and Principles of Development Control; and
  - the general consistency with the desirable Structure Plans for the relevant precinct.

If a development proposal is not identified within the relevant precinct as Envisaged or Non-complying, it can be considered as "Merit" and it triggers two processes – Agency Referral and Public Notification. The Public Notification process entails notification in a newspaper circulating within the region and advice to the members of the Parafield Airport Consultative Committee and Planning Forum. Such a process will assist in informing key groups/ affected persons of the proposal, and allow written submissions within 10 business days, which can be tabled with the Consultative Committee, Planning Coordination Forum, the State Government and the City of Salisbury prior to any decision on the proposal being made by PAL.

If a development proposal is identified as being "non-complying" within the relevant precinct and the proposal is considered by PAL to have "Merit", such an application could trigger a Minor Variation to the Parafield Airport Master Plan under Section 84A of the Act, for a decision by the Federal Minister.

## 6.6 COMMONLY USED PLANNING DEFINITIONS

Included in the glossary are definitions for varying airport activities consistent with airport needs or existing airport uses. Where a particular land use is not defined, regard should be given to the definitions contained in the *South Australian Development Regulations 2008*. PAL will be the adjudicator in any anomaly instances.

## 6.7 AIRPORT (PARAFIELD) ZONE

The Airport (Parafield) Zone is one which defines the area within which the following Land Use Planning policies apply. These Planning Criteria consist of Objectives, Desired Character Statements and Principles of Development Control together with Procedural Matters. They provide general guidance as to the form of development envisaged within the overall zone and provisions to guide such matters as the design and scale of development. The zone is divided into various precincts (a smaller sub-area of the zone), which contain additional policies specific to each precinct. Regard will be given to both the overall zone policies and the more specific precinct policies when assessing whether or not to consent to a development proposal.

The Airport (Parafield) Zone is shown in Figure 6.6.

### 6.7.1 Objectives

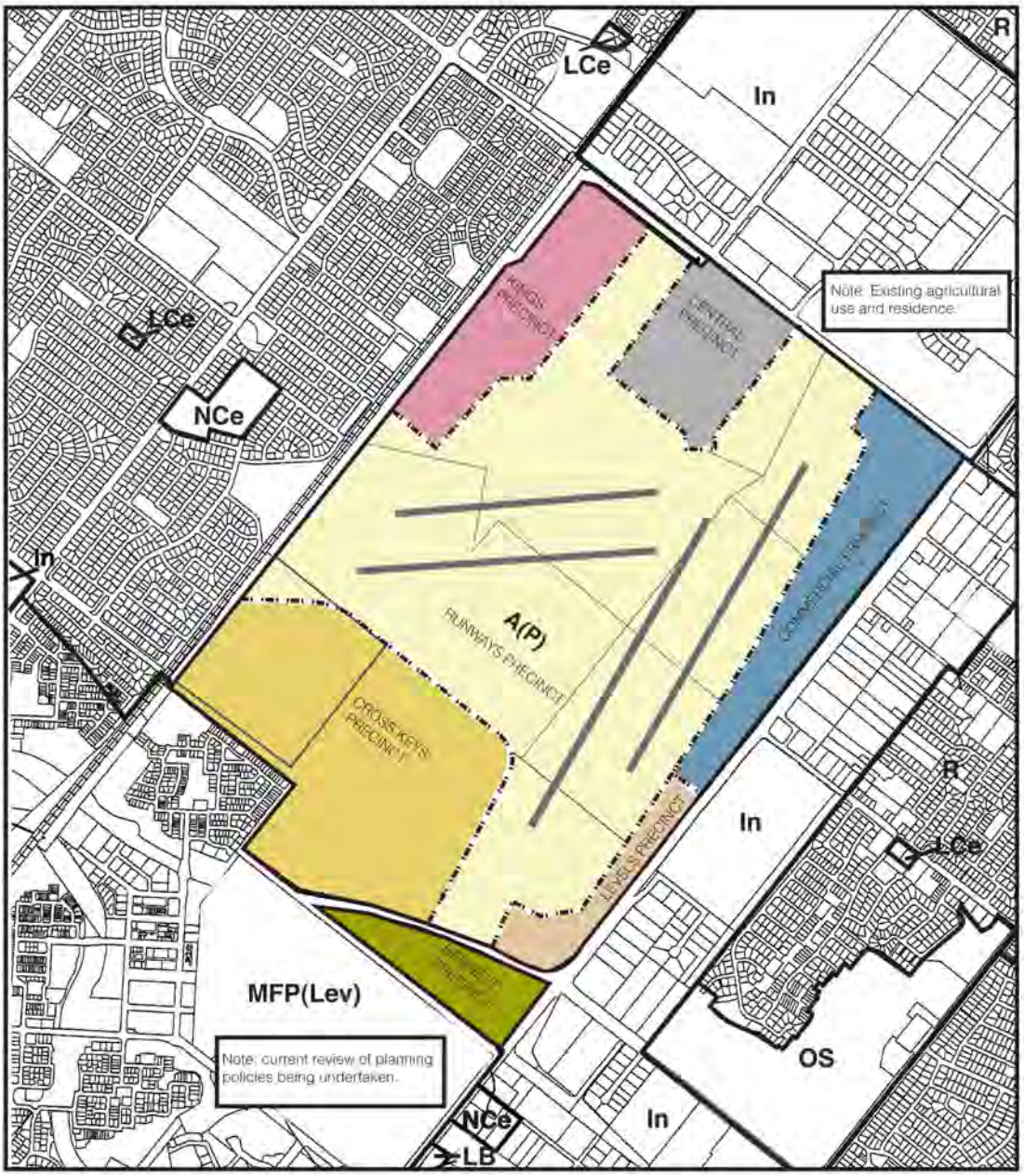
1. Development within the zone which promotes Parafield Airport's role as:
   - South Australia's principal general aviation and civilian flight training centre;
   - a key element of transport infrastructure for the State, accommodating a range of services and facilities necessary for the safe, convenient, and efficient operation of aviation activities; and
   - a major business enterprise providing a transport hub, aviation passenger, freight and general aviation facilities, flight training centres, incorporating aviation colleges and academies, employment and commercial, retail and industrial development opportunities for the inner northern suburbs, broader Metropolitan Adelaide and beyond.

2. Development that ensures the long-term operational, safety, commercial, training and general aviation requirements and fixed based operations of the airport continue to be met.

3. Development of community services, aviation attractions and some possible active and passive recreation, together with other appropriate commercial activities on land restricted by aviation needs.

#### Economic Development

4. Development which promotes the economic improvement of Metropolitan Adelaide and the State by:
   - facilitating the movement of general aviation passengers and fixed base operations and freight by infrastructure improvements;
   - providing flight training services; and
   - contributing to the viability of the airport as




| | |
|---|---|
| **A(P)** | Airport (Parafield) |
| **C** | Commercial |
| **In** | Industry |
| **LB** | Landscape Buffer |
| **LCe** | Local Centre |
| **MFP (Lev)** | Multi Function Polis (Levels) |
| **NCe** | Neighbourhood Centre |
| **OS** | Open Space |
| **R** | Residential |
| ——— | Zone Boundary |
| - - - - | Precinct Boundary |

0m 200 400 600 800 1000m

**PARAFIELD AIRPORT ZONING PLAN**

Figure 6.6 Parafield Airport Zoning Plan

a business enterprise through diversification of investment opportunities.

5. Development which is consistent with broad industrial activities of an Enterprise nature or servicing freight, logistics and storage, consistent with employment lands for the northern Adelaide metropolitan area.

6. Retail development within the zone to include shopping facilities that provide a range of convenience and comparison goods to service tourists, visitors and employees of the airport and the surrounding community and other large scale retail facilities with a Metropolitan-wide catchment. Bulky goods retailing is appropriate in parts of the zone, in recognition of its status as a Bulky Goods Centre under State Planning.

Community facilities within the zone, such as Aviation Attractions, Consulting and Health Care Facilities to service employees and visitors to the airport and the surrounding community.

### Amenity

7. Development that is compatible with AS2021-2000 relative to noise from aircraft operations.

8. Enhancement of the visual and environmental quality of Parafield Airport through:
   - quality buildings of contemporary, sustainable design;
   - the provision of appropriate landscaping, both for aesthetic and screening purposes; and
   - the continuation of landscaped and grassed swales for on-site stormwater management or linkages to the existing network of council drains under easement on airport land, or that abut airport land, to enable interconnection to the existing City of Salisbury Aquifer Storage and Recovery facility within the Runways Precinct.

9. Development designed and sited to conserve energy and minimise waste.

10. Development located and designed to minimise adverse impact and conflict between land uses, both on the airport and on surrounding areas.

11. The amenity of land and development enhanced with appropriate planting and other landscaping works, using locally indigenous drought resistant plant species where possible, consistent with the Parafield Airport landscaping guidelines.

12. Development consistent with the principles of water sensitive urban design.

13. Adoption of adequate separation distances between non-aviation and aviation development on airport land, and between development on airport land and off-airport uses, consistent with the Buffer and Conservation Zone Plan (Figure 6.3), to accord with noise tolerances included in the Airports (Environment Protection) Regulations 1997.

14. A safe, secure, and crime resistant environment.

### Access and Parking

15. Development that provides for safe and efficient access, movement of traffic, and off-street parking.

16. Access to safe, pleasant, accessible, integrated bike and pedestrian pathways.

## 6.7.2 Desired Character

Parafield Airport is recognised as a key element of transport infrastructure, providing a significant service of benefit to Metropolitan Adelaide and to South Australia.

Future development will continue to provide economic improvement to Metropolitan Adelaide and the State by:

- maintaining the airport as South Australia's principal general aviation and civilian flight training centre;
- enhancing the airport as a key element of transport infrastructure;
- facilitating the movement of general aviation passengers and fixed base operations, flight training activities and freight movement by infrastructure improvements;
- contributing to the viability of the airport as a business enterprise through the provision of commercial, retail and industrial activities; and
- provision of an economic core and employment land for the northern suburbs of Adelaide and beyond.

Enhanced amenity and environmental values for the airport are desired through the provision of:

- sustainable development activities including re-use of recycled water from the established aquifer storage and recovery system, and
- energy conservation measures such as the use of solar energy and possible suitable on-site generation of renewable energy.

External access to the airport will be improved and internal traffic movements will be enhanced by:

- improvements to the linkages to the external road system, accessibility between the Commercial /Levels Precincts and the provision of new signalised access points to the Commercial Estate Precinct and also to the Cross Keys Precinct, with the latter arranged by and at the cost of the State Government when traffic warrants are met;
- the provision of internal roads providing convenient access to the external road system;
- the possible provision of a rail corridor connecting the airport to the adjoining rail system as accepted in principle by the Australian Rail Track Corporation Limited and TransAdelaide in November 2004; and
- access to external bike and pedestrian paths, where practical.

## 6.7.3 Principles of Development Control

In determining appropriate development within the Parafield Airport Zone, consideration will be given toward airport sustainability and development principles that successfully meet the economic, social and environmental goals of PAL.

The principles of development control for the Airport (Parafield) Zone are listed below.

### Land Use

1. Development of the Parafield Airport shall accommodate the primary aircraft operations and airport and aviation-related support activities necessary to support its role as the principal general aviation and civilian flight training centre for Metropolitan Adelaide and South Australia.

2. A range of services and facilities, necessary for the safe, convenient and efficient operation of aviation activities and passenger services at the airport will be provided.

3. Development shall ensure that the long-term operational, safety and flight training and general aviation and fixed base operation requirements of the airport continue to be met.

4. The zone should accommodate:
   - a range of airport and aviation-related, industrial and commercial uses; and
   - employment and commercial, retail and industrial opportunities commensurate with the airport's role as a major business enterprise serving northern Metropolitan Adelaide and the State, and classed as a State Specialist Activity Centre.

5. Development of community services such as aviation attractions and active and passive recreation and other appropriate activities may occur.

6. Development should not adversely impact on suitable areas set aside for conservation purposes.

### Form of Development

7. Development should not be undertaken unless it is consistent with the desired character for the zone.

8. Development should be staged, having regard to infrastructure requirements.

### Retail Development

9. Retail development should be of a size and type, and be located, to reflect its status as a State nominated Bulky Goods Retailing location along a major transport corridor.

10. Smaller scale retail facilities may be appropriate in some areas, servicing the day-to-day needs of employees and/or the travelling public.

11. Larger scale retail facilities, servicing the needs of the surrounding community or wider regional or Metropolitan wide catchments, should be located to take advantage of the airport's central location and placement along major roads.

12. Larger scale retail facilities, including Bulky goods and Brand direct retailing, should:
    - provide choice in the range of goods and services available to the community and visitors;
    - expand retail employment opportunities within the region;
    - provide a competitive environment for the benefit of customers; and
    - have clearly identifiable signage.

13. Bulky goods retailing should provide for pick-up areas to avoid the necessity for customers to carry large items to vehicles.

### Commercial and Office Development

14. Commercial and Office development should provide suitable services and be of a size and scale commensurate to the airport's

major business enterprise role and employ environmental initiatives suited for the age, scale, size and operational efficiency of the airport environment.

### Industrial Development

15. Industrial development should be directed at transport and distribution activities, road transport terminals, freight and logistics services along with warehousing and storage, and employ suitable sustainable initiatives such as the use of solar energy, natural light and sun shading as appropriate.

### Community Facilities

16. An appropriate range of community facilities, such as aviation attractions, child care, consulting and health care and clubrooms, should be provided to service aviation training activities, visitors and employees at the airport. Passive and active recreation is suited in areas restricted by aviation height constraints, and may be possible in conservation zones if environmental impacts are effectively managed.

### Hazards

17. All development will incorporate measures to ensure that the operational integrity of adjacent navigation and communication systems is maintained at all times.

18. Buildings are to be designed and constructed of external materials which will not result in interference with aircraft navigational facilities located within the airport and not contribute to excessive glare and reflections externally.

19. Landscaping, stormwater management, ephemeral wetlands (vernal pools), waste management and construction activities shall not increase the attraction of wildlife and birds to the airport.

20. Lighting associated with buildings and internal roads should not result in a hazard to aviation operations and shall be constructed in accordance with the airport's requirements.

### Building Height

21. Buildings should be sited and be of a height which will not result in a breach of the Obstacle Limitation Surfaces and navigational clearance zones.

### Amenity

22. Development should provide appropriate separation distances from adjoining residential zones. The earthen mounds and fencing put in place around the perimeter of the northern-most Mawson Lakes residential enclave of "The Bridges" by the Mawson Lakes Project to ensure compatibility with the intended industrial activity on-airport should be enhanced by landscaping as the adjoining land on-airport is developed.

23. Suitable noise attenuation/amelioration measures, such as building siting and built format should complement the measures already initiated for this purpose by way of earthen mounds and fencing by the Mawson Lakes Project to ameliorate any potential noise impacts on the adjacent residential areas.

24. Airport buildings should be designed and constructed to protect occupants from aircraft noise in accordance with AS 2021-2000.

25. Accommodation facilities, particularly for students or other persons requiring short term accommodation, may be undertaken in appropriate precincts, but should:
    - be located outside the 25 ANEF contour; and
    - where located between the 20 to 25 ANEF contour, be sited, designed and constructed in accordance with AS 2021-2000 – Aircraft Noise – Building Siting and Construction.

26. Development should be located and designed to prevent adverse impact and conflict between land uses, particularly residential activities.

27. Development and the amenity of land should be enhanced with appropriate planting and other landscaping works, consistent with the Parafield Airport Landscaping Guidelines.

### Energy

28. Buildings should be designed and sited taking into account energy efficiency measures as outlined in the Building Code of Australia, (Section J) for the relevant building classification and consider the building fabric, glazing, sealing, air-conditioning, artificial lighting and power, hot water supply and accessibility. Aspects to be taken into account can encompass the following:
    - suitable insulation, door and window seals and internal/external blinds where suitable sun shading is not practical;
    - hot water efficiency through insulation of pipes and fittings and use of timers and thermostats;

- energy efficient heating and cooling selection, and where practical time/ occupancy controls;
- energy efficient lighting such as compact fluorescent bulbs or LEDs and maximising the use of natural light where possible;
- alternative energy supplies including installation of solar panels, or for larger facilities on-site co-generation plant;
- thermal building performance improvements on new buildings where feasible;
- building management systems at the design phase of new developments; and
- metered electricity consumption where feasible, as monitored by building area and by smart meters.

29. Development should provide for efficient solar access to buildings and open space all year round.

30. Development should facilitate the efficient use of photovoltaic cells and solar hot water systems by:
    - taking into account overshadowing from neighbouring buildings; and
    - designing roof orientation and pitches to maximise exposure to direct sunlight.

## Building Appearance

31. Building development should be of a quality standard and visual appearance, and present an attractive facade to public roads and any internal roads, consistent with building use and corporate images.

32. Buildings and associated elements, including landscaping, paving and advertising displays, should present a clear and coordinated appearance and exhibit a standard of design which will enhance the visual attractiveness and amenity of the zone.

33. The design of a building may be of a contemporary nature and exhibit an innovative style provided the overall form is consistent with the scale of the development and with the context of its setting with regard to shape, size, materials and colour.

34. Development should have a horizontal emphasis incorporating design elements which achieve visual articulation and relief.

35. Buildings should be of solid construction and appearance with facades visible to the public incorporating design elements which achieve visual articulation and relief such as:
    - windows;
    - canopies;
    - porticos and verandas;
    - parapet detailing and modelling: and
    - sun protection.

36. The external walls of buildings should integrate earthen colours and tones as well as blues and greys in lighter tones that match the skyline, varying with the size and scale of the development and the background, but can also include stronger colour schemes to provide visual interest if appropriate to the form of development and location.

## Access and Parking

37. Development should provide for appropriate vehicular and pedestrian linkages, with particular attention to the accessibility between commercial and retail developments fronting Main North Road.

38. On-site parking should be provided to meet the anticipated demand of development, with flexibility for further increases and taking into account linkages to public transport.

39. Development should be provided with safe and convenient access which:
    - avoids unreasonable interference with the flow of traffic on adjoining roads;
    - accommodates the type and volume of traffic likely to be generated by the development or land use; and
    - is sited and designed to minimise any adverse impacts on the occupants of and visitors to neighbouring properties.

40. Development should make sufficient provision on each individual site for the loading, unloading and turning of all traffic likely to be generated.

41. Vehicle parking areas should be sited and designed in a manner that will:
    - not inhibit safe and convenient traffic circulation;
    - result in minimal conflict between customer, employee and service vehicles;
    - where reasonably possible, provide the opportunity for shared use of car parking and integration of car parking areas with adjoining development to reduce the total extent of vehicle parking areas; and

- enable landscaping that will provide shade and enhance the appearance of such areas.

42. Bike and pedestrian paths should:
    - be designed to facilitate efficient links to neighbouring paths and facilities; and
    - be designed and provided in accordance with relevant provisions of the Australian Standards and AustRoads Guide to Traffic Engineering Practice.

### Service Areas

43. Mechanical plant, storage and service areas required for buildings and structures should be suitably located, designed, and screened from public view.

44. Storage areas should be suitably screened to present an attractive facade to adjoining development and from public and internal roads, and be of a suitable structure not susceptible to wind damage.

### Waste

45. New developments should aim to reduce the extent of construction waste going to landfill and post-occupancy allow for segregated waste recycling.

46. Putrescibles and food wastes should be contained securely at all times to prevent the attraction of wildlife that may compromise aircraft operational safety.

### Landscaping

47. Landscaping should be provided as a part of all developments and should:
    - enhance the visual amenity of the zone;
    - be of a high standard of design and visual appearance;
    - facilitate stormwater management strategies;
    - be undertaken in a manner that will not attract birds and compromise aircraft operational safety;
    - use locally indigenous plant species where possible, consistent with the Parafield Airport Landscaping Guidelines;
    - employ plantings that are drought tolerant; and
    - ensure adequate sight lines at access points.

### Water Sensitive Urban Design

48. Development should be designed to maximise conservation and minimise consumption through:
    - implementation of automated leak detection devices;
    - use of water-saving devices and fittings, such as dual flush toilets and water saving showerheads;
    - use of water efficient appliances such as suitably rated dishwashers;
    - water consumption metered and monitored; and
    - use of recycled water from available network supply points around the airport.

### Materials

49. Design, development and construction activities will consider materials selection and use strategies to:

    - encourage recycling or rejuvenation of materials where feasible (e.g. steel for non-structural members, recycled structural concrete, recycled bitumen, recycled timber);
    - consider local or regional supply of materials;
    - employ materials low in volatile organic compounds; and
    - encourage selection of building materials that are recyclable.

### Stormwater Management

50. Design, development and construction activities should incorporate stormwater management strategies to:
    - improve the quality of stormwater run-off;
    - minimise pollutant transfer to waterways and drainage channels; and
    - provide opportunities for re-use of stormwater and treated waste waters possibly in conjunction with the existing stormwater harvesting activity at Parafield Airport, managed by the City of Salisbury.

51. Development should provide stormwater management strategies that can be adopted for each land parcel, either individually or collectively for groups of buildings, and should incorporate grassed swales, gross pollutant traps and flow detention areas where possible.

52. Stormwater drainage swales should be designed according to function and space, be grassed and allow passive and active recreation facilities in suitable locations.

53. Internal roads and car parking areas should be designed to direct stormwater to adjacent stormwater easements. Where possible, an appropriate porous paving (or pipe drainage to tree root levels) might be considered, as well as "soft shoulders".

54. Stormwater runoff from roofing should be separated and treated in a separate manner to ground surface flows where possible, and opportunities for re-use optimised.

55. Stormwater management systems should:
    - maximise the potential for stormwater harvesting and re-use, as close as practicable to the source;
    - utilise, but not be limited to, one or more of the following harvesting methods:
        - the collection of roof run-off water in tanks;
        - the discharge to open space, landscaping or garden areas, including strips
        - adjacent to car parks; and
        - the incorporation of detention and retention facilities, in conjunction with the existing stormwater harvesting activity managed by the City of Salisbury, through use of the existing Airport stormwater drainage easements.

### Recreation

56. Recreation areas should provide pleasant, functional and accessible open spaces for formal and informal recreation activities.

57. Bike and pedestrian paths should service recreation areas or be located in close proximity to enable ease of access.

58. Development in recreation areas should not compromise the operational or safety requirements of the airport.

59. Development in recreation areas should:
    - be clustered, where practical, to ensure that the majority of the site remains open;
    - where practical, be developed for multi-purpose use; and
    - be located and designed to maximise safety and security of users.

60. Recreation areas should be sited and designed to minimise negative impacts on the amenity of the locality.

### Signage

61. Outdoor signage, attached to buildings, should be located, sited, designed, constructed of such materials, and be of a size and shape so as to:
    - be in scale and proportion with the development as a whole, the buildings therein and the desired character of the area;
    - be coordinated with and complement the architectural form and design of the building it is to be located on or adjacent to;
    - not distract attention from traffic control information; and
    - clearly identify retailing activity where appropriate.

62. The number of signs associated with a development should take into account the nature of the use and consider:
    - clutter;
    - disorder; and
    - untidiness of buildings and their surrounds.

63. Free standing and illuminated signs should be located to be clearly visible from nearby roadways and impart instruction or advertising messages succinctly, and be of a form with clear structural lines. Presentation should be arranged to clearly impart the message content, but not create excessive distraction to traffic. Tree and shrub growth should be maintained around the signage so as not to detract from the message portrayal.

### Crime Prevention

64. Development should:
    - be designed to provide a safe, secure, crime resistant environment;
    - provide a robust environment that is resistant to vandalism and graffiti;
    - provide lighting in frequently used public spaces, including along dedicated bike and pedestrian paths and around public facilities such as toilets, telephones, bus stops and car parks;
    - use landscaping to discourage crime;
    - avoid pedestrian entrapment spots and movement predictors; and
    - take into account the secure restricted nature of the Runways Precinct of the Airport Zone.
    - movement predictors; and
    - take into account the secure restricted nature of the Runways Precinct of the Airport Zone.

### Site Contamination

65. Development, including land division, should not occur unless the site has been assessed and remediated as necessary to ensure that it is suitable and safe for the proposed use.

## 6.8 RUNWAYS PRECINCT

This section addresses land use planning for the Runways Precinct which is shown in Figure 6.7.

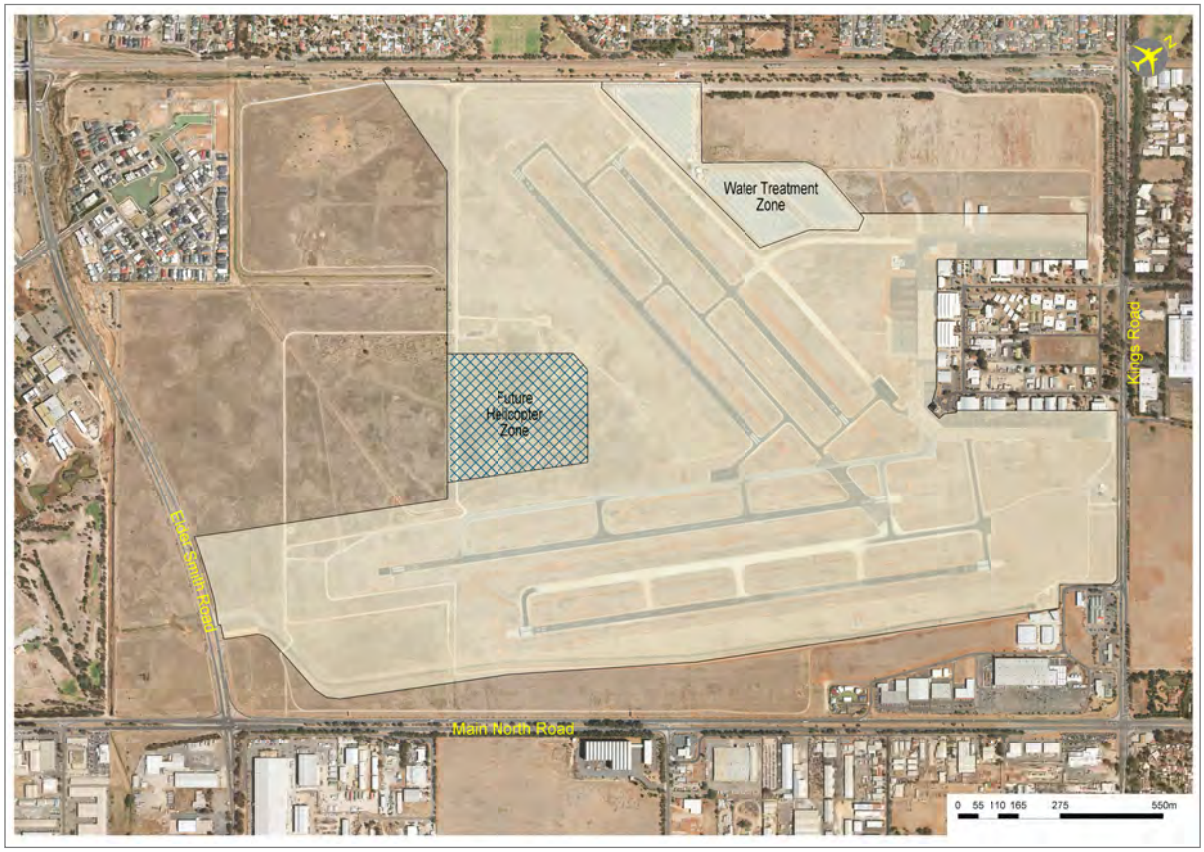



Figure 6.7 Runways Precinct Plan

### 6.8.1 Objectives

The objectives of the Runways Precinct are to provide:

1. An area accommodating:
   - safe aircraft landing, take off and taxiing operations, both for fixed wing and rotary services;
   - aircraft navigation aids, radar and communications equipment;
   - air traffic control, aviation rescue and fire fighting and meteorological services; and
   - aviation-related support industry.

2. Safe and efficient access and operation of all movement area infrastructure recognising aircraft type, number of aircraft movements and surrounding development on airport land.

3. A safe and enhanced environment for the precinct provided through:
   - controlled access and secure movement and operational areas; and
   - landscaped buffers between the movement area and Kings Road, along railway spur lines and adjacent to other precincts where screening is required.

4. Management of the environmental vernal pool, at the southern end of the precinct adjacent to Elder Smith Road, so that bird attraction is minimised pending runway extension.

### 6.8.2 Desired Character

The Runways Precinct occupies the major portion of the airport and is essentially bounded by the other precincts. The precinct is an area of the airport set aside to be protected for the operation and movement of aircraft and associated activities. Development within the precinct should focus on the aviation needs of the airport, with ancillary and related support facilities enhancing the airport's operation.

Activities of an environmental nature, or that assist in sustainable development in the nature of water harvesting are appropriate in the precinct, provided they do not result in an adverse impact on the airport's aviation operations.

Railway spur lines, linking to the lines to the west of the airport, may also be appropriate in the precinct.

## 6.8.3 Principles of Development Control

### Structure Plan

1. Development should be generally in accordance with the Runways Precinct Structure Plan (Figure 6.8) and the forms of development listed as Envisaged Development.

### General

2. Development should be primarily associated with the operational aspect of the precinct and aviation related support industry.

3. Runways, taxiways and aircraft movement areas should be designed and developed:
   - to maximise the capacity of the existing infrastructure;
   - to ensure safe and efficient movement of aircraft operations;
   - to minimise aircraft noise impacts and environmental impacts generally;
   - in a cost effective manner; and
   - to comply with national and international mandates and standards.

4. Activities of an environmental nature, such as stormwater harvesting and the maintenance of existing vernal pools may be appropriate in the precinct but should not result in an adverse impact on the aviation operations.

5. Landscaped buffers should provide an enhanced environment:
   - between aircraft movement areas and Kings Road;
   - along railway spur lines; and
   - adjacent to other precincts where screening is required.

### Viewing Area

6. Any public viewing area and open space should:
   - be aesthetically pleasing;
   - be restricted to designated areas; and
   - provide for safe and efficient vehicular and pedestrian movement.

### Access

7. Access to the precinct should be strictly controlled and the area suitably secured from adjacent precincts with:
   - appropriate security perimeter fencing incorporating access control measures; and
   - surveillance monitoring as necessary.

## 6.8.4 Procedural Matters

### Envisaged Development

Air traffic control tower/area approach control centre
Aircraft parking
Aquifer storage and recovery/stormwater detention and harvesting
Aviation attractions
Aviation-related support industry
Communication facility (aviation-related)
Emergency staging area
Farming
Fire fighting and rescue facility
Fixed base operations
Fuel depot
General aviation landing & parking
Helicopter operations, training and maintenance
Rail transport terminal and rail lines
Renewable Energy Generation
Runway related activities/facilities
Soil treatment facility
Weather and atmospheric testing facility

### Non-complying Development

Brand outlet centre and associated support retailing
Bulky goods retailing
Child care centre
Community health centre
Dwelling
Fast food outlet
Hotel, tavern and liquor outlet
Motel
Motor repair station
Industry
Office
Residential Accommodation (for students involved in aviation education/training)
Restaurant
Service trade premises
Shop
Waste transfer station

## Agency Referral and Public Notification

Agency Referral and Public Notification is undertaken for all forms of development that are not listed as Envisaged Development in accord with Figure 6.5 Development Decision Matrix.

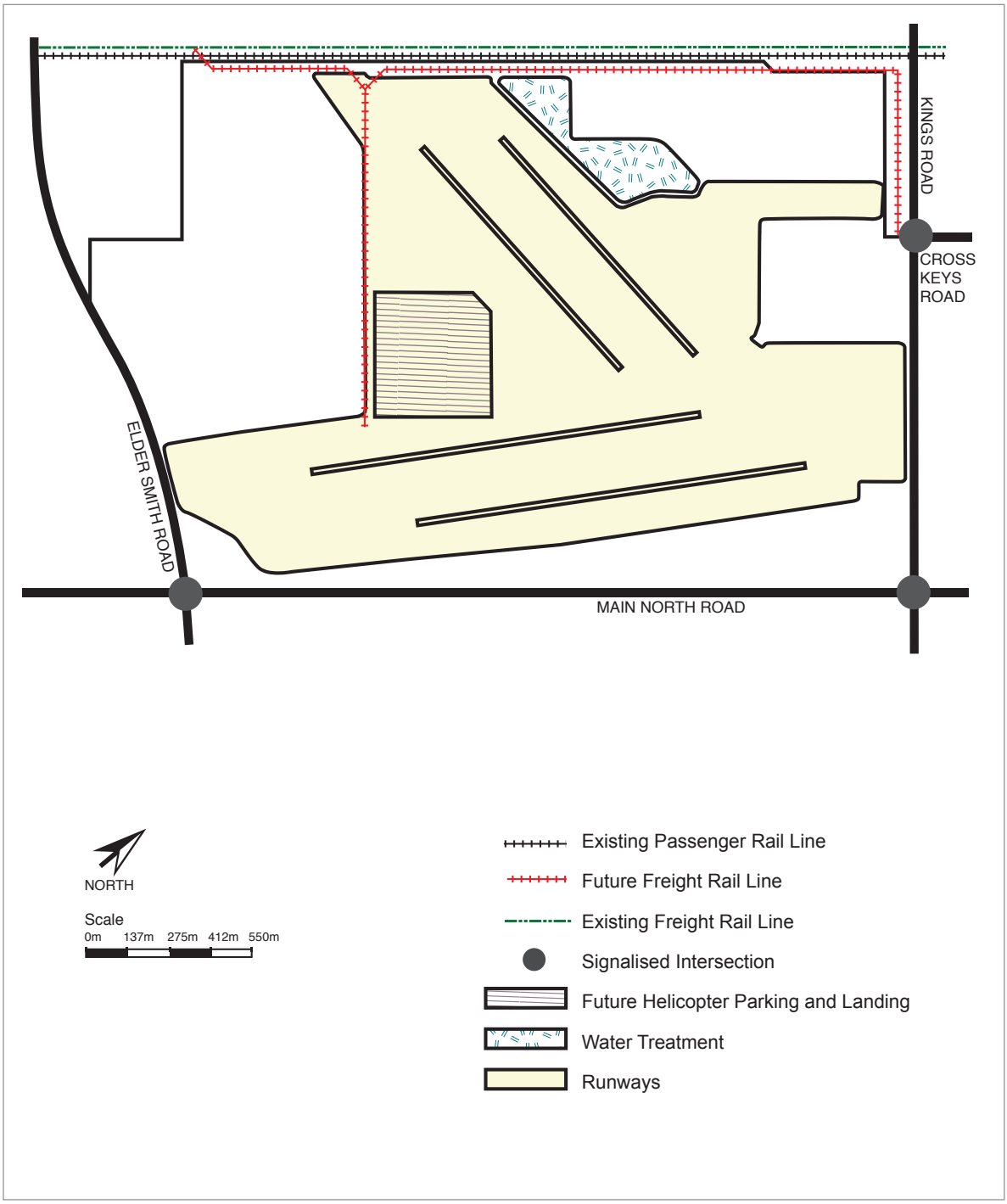



Figure 6.8 Runways Precinct Structure Plan

# 6.9 CENTRAL PRECINCT

This section addresses land use planning for the Central Precinct which is shown in Figure 6.9.

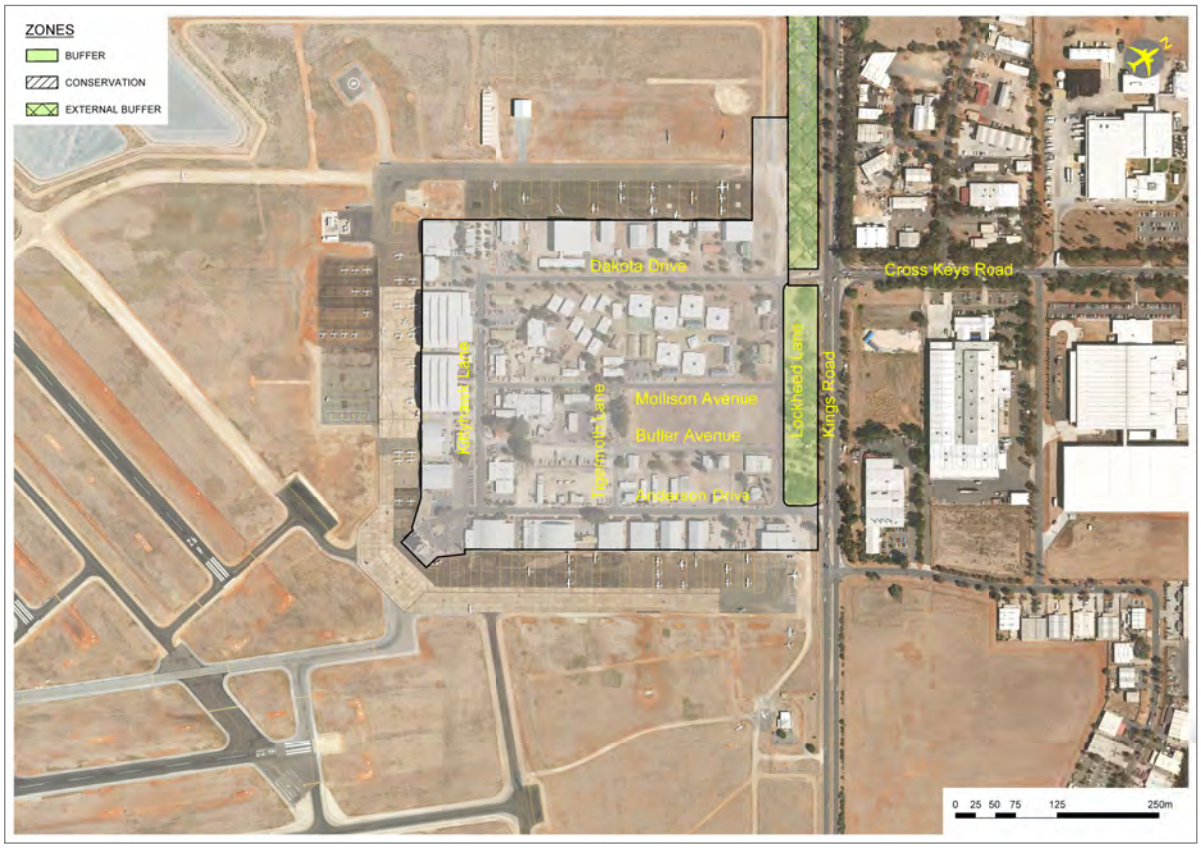



Figure 6.9 Central Precinct Plan

## 6.9.1 Objectives

The objectives of the Central Precinct are to provide:

1. An area primarily accommodating a range of commercial, industrial and aviation-related activities, including aviation attractions and museums.

2. An area accommodating aviation-related training facilities and associated infrastructure, including residential accommodation for students.

3. Enhancement of the amenity of the precinct, including maintenance of a landscaped buffer along the frontage to Kings Road.

## 6.9.2 Desired Character

The Central Precinct is located with a frontage to Kings Road and is bounded to the east, south and west by the Runways Precinct.

The Airport Control Tower in the south eastern corner of the Precinct forms the strong focal point of aviation activity, in recognition of its past relationship to airport history.

The precinct encompasses the main terminal and aviation engineering facilities, aviation training facilities, aviation museum activities and associated infrastructure. Land use is predominantly aviation-related with some commercial and industrial uses interspersed with community activities, such as aviation museums and clubs.

A landscaped frontage to Kings Road is to be maintained to complement proposed expanded aviation attractions and museums.

## 6.9.3 Principles of Development Control

### Structure Plan

1. Development should be generally in accordance with the Central Precinct

Structure Plan (Figure 6.10) and the forms of development listed as Envisaged Development.

### General

2. Residential accommodation, for students or other persons involved in flight training or aviation services is appropriate in the precinct, with development constructed to AS 2021-2000: *Aircraft Noise – Building Siting and Construction*.

### Amenity

3. Development should not adversely impact on the character, amenity, function and operation of the airport and nearby land by way of:
   - excessive noise, smoke, smell, dust or other nuisance; and
   - character and scale of buildings.

## 6.9.4 Procedural Matters

### Envisaged Development

Advertising
Air traffic control tower/area approach control centre
Aviation attractions
Aviation education establishment or academy
Aviation-related support industry
Car parking
Child care centre
Club rooms
Community health centre
Consulting rooms
Courier/freight terminal
Fixed base operations
Fuel depot
Indoor recreation centre
Kennel management facility
Light industry
Office
Office/warehouse
Recreation and sporting area (compatible with conservation initiatives)
Research and development facility
Restaurant
Residential accommodation (for students involved in aviation education/training)
Service industry
Shop (to service the day-to-day needs of the workforce, visitors, students and those residents in the precinct including local supermarket convenience store)
Store
Telecommunications facility
Warehouse

### Non-complying Development

Service trade premises
Shop (other than to service the day-to-day needs of the workforce, visitors, students and those resident in the precinct).
Special industry
Waste transfer station

### Agency Referral and Public Notification

Agency Referral and Public Notification is undertaken for all forms of development that are not listed as Envisaged Development in accord with Figure 6.5 Development Decision Matrix.

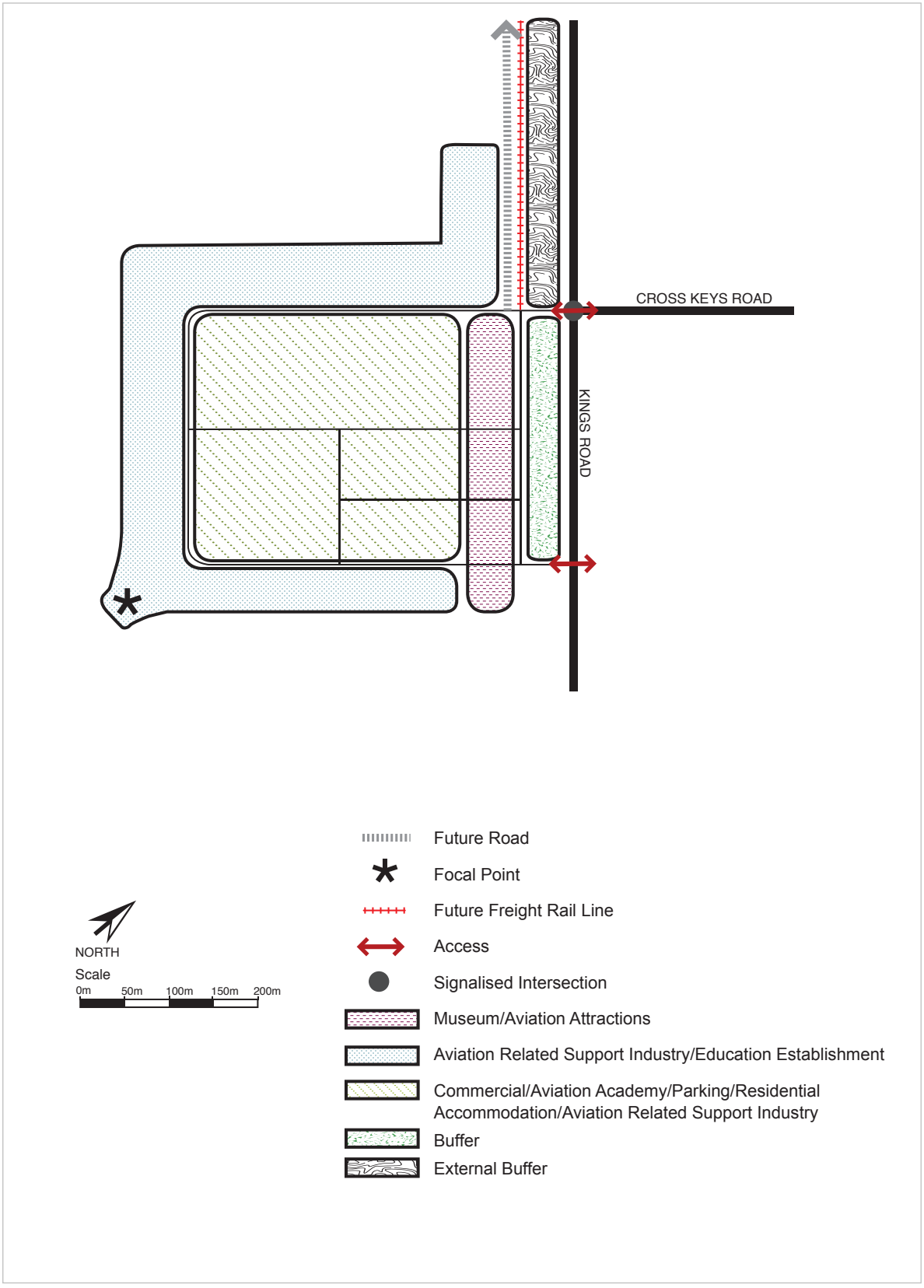



Figure 6.10 Central Precinct Structure Plan

## 6.10 COMMERCIAL ESTATE PRECINCT

This section addresses land use planning for the Commercial Estate Precinct which is shown in Figure 6.11.

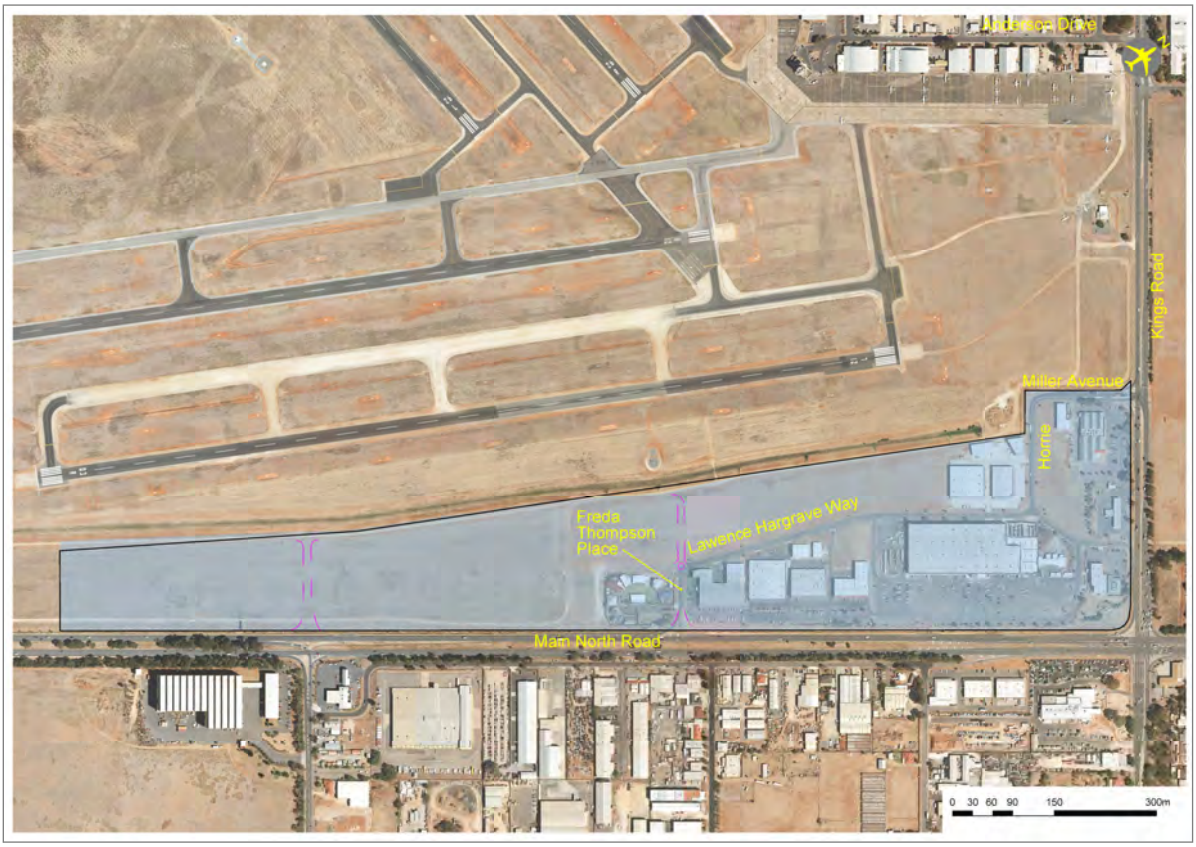



Figure 6.11 Commercial Estate Precinct Plan

### 6.10.1 Objectives

The objectives of the Commercial Estate Precinct are to provide:

1. An area primarily operating as a centre for accommodating a range of commercial, service trade and retailing facilities, such as a brand outlet centre and associated support retail activities, bulky goods retailing, retail showrooms and other shops, capitalising on the highway nature of Main North Road and consistent with its status as a Bulky Goods Centre in the State 30 Year Plan for Greater Adelaide (2010).

2. Safe and convenient pedestrian access and car parking throughout the precinct.

3. An integrated landscape theme throughout the precinct.

### 6.10.2 Desired Character

The Commercial Estate Precinct is located in the north-east corner of the airport with frontage to Main North Road (a Primary Arterial Road) and Kings Road (a Secondary Arterial Road). The precinct therefore has a prime location and exposure to significant traffic volumes. Access is to be gained from various entrances/exits along Main North Road and signalised intersections, and other similar cross overs along Kings Road.

The precinct will accommodate a range of commercial, service, trade and large scale retailing facilities, with supporting shops and services.

Built form will be of a contemporary design, with a consistent architectural theme when viewed from adjacent roads. Buildings will have a horizontal emphasis and be designed to reduce their visual bulk through design elements such as articulation, colour and detailing and variations to facades. Car

parking areas will be integrated and landscaped to enhance amenity and provide screening and shade. Pedestrian paths will provide for safe movements and be clearly delineated.

## 6.10.3 Principles of Development Control

### Structure Plan

1. Development should be generally in accordance with the Commercial Structure Plan (Figure 6.12) and the forms of development listed as Envisaged Development.

### Amenity

2. Development should not create any excessive noise, smoke, smell, dust or other nuisance.

### Land Division

3. Allotments created by land division should generally have:
   - a minimum allotment size of 2000 square metres; and
   - a minimum frontage width of 30 metres.

### Appearance and Design

4. Development should be undertaken in accordance with the "Commercial Estate Precinct Design Guidelines" 2011.

## 6.10.4 Procedural Matters

### Envisaged Development

Advertising
Brand outlet centre and associated support retailing
Building and/or landscaping materials
Bulky goods retailing
Consulting rooms
Fast food outlet
Home display and building centres
Hotel, tavern and liquor outlet
Motel
Motor repair station
Motor vehicle auction/storage/showrooms
Office
Petrol filling station
Restaurant
Service trade premises
Shop
Store
Telecommunications facility
Warehouse

### Non-complying Development

Dwelling
General industry
Special industry
Waste transfer station

### Agency Referral and Public Notification

Agency Referral and Public Notification is undertaken for all forms of development that are not listed as Envisaged Development in accord with Figure 6.5 Development Decision Matrix.

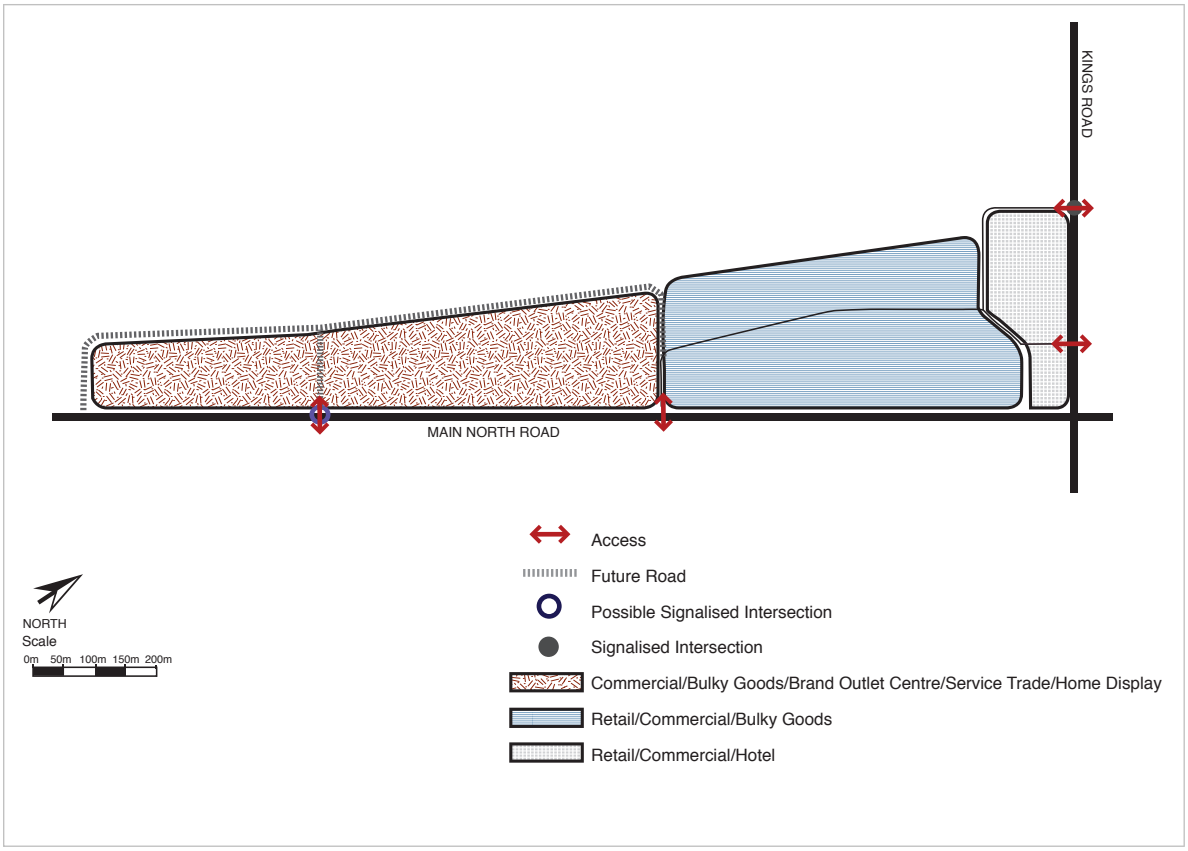



Figure 6.12 Commercial Estate Precinct Structure Plan

## 6.11 LEVELS PRECINCT

This section addresses land use planning for the Levels Precinct which is shown in Figure 6.13.


Figure 6.13 Levels Precinct Plan

### 6.11.1 Objectives

The objectives of the Levels Precinct are to provide:

1. Smaller scale commercial and tourism-related activities that are complementary to the adjoining aviation services and suitable industrial and home display and building centres.

2. An area accommodating active recreation uses, associated spectator facilities, administrative functions and other ancillary uses within a well landscaped setting.

### 6.11.2 Desired Character

The Levels Precinct is located in the south eastern corner of the airport. Development opportunities are more restricted in this precinct due to constraints imposed by the proximity of the 03/21 Runways. Access is limited to a left in, left out slip roadway from Elder Smith Road and another to occur from Main North Road, with this latter access possibly shared with the adjoining Commercial Estate Precinct to the north.

While active recreation uses and associated facilities are proposed in the precinct, closer to stormwater easements, commercial activities such as a motel including a licensed restaurant and bar, service trade premises or display homes and motor vehicle showrooms or auction yards are also appropriate.

### 6.11.3 Principles of Development Control

#### Structure Plan

1. Development should be generally in accordance with the Levels Precinct Structure Plan (Figure 6.14) and the forms of development listed as Envisaged Development.

2. Development should be complementary to aviation services.

#### Amenity

3. Development should not adversely impact on the character, amenity, function and operation

of the airport and nearby land by way of:
- excessive noise, smoke, smell, dust or other nuisance;
- hours of operation; and
- character and scale of buildings.

### Car Parking

4. All car parking areas, internal roadways, driveways and paths should be constructed and sealed to an appropriate standard commensurate with likely vehicle usage.

## 6.11.4 Procedural Matters

### Envisaged Development

Advertising
Club Rooms
Farming
Fast food outlet
Golf driving range & mini golf
Home display and building centre
Horticulture
Motel
Motor vehicle auction/storage/showrooms
Petrol Filling Station
Recreation and sporting area (compatible with conservation initiatives)
Service trade premises
Shop or kiosk with gross leasable area of 50 square metres or less

### Non-complying Development

Dwelling
Industry
Road transport terminal
Shop or kiosk with gross leasable area greater than 50 square metres
Special industry
Waste transfer station

### Agency Referral and Public Notification

Agency Referral and Public Notification is undertaken for all forms of development that are not listed as Envisaged Development in accord with Figure 6.5 Development Decision Matrix.


Figure 6.14 – Levels Precinct Structure Plan

## 6.12 BENNETT PRECINCT

This section addresses land use planning for the Bennett Precinct which is shown in Figure 6.15.

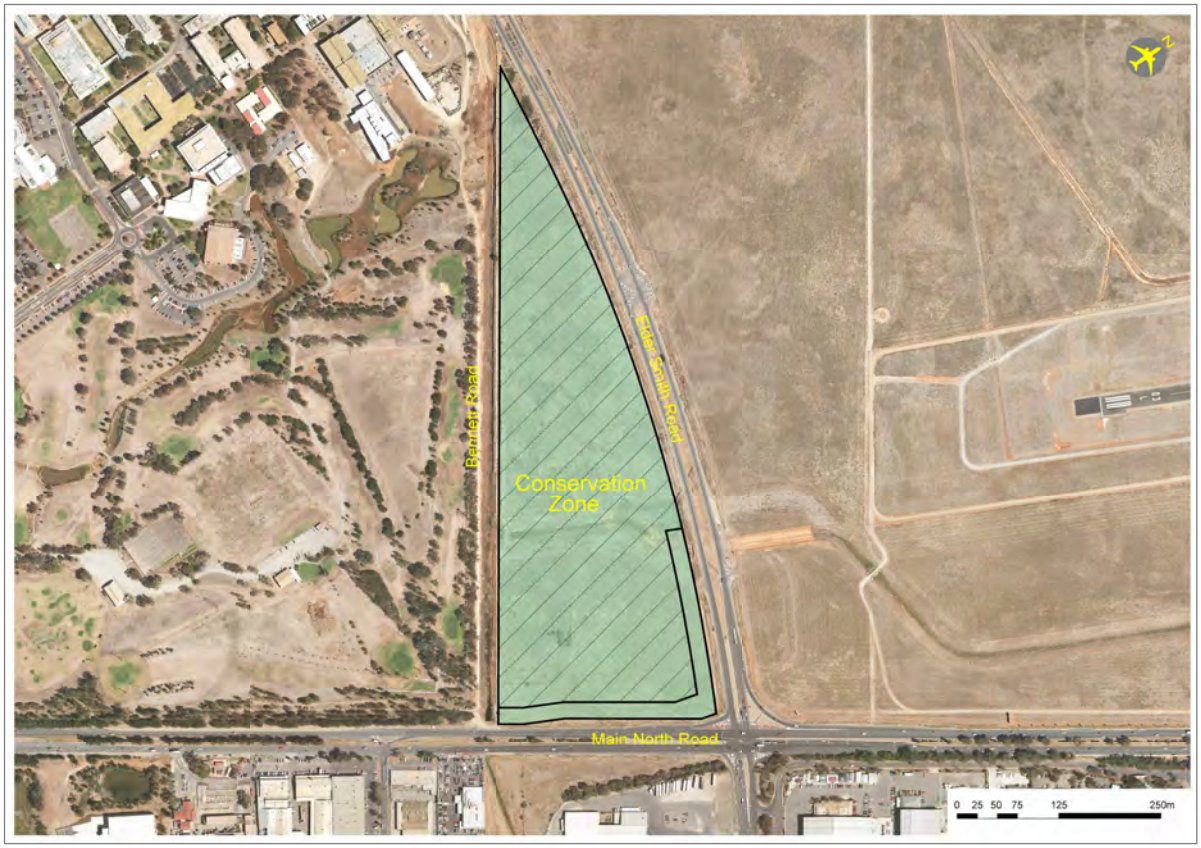



Figure 6.15 Bennett Precinct Plan

### 6.12.1 Objectives

The objectives of the Bennett Precinct are to provide:

1. An area providing protection for sites of conservation significance and development of compatible uses such as education and interpretive facilities, and limited ancillary uses such as retail kiosks, amenities and car parking. Sporting activity may be suitable if compatible within conservation areas.

2. Limited access from the Bennett Road alignment and also restricted service access from Elder Smith Road.

3. Development exhibiting an appropriate standard of building design with elements, features, services and infrastructure compatible with the primary conservation focus of the precinct.

4. Possible establishment and maintenance of sporting and environmental linkages with the University of South Australia land to the south.

5. Free-standing advertising signage is appropriate, suitably placed external to the individual vernal pool catchments.

### 6.12.2 Desired Character

The Bennett Precinct is located at the southern end of the airport to the south of Elder Smith Road, which provides an east-west link between Main North Road and Salisbury Highway.

The precinct provides conservation and rehabilitation opportunities for vernal pool communities and several sites of aboriginal significance (Refer Figure 6.3). Compatible uses such as sporting and recreation, education and interpretive facilities and aeronautical equipment may be appropriate, along with an ancillary kiosk and amenities.

Vehicular access to the precinct will be limited to that required in association with conservation/ interpretive facilities and to service any associated kiosk and amenities.

## 6.12.3 Principles of Development Control

### Structure Plan

1. Development should be generally in accordance with the Bennett Precinct Structure Plan (Figure 6.16) and the forms of development listed as Envisaged Development.

### General

2. Development should be compatible with conservation and rehabilitation opportunities for vernal pool communities and should be sited, designed and operated to minimise adverse impacts on the management of flora, fauna or archaeological sites.

### Amenity

3. Development should not adversely impact on the character, amenity, function and operation of the airport and nearby land by way of:
   - excessive noise, smoke, smell, dust, stormwater run-off or other nuisance;
   - hours of operation; and
   - character and scale of buildings.

### Access

4. Access to the precinct should be limited to that required:
   - for conservation initiatives, including associated education/interpretive facilities;
   - for possible sporting and recreation activities;
   - maintenance of aeronautical equipment or advertising signs; and
   - for linkage between the airport and the University of South Australia land to the south.

5. The main access point is to be from the Bennett Road alignment plus restricted service access to Elder Smith Road.

## 6.12.4 Procedural Matters

### Envisaged Development

Advertising
Car parking
Conservation initiatives
Recreation and sporting area (compatible with conservation initiatives)
Shop or kiosk with gross leasable area of 50 square metres or less

### Non-complying Development

Bulky goods retailing /retail showroom
Dwelling
Industry
Motor repair station
Shop with a gross leasable floor area greater than 50 square metres
Special industry
Warehouse
Waste transfer station

Note:
While existing conservation initiatives are classified as Envisaged Development, the inherent vernal pools can be classified as an activity often considered incompatible to aviation services due to the potential for bird attraction. Careful maintenance and management of these areas is essential to minimise bird attraction and the risk of aircraft bird strikes.

### Agency Referral and Public Notification

Agency Referral and Public Notification is undertaken for all forms of development that are not listed as Envisaged Development in accord with Figure 6.5 Development Decision Matrix.

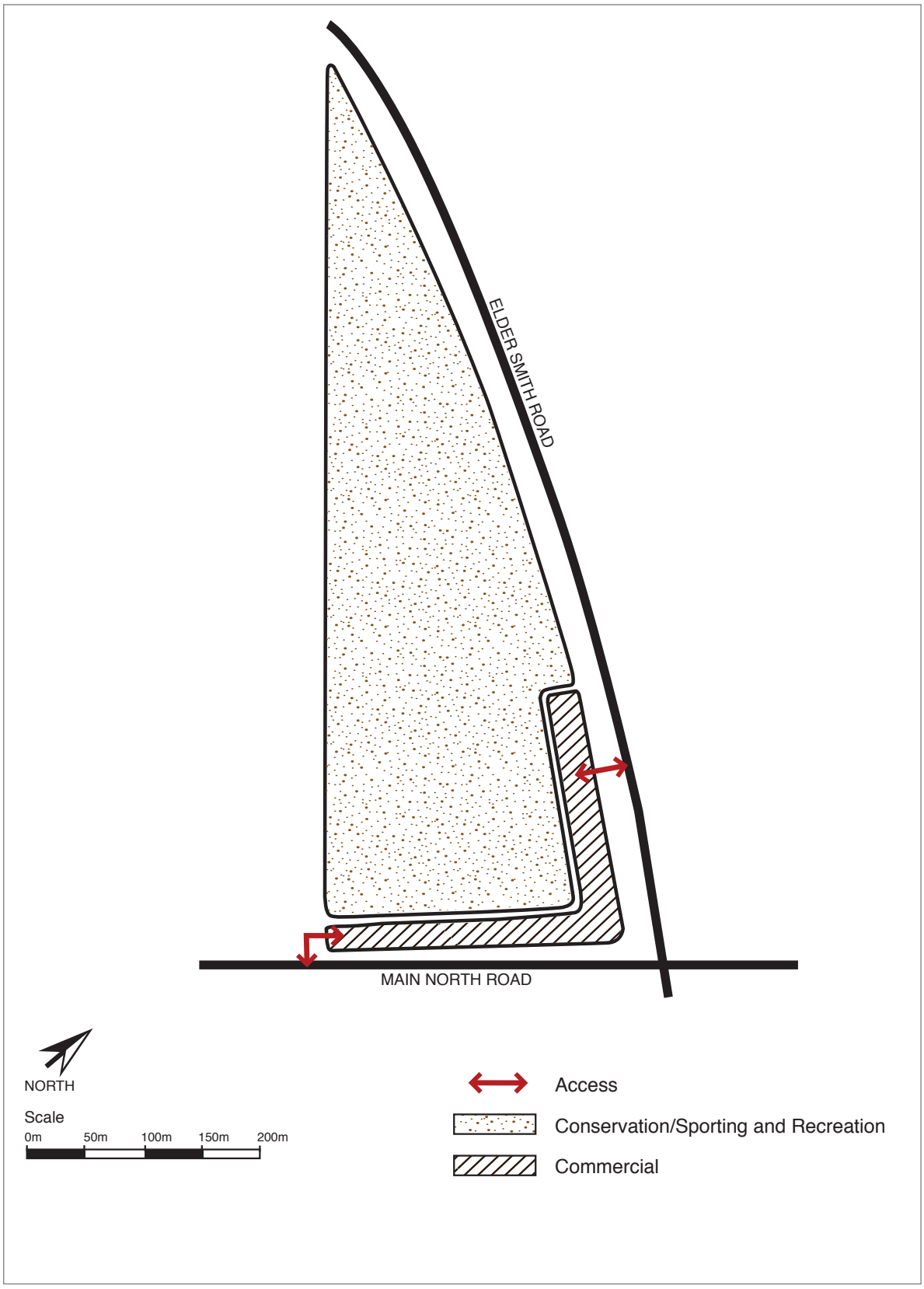



Figure 6.16 Bennett Precinct Structure Plan

## 6.13 CROSS KEYS PRECINCT

This section addresses land use planning for the Cross Keys Precinct which is shown in Figure 6.17.

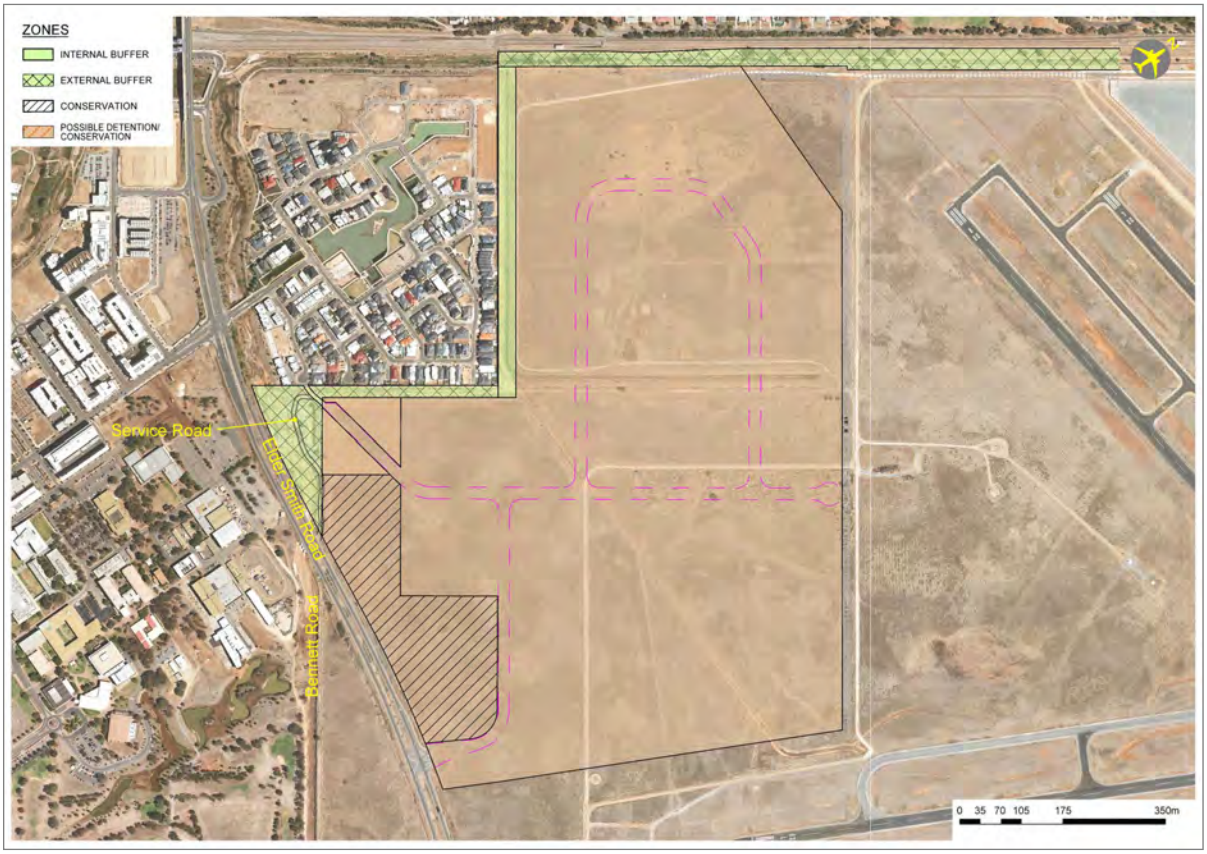



Figure 6.17 Cross Keys Precinct Plan

### 6.13.1 Objectives

The objectives of the Cross Keys Precinct are to provide:

1. An area primarily accommodating a range of commercial, industrial, warehousing and possible aviation related support industries in the form of an 'enterprise park', with possible links to the nearby railway network.

2. An area accommodating development which caters for a range of innovative and technology-based activities relative to an industrial base or to clean technology activities.

3. A limited area providing protection for sites of conservation significance fronting Elder Smith Road by way of vernal pools (refer Figure 6.3).

### 6.13.2 Desired Character

The Cross Keys Precinct is located on the southern side of the airport and has a boundary with Elder Smith Road to the south and also with a section of Mawson Lakes residential area in the south western corner. It comprises the majority of the developable land on this side of the airport.

It is proposed that a range of commercial, industrial, warehousing and possible aviation related support industries be established in the precinct. A railway spur link, which may be established in the adjoining Runways Precinct, will provide additional opportunities for the movement of materials and products into, or out of, the Cross Keys Precinct.

The south-eastern portion of the precinct, being retained for conservation purposes accommodating vernal pools, will allow for a suitable setback of development facing Elder Smith Road.

The adjoining Mawson Lakes residential area has been developed with suitable acoustic mounds and fencing to limit potential adverse impacts from the development of Cross Keys Enterprise Park. Further landscaping will be arranged along the boundary of the two activities where warranted.

Primary vehicle access to the precinct is to be gained through a constructed, designated point on Elder Smith Road, through a feeder road leading into the eastern portion of the precinct. Secondary vehicle access is to be permitted through St Kitts Place, Mawson Lakes as accepted by DPTI and the City of Salisbury, with further information included in the Ground Transport Plan (Volume 2 of this MP).

## 6.13.3 Principles of Development Control

### Structure Plan

1. Development should be generally in accordance with the Cross Keys Precinct Structure Plan (Figure 6.18) and the forms of development listed as Envisaged Development.

2. Development should be undertaken in the following manner to contain similar land uses to specified localities:
   - commercial/educational, office/warehouse and light industry uses should be primarily located in the southern portion of the precinct; and
   - industrial development, such as road transport terminals and freight and logistics should be primarily located in the central and northern portions of the precinct, adjacent to possible railway spur lines.

### Amenity

3. Development should not adversely impact on the character, amenity, function and operation of the airport and nearby land by way of excessive noise, smoke, smell, dust or other nuisance.

## 6.13.4 Procedural Matters

### Envisaged Development

Advertising
Aviation related support industry
Building and/or landscaping materials
Cold storage facilities
Conservation initiatives (adjacent to Elder Smith Road only)
Courier/freight terminal
Electricity substation
Farming
Freight and distribution centre
Industry (except special industry)
General industry
Light industry
Motor repair station
Motor vehicle auction/storage/showrooms
Office
Office/warehouse
Public service depot
Rail transport terminal and rail lines
Research and development facility
Service industry
Service trade premises
Shop (to service the day-to-day needs of the workforce and visitors to the precinct)
Store
Telecommunications facility
Warehouse and distribution

### Non-complying Development

Dwelling
Shop (other than to service the day-to-day needs of the workforce and visitors to the precinct)
Special industry
Waste transfer station

### Agency Referral and Public Notification

Agency Referral and Public Notification is undertaken for all forms of development that are not listed as Envisaged Development in accord with Figure 6.5 Development Decision Matrix.

Note:
While existing conservation initiatives are classified as Envisaged Development, the inherent vernal pools can be classified as an activity often considered incompatible to aviation services due to the potential for bird attraction. Careful maintenance and management of these areas is essential to minimise bird attraction and the risk of aircraft bird strikes.

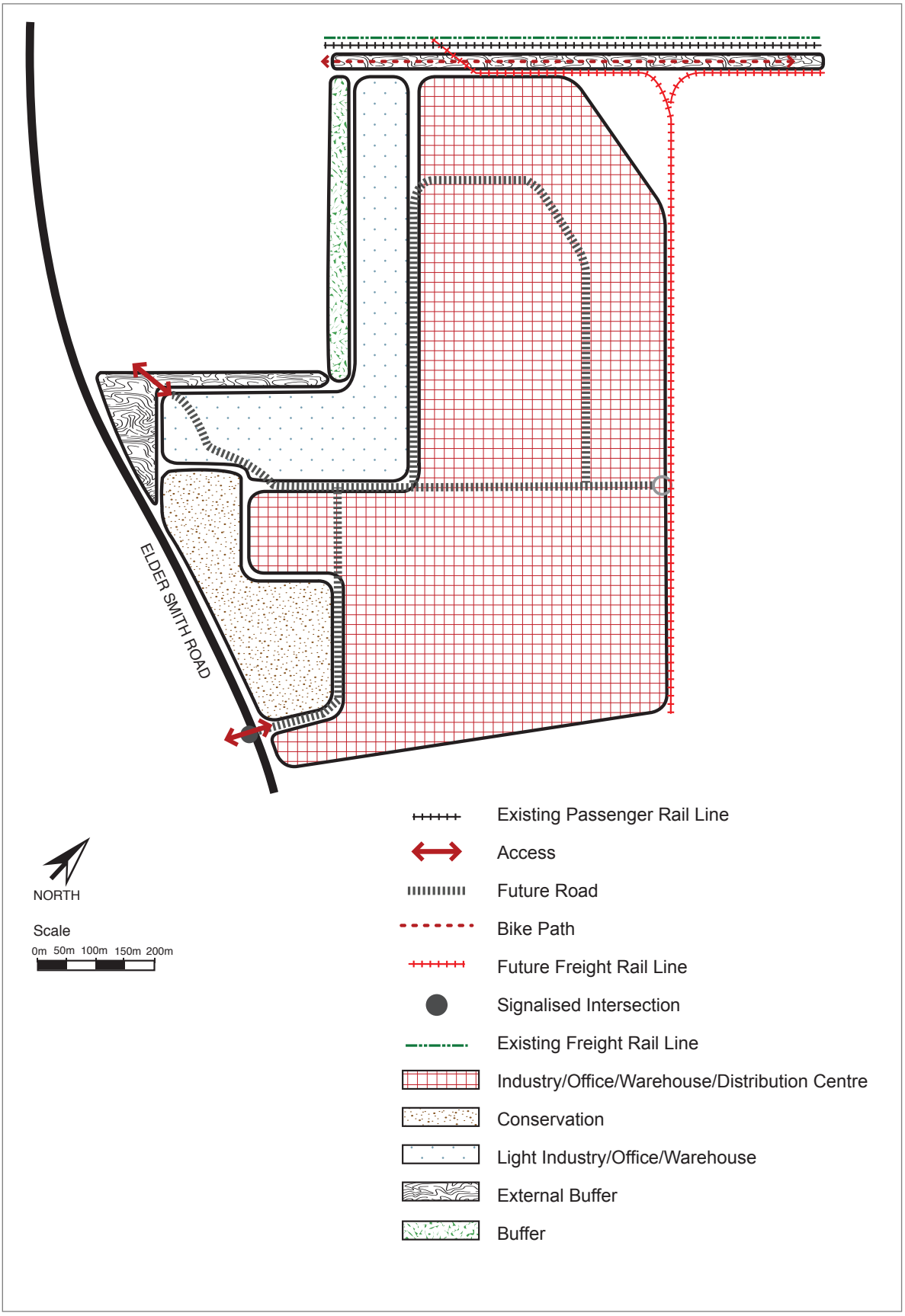



Figure 6.18 – Cross Keys Precinct Structure Plan

# 6.14 KINGS PRECINCT

This section addresses land use planning for the Kings Precinct which is shown in Figure 6.19.

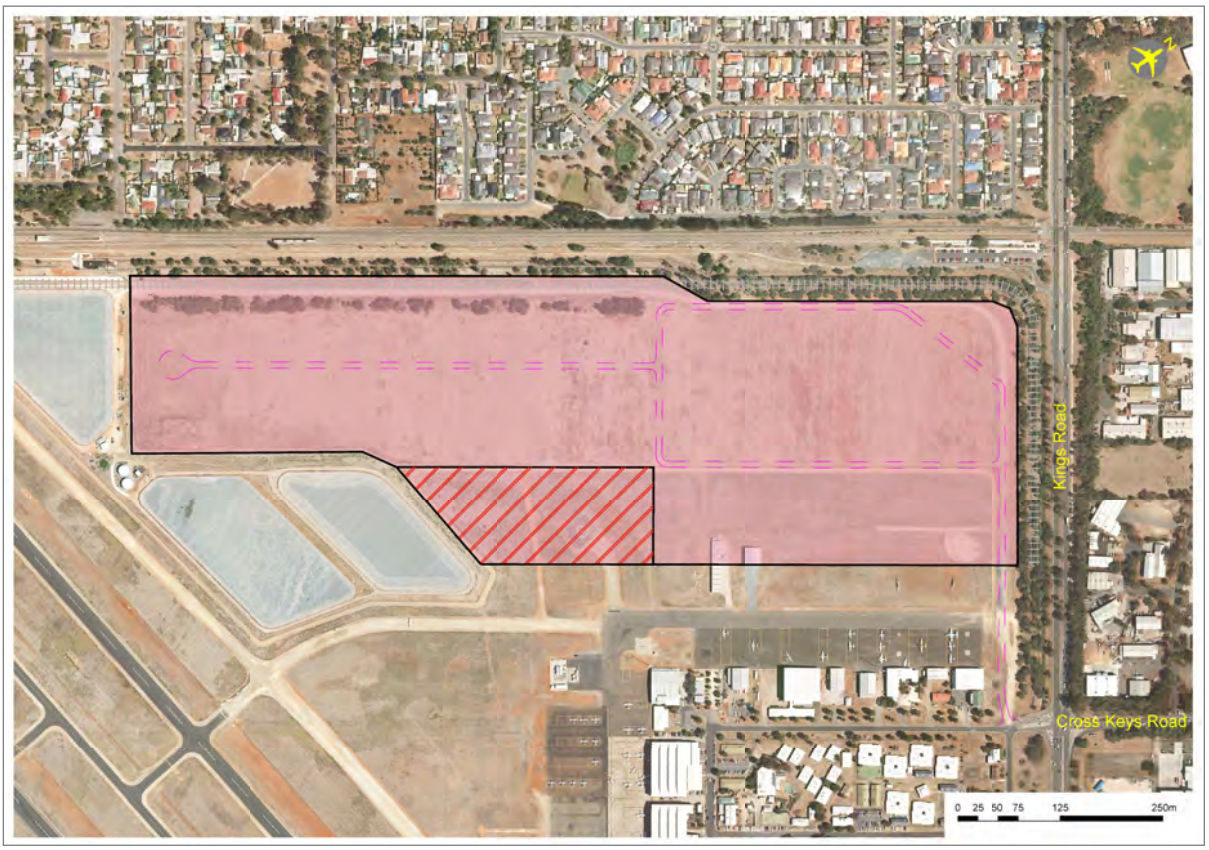



Figure 6.19 Kings Precinct Plan

## 6.14.1 Objectives

The objectives of the Kings Precinct are to provide:

1. An area primarily accommodating a range of commercial, industrial and aviation-related support industry activities.
2. Establishment of linkages with existing transportation corridors to foster a transportation network and hub.
3. Opportunities for warehousing and industry in the western area of the precinct.

## 6.14.2 Desired Character

The Kings Precinct is located in the north-western corner of the airport, bounded by the Adelaide to Darwin rail line and commuter train lines to the west and Kings Road to the north.

The eastern sector of the precinct, adjacent to the Central Precinct, provides a logical area for expansion of aviation related industry. In the north western corner, there is an ideal location for the establishment of a "Park and Ride" Car Park associated with the Parafield Railway Station.

A rail spur line, linking to the lines to the west of the airport, may also be appropriate in the precinct.

The area of land currently used for interim helicopter parking and landing shown in Figure 6.20 would revert to aviation-related support industry once helicopters are relocated to the Runways Precinct.

## 6.14.3 Principles of Development Control

### Structure Plan

1. Development should be generally in accordance with the Kings Precinct Structure Plan (Figure 6.20) and the forms of development listed as Envisaged Development.

### General

2. Residential accommodation, for flight training or aviation engineering students, may be appropriate where it is undertaken in association with an activity established, or to be established, in the precinct or in an adjoining precinct.

### Amenity

3. Development should not adversely impact on the character, amenity, function and operation of the airport and nearby land by way of excessive noise, smoke, smell, dust or other nuisance.

## 6.14.4 Procedural Matters

### Envisaged Development

Advertising
Aviation related support industry
Aviation education establishment or academy
Car Parking
Courier/freight terminal
Electricity substation
Farming
Fixed base operations
Fuel depot
Helicopter operations, training and maintenance
Industry (except Special Industry)
Kennel management facility
Office
Office/warehouse
Park & Ride car parking
Rail transport terminal and rail lines
Research and development facility
Residential Accommodation (for students involved in aviation education/training)
Public service depot
Service industry
Shop (to service the day-to-day needs of the workforce, visitors, resident students and those resident in the precinct)
Store
Telecommunications facility
Warehouse

### Non-complying Development

Shop (other than to service the day-to-day needs of the workforce, visitors, resident students)
Special industry
Waste transfer station

### Agency Referral and Public Notification

Agency Referral and Public Notification is undertaken for all forms of development that are not listed as Envisaged Development in accord with Figure 6.5 Development Decision Matrix.

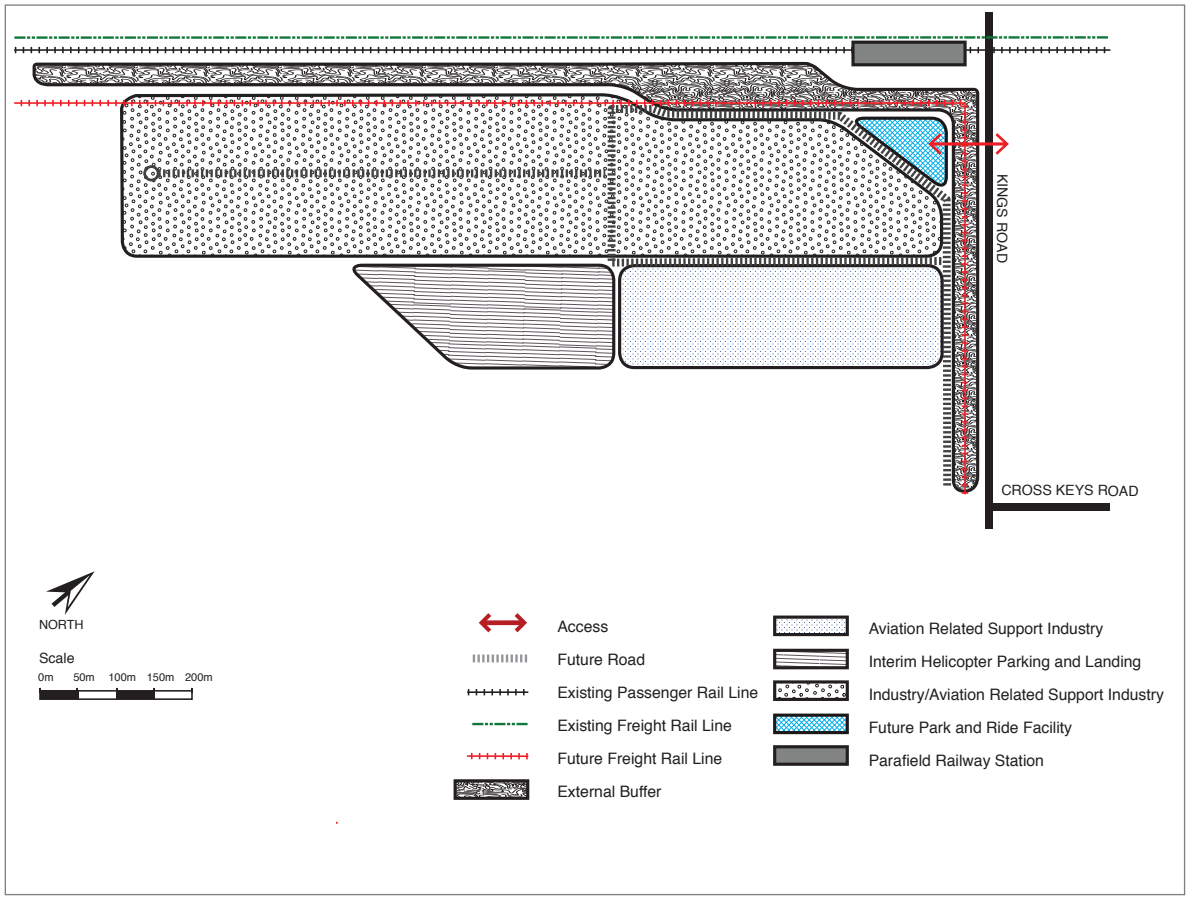



Figure 6.20 – Kings Precinct Structure Plan

# 6.15 SURROUNDING LAND USES

## 6.15.1 Land Use near the Airport

The Salisbury South Area, directly north of the airport, is zoned Industrial with a large 20 hectare sector currently designated as agricultural, in recognition of its restricted development prospect due to aircraft height restrictions. There are established Residential Zones further north in the suburbs of Brahma Lodge and Salisbury.

To the west and east of the airport, residential zoning predominates in the suburbs of Parafield Gardens and Salisbury Downs with commercial and industrial zoning on the eastern side adjacent to the Main North Road.

To the south, existing zoning is a special purpose area currently known as the Multi-Function Polis (MFP) Zone which in 2011 is the subject of a draft DPA by the City of Salisbury. This zone incorporates the University of South Australia (Mawson Lakes Campus), Technology Park (including Defence SA facilities) and Mawson Lakes Residential Development. The region is mixed use with commercial, industrial and residential zones, but with a predominance of residential development, and is consistent with the State Government Strategy of establishing Transit Orientated Development alongside railway corridors.

### Mawson Lakes DPA

The intent of the DPA is to update the planning policies within the Salisbury Development Plan, recognising the fact that the MFP (Levels) Zone was first established prior to the Mawson Lakes development commencing. The urban development project for Mawson Lakes is nearing completion, and the Council is therefore seeking to provide a more detailed planning policy framework to guide future development, and incorporate a number of the encumbrances placed on development into the Development Plan.

The Mawson Lakes Development Plan Amendment is scheduled to be considered by the City of Salisbury in January 2012 and will subsequently be referred to Government Agencies for their consideration. Adelaide Airport Ltd will be provided a copy of the DPA for review and comment at that time.

### Mawson Lakes Campus of the University of SA

A Master Plan was prepared for the Mawson Lakes Campus of the University of SA in 2003 – 'Mawson Lakes Campus Master Plan 2002-2010'. This was subsequently revised in June 2006 with the preparation of a detailed 'Landscape Master Plan'. Overall, both master plans provide a framework for consolidation and intensification of development within the Mawson Lakes Campus, providing stronger links to the Mawson Lakes Town Centre.

The location and height of University of SA buildings on the Mawson Lakes campus have been planned to reflect its proximity to Parafield Airport. The master plan indicates that prevailing height restrictions will remain in place – being primarily two and three storey buildings with flat roofs.

### Technology Park Master Plan

The SA Government is in the process of preparing a Master Plan to guide the long term future of development of Technology Park, integrating the development with the Mawson Lakes Town Centre and Mawson Lakes Campus of the University of SA. The Master Plan is expected to be finalised by mid-2012.

### Planning Commentary

Parafield Airport Ltd will continue to monitor off-airport development, including the preparation of planning policies and master plans affecting Mawson Lakes, the Mawson Lakes Campus of the University of SA and Technology Park. Specific issues for consideration relate to the location of sensitive land uses, along with height and scale of development which may impinge on airport activities.

All new purchasers of land or existing residences in the Mawson Lakes area adjacent the airport are forwarded formal written notice from the City of Salisbury (see Appendix F) advising that the "property is located adjacent to the Parafield Airport and is subject to frequent overflight and aircraft noise".

Land uses on-airport are generally remote from, and acoustically screened from, nearby residential developments.

## 6.15.2 Building Heights and Other Obstacles

Obstacles in the vicinity of an airport, whether they be natural or constructed may seriously limit the scope of its operations. Most people appreciate that tall structures and airports are basically incompatible, but they tend to think only of the immediate approach and take-off areas and of structures that are a short distance away. While this is of primary concern, it is equally true that objects up to 15 kilometres from the airport and apparently unrelated to the runway alignment can cause problems for pilots approaching or departing an airport, particularly in poor weather conditions or in instances of engine malfunctions.

There are a set of invisible surfaces used to define these airspace requirements and to assess the significance of an existing or proposed object to the Obstacle Limitation Surface (OLS) which are shown in Figure 6.21.

### Obstacle Limitation Surfaces

OLS are a number of reference surfaces in airspace which determine when an object may become an obstacle to aircraft manoeuvring in the vicinity of an airport during approach or departure or during circuit flying. They define protection requirements for the initial and final stages of a flight. During these manoeuvres visibility must be good enough for the pilot to see and maintain visual reference to the airport and take responsibility for obstacle avoidance and separation from other aircraft.

The objective of The OLS is to define a volume of airspace in proximity to an airport which should ideally be kept free of obstacles that may endanger aircraft in visual operations or during the visual stages of an instrument flight. Even so, the intention is not to restrict or prohibit all obstacles but to ensure that either existing or potential obstacles are examined for their impact on aircraft operations and that their presence is properly taken into account.

Since they are relevant only to visual operations it may be sufficient to ensure that the obstacle is conspicuous to pilots, and this may simply require that it be marked and/or lit with a beacon. Of course each new obstacle will in some way inhibit the freedom of aircraft operations and inevitably contribute to air traffic congestion and delays. If an obstacle is located in the approach and take-off areas, pilots will need to make adjustments to their normal take-off and landing to make sure of obstacle clearance. This may mean using less than the full runway length available which may result in significant operational penalties such as fewer passengers, or less cargo and fuel uplift than normal.

The most stringent requirements apply on the extended centre line of a runway in the approach and take-off areas. Depending on the type of aircraft able to use the runway, the approach and take-off surfaces may extend for as little as 2.5 kilometres or as much as 15 kilometres from the runway strip end. At either side of the runway strip and the approach surface are two OLS components called the transitional surfaces. These are intended to protect an aircraft which encounters severe cross winds during the final phase of the approach to land and may then drift sideways as the pilot decides to 'go around' for another attempt.

There are two, or in some cases three, other surfaces which provide obstacle protection for aircraft circling to land – the inner horizontal surface, the conical surface and/or the outer horizontal surface. Depending on aircraft size and the type of activities catered for by the airport, their combined effect may extend up to 15 kilometre radius of the airport.

### Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS)

Parafield Airport's OLS was declared as prescribed Airspace in January, 2009 by DoIT. Since that date PAL has prepared a PANS-OPS surface for the airport based on the Departure and Approach Procedures (DAP) Charts. These are procedures for instrument flight rules which depend on having ground based instrument landing and departing equipment at the airport, and while these are not in place at Parafield Airport, the PANS-OPS surface is included in the Master Plan (Figure 6.22). These surfaces are taken into account in the assessment of short-term OLS penetrations by mobile cranes to verify that the possible PANS-OPS is not infringed.

In contrast to the OLS which define when objects are to be considered as obstacles and assessed for their impact on aircraft operations, PANS-OPS surfaces cannot be infringed in any circumstances, although infringement not intended to continue for longer than three months may be approved under certain circumstances. In fact, the height of the tallest structure or natural feature underneath a PANS-OPS surface determines its altitude or elevation – it forms an envelope over the existing obstacle environment.

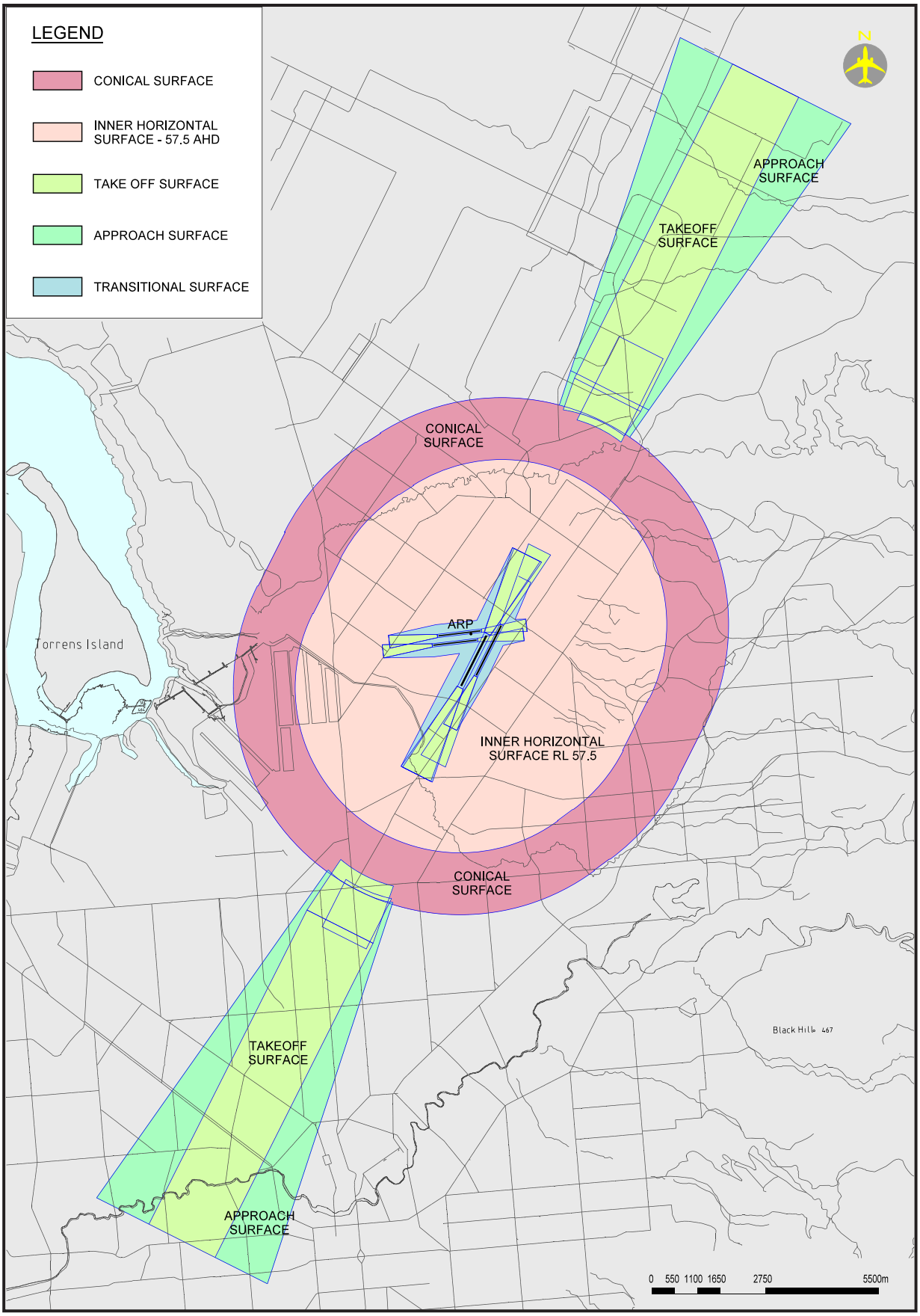



Figure 6.21 Obstacle Limitation Surfaces

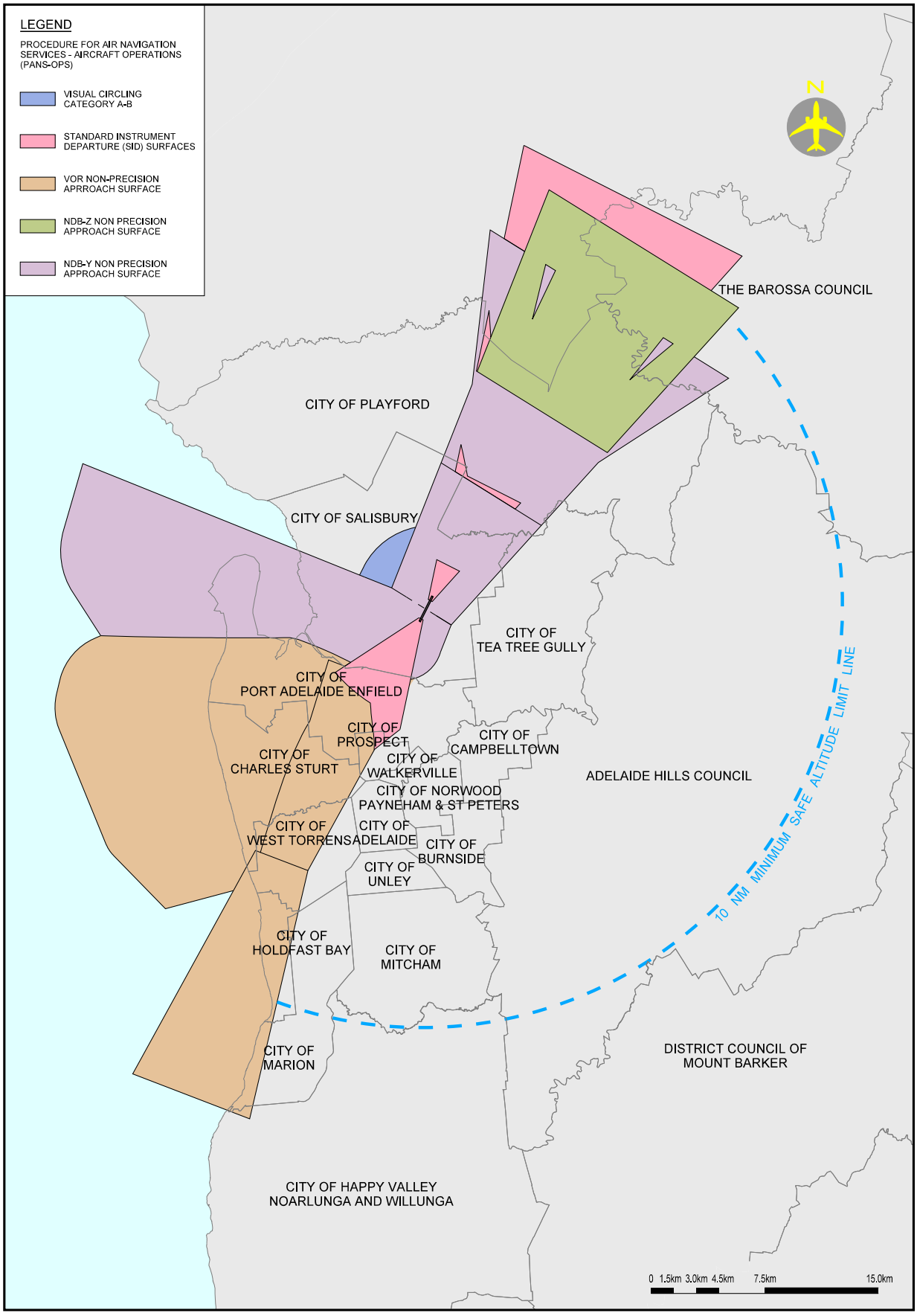



Figure 6.22 Procedures for Air Navigation Services Aircraft Operations (PANS-OPS)

This is because instrument procedure designers have to be able to guarantee that an aircraft will have a specified minimum clearance above any accountable obstacle in situations where the pilot is relying on the information derived from cockpit instruments and may have no external visual reference – to the ground, to obstacles or to other aircraft. The minimum obstacle clearance requirement is simply added to the height of the tallest object under the PANS-OPS surface to determine the minimum or lowest safe altitude to which a pilot may descend in attempting to establish visual reference to the airport. The landing cannot be made unless the pilot 'is visual' at or before reaching this minimum descent altitude. If the minimum for an instrument procedure has to be raised to account for new buildings or other structures there may be direct impact on airport useability. The higher this altitude needs to be the less likely it becomes that a pilot will be able to land during low visibility conditions.

## 6.15.3 Airspace Management

The Minister for Infrastructure and Transport can protect the airspace surrounding an airport in accordance with the directions provided in the *Airports Act 1996* and *Airports (Protection of Airspace) Regulations 1996.*

It is the understanding of PAL, that the airport operator can make an application to DoIT for the Minister to protect future airport operations by managing the airspace around the airport.

### Control

Airservices Australia is responsible for the airspace surrounding Parafield Airport. Within this airspace it provides aerodrome and approach control services to arriving and departing aircraft, as well as ground control for taxiways and runways. Airservices Australia also provides services to aircraft transiting the designated control zone in which Parafield Airport is situated.

These operations are conducted in accordance with published procedures, requirements and air traffic control clearances and instructions.

When the Air Traffic Control Tower is not in operation, Parafield operates under Common Traffic Advisory Frequency (CTAF) where pilots are required to communicate by radio on a broadcast frequency.

### Monitoring

PAL conducts regular consultative meetings with the airline industry and Airservices Australia to maximise the use of these facilities and minimise arrival and departure and circuit impacts on the community.

## 6.15.4 Hazardous Lighting

Local authorities' planning schemes should recognise the potential hazard of inappropriate lighting by specifying appropriate performance standards for lighting installations in proximity to airports.

Developers/designers of lighting within a 6 km radius of Parafield Airport are required to comply with lighting guidelines to ensure ground lighting does not interfere with pilot vision on landing approach. Advice is available in guidelines issued by CASA entitled *Lighting in the Vicinity of Aerodromes- Advice to Designers* which can be made available on request. The CASA Guidelines also apply to on-airport developments including aeronautical infrastructure and facilities.

State and Local Government, developers and any stakeholders can obtain relevant maps and information about restrictions on lighting around Parafield Airport by contacting the airport management during business hours.

### Hazardous Lighting

To assist lighting designers for both on and off airport development the prescribed zones identified in the Civil Aviation Authority, Manual of Standards Part 139 – Aerodromes, Chapter 9, Section 9.21 will be supplied upon request.

## 6.15.5 National Airports Safeguarding Frameworks

The wider airport safeguarding objectives of the Australian Government were expressed in its National Aviation Policy White Paper of December 2009 and its formation of the National Airports Safeguarding Advisory Group (NASAG) in May 2010 to progress those objectives.

NASAG has produced a National Airports Safeguarding Framework that includes a statement of over-arching principles and a suite of six guidelines for land use planning measures to manage the impact of noise disturbance from airports and to ensure the ongoing safety of the community and aircraft by ensuring that aviation safety requirements are recognised in land use

planning decisions. These principles and guidelines were formally agreed by all jurisdictions on 18 May 2012 with the intention of their subsequent endorsement by COAG.

NASAG has yet to address the issues of the possible need for Public Safety Zones and the protection of communications, navigation and surveillance infrastructure, which are to be considered at a later stage.

The NASAG Guidelines when finalised are aimed at safeguarding airports and surrounding communities through implementing appropriate planning schemes around airports.

### 6.15.6 Navigational Aids and Aircraft Operations

PAL in consultation with the relevant authorities including CASA and Airservices Australia is cognisant of the need to ensure that any development on the airport must be carried out and constructed in a manner that does not compromise the efficiency of navigational aids or the operational capability of aircraft using the airport.

In that regard, all developments will be required to give due and proper consideration where applicable to the following issues:

- Navigational Aid infrastructure safety zones and signal direction;
- minimising sun glare from reflective surfaces;
- wind turbulence and windshear impacts during construction and of the finished facility;
- height limitations in respect of OLS and PANS-OPS;
- height limitations including dishes and aerials in regard to ATC line of sight;
- thermal plumes or misting from roof vents; and
- lighting that may illuminate above the horizontal.

### 6.15.7 Wildlife

Parafield Airport is surrounded by light industrial and residential developments. Approximately 3 kilometres to the south-west is the Dry Creek Wetlands. In addition, significant man-made lakes exist in the recently constructed Mawson Lakes Development.

The wetlands provide a habitat for a number of bird species that to date has not been a significant problem for aircraft operations, however close monitoring of this activity is warranted to minimise the potential of aircraft bird strike. The Mawson Lakes developers recognised that large tracts of water will attract birds and undertook to construct lakes in the area in such a manner so as to minimise the potential for the attraction of birds.
Land use, development, the design of facilities and landscaping whether on-airport or in the immediate environs should not compound the potentially serious risk associated with bird attraction and bird strike, with suitable measures warranted for any activities including rubbish or food waste that could potentially attract birds.

Selection of plant species for on airport developments is subject to assessment against the PAL Landscaping Guidelines which stipulate the requirement to minimise bird attraction through responsible landscape design. These guidelines are also provided to local government to inform off-airport landscaping activities in close proximity to the boundary.

There is currently no regulatory or planning obligation on the part of local government, developers or service authorities to consult with PAL in relation to off-airport proposals which may attract birds to the airport surrounds such as wetlands, waste handling facilities and landscaping. A voluntary collaborative approach is however fostered between PAL and local government with acceptance by the City of Salisbury of a 3 kilometre Wildlife Risk Management Zone around Parafield Airport as a tool to guide and inform future planning and operational activities.

There have been ongoing difficulties associated with the keeping of domestic pigeons and/or rock doves when local residents train their flocks at times that correspond with higher aviation activity. PAL will continue to liaise with the South Australian Homing Pigeon Association and local government to educate pigeon owners on responsible training methods in the vicinity of Parafield Airport.

A comprehensive Wildlife Hazard Management Plan, regulated by CASA, is incorporated in the Airport Manual.

## 6.16 EXTERNAL SERVICES

The major utilities, including ETSA Utilities, Envestra (gas), Telstra and SA Water have services located in close proximity to the airport. These utilities are able to service the current and future developments described in this MP and past and approved Minor Variations to the Master Plan (2004) and Major Development Plans.

Engineering services infrastructure will require new connections, extensions and/or realignment as each precinct is developed.

### 6.16.1 Electricity

Electricity within the Centre Precinct is obtained at High Voltage from ETSA Utilities along Kings Road, and distributed internally by a network managed by PAL. In the Commercial Estate, ETSA Utilities provides power direct to the individual business and allotments through Horrie Miller Avenue and Laurence Hargrave Way.

ETSA Utilities has indicated it can service proposed developments along Main North Road and Kings Road from its existing high voltage electricity network, and will be able to supply power into the Cross Keys Precinct along the Elder Smith Road from Cavan, and to the Commercial Estate from Cavan and Salisbury. An electricity substation could be developed on airport land if required. Augmentation and additional feeders by ETSA Utilities may be required depending upon the final strategy against detailed development design.

### 6.16.2 Potable Water

Existing potable water supply to Central Precinct is obtained from Kings Road mains, and then distributed internally under PAL Services. Through directly managed pipelines in the Commercial Estate, SA Water distributes the water direct to individual business allotments.

SA Water has indicated there is a sufficient network of water mains to service developments along Main North Road and Kings Road, and from existing easements located within Parafield Airport itself.

### 6.16.3 Sewerage

Existing sewerage services in the Central Precinct are connected to the SA Water system, and are maintained by PAL. In the Commercial Estate, SA Water arranges the direct sewerage service to individual business allotments.

SA Water has a main sewer line running along both Kings Road and Main North Road and along the Cross Keys Road alignment under an easement on airport land. It will be necessary to pump sewerage from some developments to the SA Water sewer mains.

### 6.16.4 Telecommunications

There are sufficient telecommunication services surrounding the airport to meet the expanding need of all master plan developments, and a fibre optic cable runs along the former Cross Keys Road alignment within the Airport confines.

### 6.16.5 Gas

Envestra has high pressure gas mains at Kings Road/Cross Keys Road and at the intersection of Kings Road/Main North Road. Envestra has indicated it would provide a gas supply to any development on the airport if anticipated demand makes it economically viable.

### 6.16.6 Stormwater Drainage and Flow Paths

The stormwater drainage channels on and surrounding Parafield Airport are shown at Figure 6.23. Throughout the airport movement area, a number of open, unlined drains have been constructed to take water run-off to the Salisbury Council drainage system both abutting the airport or within prescribed Council drainage easements.

An easement has been created over airport land in respect of a diversion drain parallel to Main North Road along the eastern side of the airport for the City of Salisbury. The first section of the drain is through the Commercial Estate Precinct where it is piped underground. Thereafter, the drain connects into an open unlined drain across the airport site and flows into a drain under the Salisbury Council's responsibility alongside the Bennett Road alignment

Any new developments within all precincts will be designed to comply with various elemental capacity issues and requirements and in particular low level bunds and associated drainage channels will surround the Cross Keys Precinct, as detailed in the Cross Keys Major Development Plan (2004).

The City of Salisbury has planned that excess stormwater events along Main North Road will be directed through a number of passages on airport land to flow into the Council drainage easement through established drainage systems and along roadways. It will then flow into the Bennett Road drain leading to Dry Creek in Mawson Lakes. The Commercial Estate Precinct drains into this eastern-most Council drainage easement from a number of points and the construction of a new roadway

entrance road at Kesters Road will complement this City of Salisbury Flood Mitigation Strategy, by acting as an emergency water flow path linking to this easement. This is consistent with PAL policy that airport land, including internal drains should not be used as flood water storage or flow paths for off-airport stormwater except in the case of existing easements or the identified flow paths shown at Figure 6.23.

The overall management of stormwater is critical to the efficient use of airport land and controlling the potential bird hazard to aircraft operations in the vicinity, with this closely monitored by both Council for its drainage channels and PAL for its internal system of open drains.

### 6.16.7 Stormwater Harvesting and Recycled Water

Arrangements are possible under partnership with the City of Salisbury for future airport developments to use recycled water from the aquifer recharge system located at Parafield depending upon actual location. Figure 6.24 shows a plan outlining the supply points, along with the locality of the netted Stormwater Harvesting Facility, which has been leased to the City of Salisbury by PAL for the purpose of collecting and cleansing stormwater before injecting the water into underground aquifers, and then reticulating the water for irrigation and use by local business in the region.

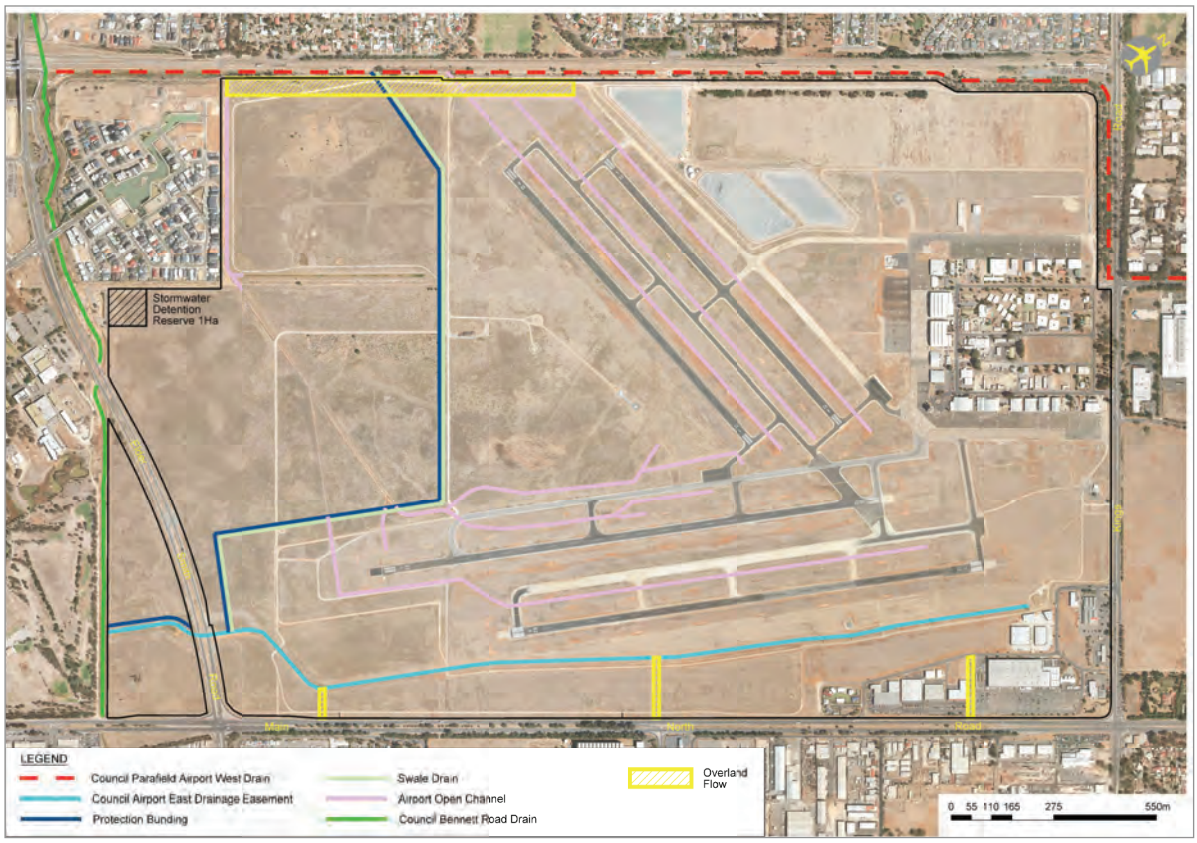



Figure 6.23 Stormwater Drainage and Flow Paths

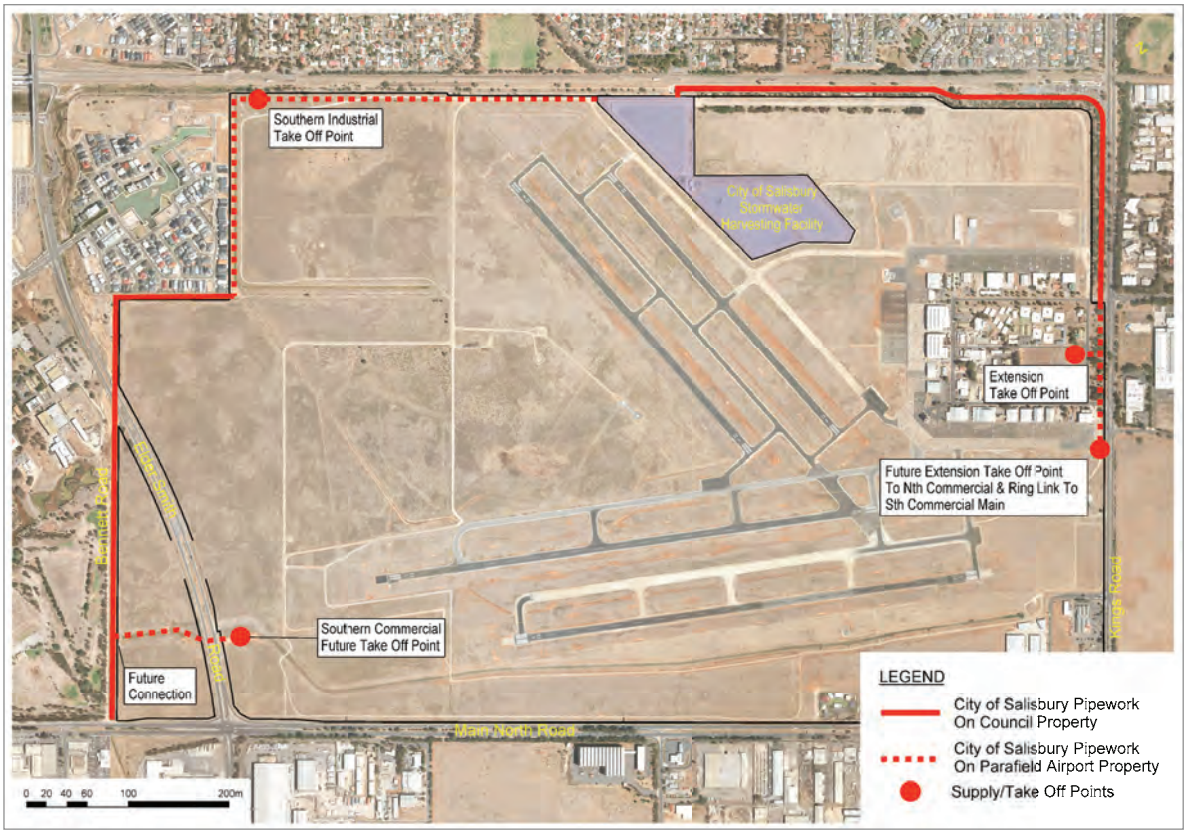



Figure 6.24 Recycled Water Supply Points

# 7 DEVELOPMENT DETAIL

## 7.1 INTRODUCTION

As one of the largest private commercial land holders within the Adelaide metropolitan area, PAL is required to take advantage of the opportunity to add value to the traditional business activity by maximising the property development opportunities of airport land not required for aeronautical purposes in the short to medium term.

Such development will complement and enhance future airport operations, support the delivery of the wide range of services and facilities demanded by airport users, improve accessibility to the airport, create employment, and contribute to the Gross State Product.

This section is consistent with sub-sections 71 (2) (gb) and 71 (2) (gc) of the *Airports Act 1996* relative to the inclusion of the proposed airport developments within the first five years of the Master Plan, including detail on the scale, the effect on employment levels at the airport, the impact on the local and regional economy and possible community impacts.

Within this section of the MP, commentary is not only limited to those developments not directly related to airport services, but is also provided for those with aviation connotations, given the possible inter-relationship of these with one another in several precincts at the airport, and particularly toward supporting activities such as community initiatives.

In addition, this section discusses the environmental aspects of the possible developments consistent with the Airport Principles of Development Control included in Chapter 6, and also Volume 3, the Sustainability Plan, and as specified under sub section 71(2) (g) of the *Airports Act 1996*. Additionally, traffic management issues that are more specifically detailed in the Ground Transport Plan (Volume 2) are outlined.

In keeping with the 20-year planning horizon of the Master Plan, an indication is given of possible projections of development after the fifth year, with these projections to progressively be updated for each succeeding 5-yearly Master Plan.

The development projections over a 5 year horizon, or the extended period of 20 years, do not constitute any firm commitment toward development on-airport. Economic fluctuations and uncertainties in the aviation and property market prevent a regimented approach to airport development on a specific fixed schedule.

However, when the Structure Plans and the inherent development themes in Chapter 6 for each precinct are considered, a level of planning direction is able to be forecast for community and stakeholder clarity.

## 7.2 POTENTIAL FUTURE KEY DEVELOPMENTS – PLANNING HORIZON – 0 TO 5 YEARS

Within this 5 year planning horizon, it has been estimated that the total direct and indirect increases to Gross State Product associated with PAL's future developments will be in the range of $46.4 million to $61.6 million. Given the following projected range of possible developments, both the direct and indirect increases to employment have been estimated to be between 483 and 640 full time equivalent employees. For comparison purposes, Table 7.1 and 7.2 provide a base case break up of these figures from 2012 to 2017 and from 2012 to 2032 into the PAL's land use precincts.

Table 7.3 outlines the various possible Future Developments in the next 5 years, along with the possible scale of development, a possible range of increased employment levels, and if relevant, potential customer extent. The likely trigger for development is also included, in recognition of need for any development to be based not only upon airport requirements, but business viability and economic constraints.

In recognition of the Planning Processes and Procedural Matters included in Chapter 6, it is notable that further developments could ensue in

Table 7.1 Possible Future Developments and their Expected Impacts on Employment

| Location | Employment (No. of Jobs) | | | | |
|---|---|---|---|---|---|
| | 2012 | 2017 | Change | 2032 | Change |
| Direct (On-precinct) | | | | | |
| Central/Kings | 216 | 288 | 72 | 350 | 134 |
| Commercial/Levels | 652 | 738 | 86 | 775 | 123 |
| Cross Keys | 0 | 50 | 50 | 200 | 200 |
| Direct Totals | 868 | 1076 | 208 | 1325 | 475 |
| Induced (Off-precinct) | 1150 | 1425 | 275 | 1755 | 605 |
| TOTAL | 2018 | 2501 | 483 | 3080 | 1062 |
| Employment Proportion of State (%) | 0.24 | 0.31 | | 0.38 | |

Table 7.2 Possible Future Developments and their Expected Impacts on Gross State Product

| Location | GSP ($million) | | | | |
|---|---|---|---|---|---|
| | 2012 | 2017 | Change | 2032 | Change |
| Direct (On-precinct) | | | | | |
| Central/Kings | 35.4 | 45.0 | 10.0 | 52.2 | 16.8 |
| Commercial/Levels | 55.7 | 62.6 | 6.9 | 65.8 | 10.1 |
| Cross Keys | 0 | 5.2 | 5.2 | 21.0 | 21.0 |
| Direct Totals | 91.1 | 112.8 | 21.7 | 139 | 47.9 |
| Induced (Off-precinct) | 103.2 | 127.9 | 24.7 | 157.6 | 54.4 |
| TOTAL | 194.3 | 240.7 | 46.4 | 296.6 | 102.3 |
| Proportion of GSP (%) | 0.23 | 0.30 | | 0.37 | |

each Precinct, but in this event it will be consistent with the prescribed Structure Plans (also in Chapter 6), and the specified Development Decision Matrix (Figure 6.4).

## 7.3 POSSIBLE FUTURE AIRPORT DEVELOPMENT – PLANNING HORIZON – UP TO 20 YEARS

Outlined in Table 7.4 is a schedule of possible Parafield Airport developments that could occur within the Master Plan period up to 20 years. It is possible that, given demand and economic circumstances, some of these could be advanced within 5 years or extended past the Master Plan time duration.

## 7.4 SCOPE OF THE DEVELOPMENT ASSESSMENT

The development options envisaged for each of the Parafield Airport Precincts, encompassing the Objectives, Desired Character, and Principles of Development Control for the Airport Zone overall and individually for each precinct consistent with the respective Precinct Structure Plans, are detailed in Chapter 6.

While Table 7.3 summarises the proposed or possible developments in the next 5 years, the following discussion in Section 7.5-7.11 describes the existing development at each precinct, the situations relevant to State/Local Planning and surrounding development, plus economic factors. An assessment is also expressed in relation to any environmental considerations such as noise, land and heritage management (including remnant vegetation and fauna), possible soil and groundwater contamination, stormwater quality and local air quality. A broader description of the existing environment at Parafield and environmentally significant areas is included in Volume 3, Sustainability Plan.

Where relevant, some reference is included on traffic accessibility, with this more comprehensively covered in the Volume 2, Ground Transport Plan.

## Table 7.3 Potential Future Key Developments at Parafield Airport (0-5yrs).

| Precinct | Development | Scale ($m^2$) | Additional Employees/ Customers | Trigger/Comment |
|---|---|---|---|---|
| Runways | Airport Services:<br>· Upgrade and possible extension of 03L/21R and associated aircraft movement areas together with apron expansions<br>· Development of helicopter operational/maintenance/ training zone | 20,000-33,000<br><br>55,000-88,000 | | Aviation need.<br><br>Prior or simultaneous industrial development essential in Cross Keys Precinct to enable access viability. |
| | Non- Airport Services:<br>· None expected | | | |
| Central | Airport Services:<br>· Development of Fixed Base Operations<br>· Aviation Attractions | 2,500-5,000<br>3,500-4,500 | 63-69 employees<br>3,600-5,500 customers per annum | Aviation need<br>Commonwealth/ State Government Sponsorship |
| | Non- Airport Services:<br>· Ancillary Services for Aviation Trainees e.g. (Retail, Recreation) | | Minimal | Airport Demand, and likely to entail re-use of upgraded existing facilities. |
| Commercial | Airport Services:<br>· None expected | | | |
| | Non- Airport Services:<br>· Showrooms/Bulky Goods/Retail<br>· Brand Outlet Centre | 10,000-25,000<br>20,000 | 1 to 1.5 million customers per annum<br>46 employees | Prescribed Bulky Goods Centre in State 30 year plan for Metropolitan Adelaide Market Demand/ Economic Viability Driven |
| Levels | Airport Services:<br>· None expected | | | Physically segmented by easement from Runways Precinct |
| | Non- Airport Services:<br>· Motel<br>· Home Display Centre<br>· Motor Vehicle Auction/Sales | 50 to 75 rooms<br>10 to 20 displays<br>1Ha to 2Ha | 15,000-20,000 customers per annum<br>40 employees | Hospitality Demand<br>Relocation existing Home Display activity from Commercial Precinct<br>Market Demand |
| Bennett | Airport Services:<br>· None expected | | | Segmented from Runways by Elder Smith Road |
| | Non- Airport Services:<br>· Upgrade of vernal pools/wetlands<br>· Provision of Public Access to Vernal Pools, interpretative<br>· facilities and associated shop<br>· Advertising signage | | Small number of Educational and Environmental visitors | Possible City of Salisbury care and control.<br><br>New/Relocated signage |
| Cross Keys | Airport Services:<br>· Road Access to Future Helicopter operational zone within Runways Precinct | | | Road access between Elder Smith Road & Future Helicopter developments may be dependent upon prior or simultaneous industrial development. |
| | Non- Airport Services:<br>· Combined infrastructure development for ground access with aviation access<br>· Freight Distribution Centre<br>· Office/Warehousing & Industrial | 40,000-100,000 | 50-100 employees | Market demand and Prescribed Industrial and Employment Zone in State 30 Year Plan for Metropolitan Adelaide |
| Kings | Airport Services:<br>· Fixed Base Operation/ Hangar Development | 2,500-5,000 | 20 employees | Market Demand and Prescribed Aviation Need |
| | Non- Airport Services:<br>· Park & Ride to service Parafield Railway Station | 3,500-5,000 | Car space quantity subject to nomination by the State Government | State Government Initiative |

Table 7.4 Potential Future Key Developments at Parafield Airport (5-20yrs).

| Precinct | Development | Trigger/Comment |
|---|---|---|
| Runways | Airport Services:<br>· ongoing development of helicopter zone including new helipad & expansion of apron areas and Aircraft Parking<br>· Railway Spur and alternate freight transport | Aviation need<br><br>Industrial growth |
| | Non- Airport Services:<br>· None expected | |
| Central | Airport Services:<br>· New Hangar Development<br>· Expansion of aviation training facilities | Aviation need |
| | Non- Airport Services:<br>· None Expected | |
| Commercial | Airport Services:<br>· None expected | |
| | Non- Airport Services:<br>· Showrooms/Bulky Goods/Retail<br>· Office/Warehousing/Industry | Market Demand |
| Levels | Airport Services:<br>· None expected | |
| | Non- Airport Services:<br>· Service Trade Premises | Market Demand |
| Bennett | Airport Services:<br>· None expected | |
| | Non- Airport Services:<br>· Continuing rehabilitation of Vernal Pools<br>· Possible recreation (Golf) | State/Local Government/PAL<br>Subject to MDP |
| Cross Keys | Airport Services:<br>· Aviation Related Support Industry | Aviation need |
| | Non- Airport Services:<br>· Ongoing development of Industrial Enterprise Park | Market demand |
| Kings | Airport Services:<br>· Expansion of Aviation Related Support Industries | Aviation need |
| | Non- Airport Services:<br>· Industrial Development | Market demand |

# 7.5 RUNWAYS PRECINCT

## 7.5.1 Development Extent – Existing

The aircraft movement area consists of four runways arranged in parallel pairs in two directions (refer Figure 7.1).

The main runway directions consist of:

- Runway 03R/21L, which is 1279 m long and 30 m wide with the central 18 m sealed with an aggregate and bitumen spray seal. This runway is able to accommodate Code 3C aircraft subject to certain pavement and weather restrictions and runway length requirements of particular aircraft. The graded runway strip width is 90 m.
- Runway 03L/21R, which is 1350 m long and 18 m wide, sealed with an aggregate and bitumen spray seal, and with a runway strip width of 90 m. The runway is equipped with low intensity runway lighting.

The secondary direction consists of:

- Runway 08L/26R, which is 958 m long and 18 m wide, sealed with an aggregate and bitumen spray seal, and with a runway strip width of 90 m.
- Runway 08R/26L, which is 992 m long and 18 m wide, sealed with an aggregate and bitumen spray seal, and with a runway strip width of 90 m.

The existing facilities are suitable for Code 1 aircraft operating with a maximum take-off weight of up to 5700 kg. Subject to Regulation CAR 235A aircraft operations of up to Code 3 are permitted.

The codes for each runway are:

- Runway 03R/21L - Code 3 (already referred to as useable by 3C aircraft);
- Runway 03L/21R - Code 3; and
- Runway 08L/26R and 08R/26L - Code 2.

The aircraft pavements are generally unrated and nominally able to accommodate aircraft maximum

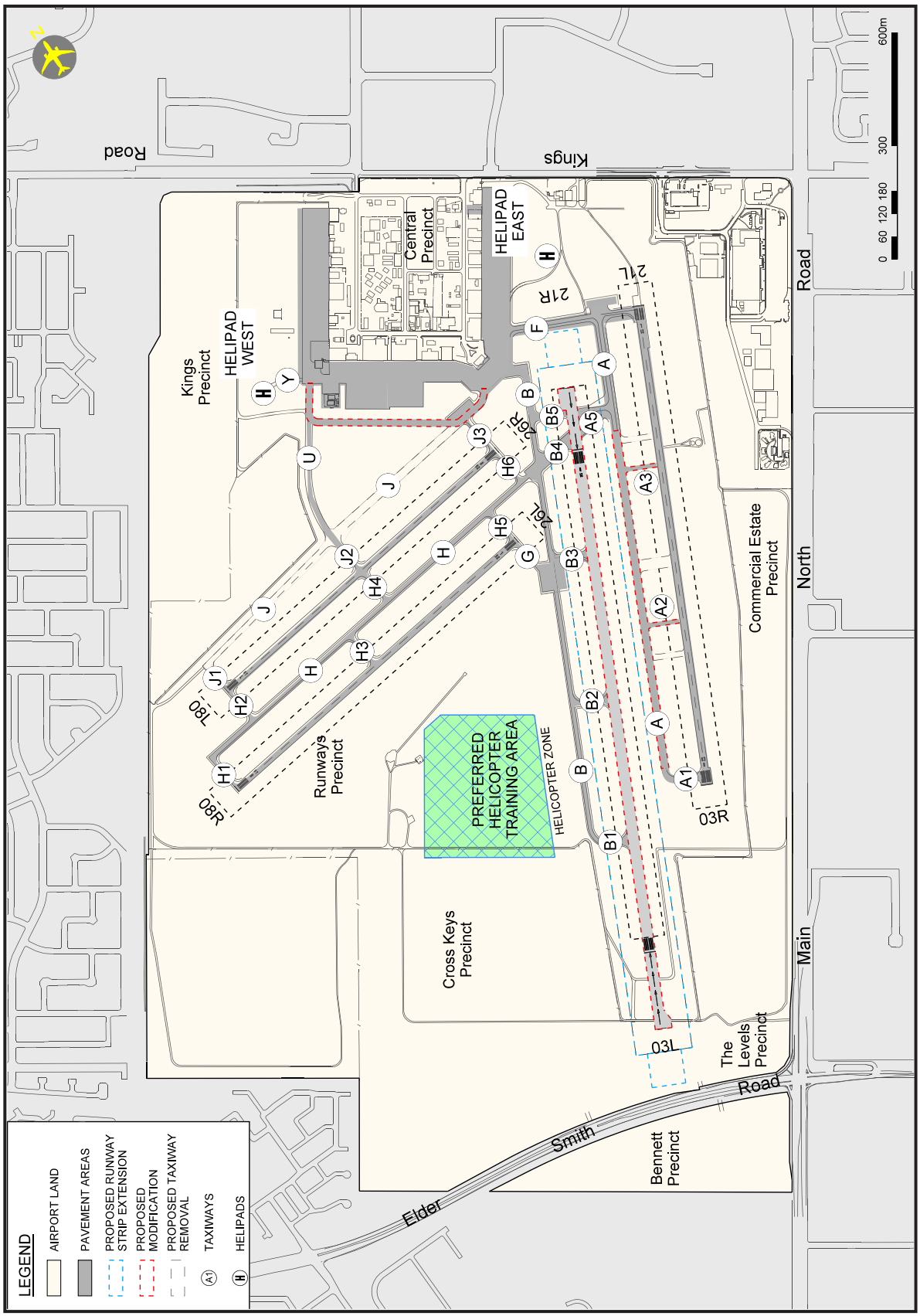



Figure 7.1 Runways Development Plan

Table 7.5 Recommended Movement Area Design Standards

| Item | Runway 03L/21R | Runway 03L/21R | Runway 08L/26R | Runway 08R/26L |
|---|---|---|---|---|
| Runway Width (m) | 30 | 18 | 18 | 18 |
| Taxiway Width (m) | 15 | 10.5 | 10.5 | 10.5 |
| Runway Strip Width (m) | 150 | 90 | 80 | 80 |
| Runway Length | Max. Code 3C (1,715 m) | Existing | Existing | Existing |
| Approach Gradient (inner section) (%) | 2 | 4 | 4 | 4 |
| Take-off Gradient (%) | 2 | 4 | 4 | 4 |

take-off masses up to 5700 kg. Heavier aircraft may utilise them subject to an approved pavement concession. Runway 03L/21R carries a PCN rating of 6, and Taxiway Bravo has been rated to 9000 kg.

Annual aircraft movement forecasts (Chapter 5) identify that the annual practical ultimate capacity of 450,000 movements is unlikely to be realised within the planning horizon of this Master Plan. Therefore the current runway and taxiway infrastructure system is more than adequate for the current aircraft traffic.

Future demand that could require Code 3C aircraft to be accommodated would require the existing main runway 03L/21R to be extended and widened within existing operational constraints to provide a possible runway length with a maximum take off run of 1550 m. Displaced landing thresholds at each end would provide a maximum landing distance of 1550 m. Overall runway length including the displaced thresholds is 1715 m. The proposed runway extensions are shown in blue in Figure 7.1.

The existing Runways 08L/26R and 08R/26L, configuration is to remain to accommodate suitable aircraft as per Reg 235A.

Design standards for the runways and associated taxiways are provided in Table 7.5.

## Taxiways

Taxiways are provided for the safe and expeditious movement of aircraft between aprons, holding bays and runways.

CASA required parallel runways to be separated by a minimum of 213 m for General Aviation Aerodrome Procedures (GAAP) to permit simultaneous aircraft circuits. GAAP has now been replaced with the introduction of Class D Airspace in 2010 which still allows for simultaneous operations.

The taxiways are identified by an alphabetical reference, for example taxiway Alpha (A) with alpha-numeric references for related sections/ taxiways.

The existing taxiway system provides sufficient runway and apron access for arriving and departing aircraft to handle the forecast volumes of air traffic.

Both parallel runway systems 03/21 and 08/26 configurations are provided with a network of parallel and short stub taxiways (Figure 7.1). The proposed extension and widening of runway 03L/21R to cater for Code 3C aircraft operations may require the extension of Taxiway Bravo to provide a full-length parallel taxiway and possible widening of some existing stub taxiways.

An economical second option to cater for Code 3C aircraft operations would be to only widen taxiway B5 to Code C width and incorporate construction of a turning node at the 03L runway end. This would negate the requirement to upgrade the entire length of taxiway B and limit widening works to taxiway B5 with aircraft able to back track down the runway. Runway lighting may also require upgrading with the adjustment of light spacings.

## Aprons

Apron parking areas are provided for the safe parking of aircraft, transfer of passengers and freight, and to enable the servicing and maintenance of aircraft. There are sealed and concrete aprons along the front of existing hangars providing apron parking for approximately 130 aircraft up to Code B size.

Designated grassed aircraft parking areas are also available and could be readily extended to provide parking for additional aircraft.

Although hardstand parking is currently close to full utilisation, there are adequate unsealed aircraft parking areas available to cater for many more than the current 170 locally-based aircraft. Total current parking capacity is estimated at 130 spaces on hardstand, plus around 100 spaces on prepared grassed areas. More parking on unsealed areas could readily be provided if required.

Cable tie-downs are provided on some of the grassed areas. Operators need to provide their own tie-downs on the remaining unsealed areas. Two large parking bays for itinerant aircraft are provided on the sealed apron at the base of the control tower.

Based on the current number of approximately 170 locally based aircraft and the forecast activity levels, increased demand for aircraft parking is anticipated to be greater over the next 2 to 3 years, but grow more gradually over the entire planning period. With a current surplus of parking spaces, and the capacity to provide more if required, capacity currently outstrips demand.

Any requirement for additional sealed apron parking will be most likely caused by increases in aircraft numbers and traffic from the flying schools.

Development of sealed constructed aprons will be required as and when hangar developments occur. This is particularly relevant to the Western apron and the proposed development within the Kings Precinct.

Although the operation of Code C aircraft is not foreseen in the short term, the allowance to expand the runway and taxiway network to accommodate such aircraft is based on the potential future operation of Q400 and ATR-72 aircraft, with the most likely use being for charter operations. It is also noted that any new or possible change to aircraft arrival or departure procedures will require the assessment and endorsement of Airservices Australia.

## 7.5.2 Development Extent – Projected

The proposed changes to the Runways Precinct are shown on Figure 7.1.

The general strategy for this precinct is to safely and efficiently accommodate both existing and forecasted aircraft traffic.

Two sets of parallel runways and required taxiways will be maintained to facilitate safe and efficient fixed wing training operations. Allowance is made for future compliant operation of Code C aircraft utilizing Runway 03L-21R. A new helicopter landing site has been nominated located centrally within the airport adjacent to the southern boundary of the Runways Precinct to support safe rotary operations clear of other obstacles and neighbouring residents.

The following developments are proposed within the next five years:

- Reconstruction and sealing of Taxiway A in order to improve safety and efficiency. The development is to be designed for Code B aircraft and involves replacement of three unsealed stub taxiways with two sealed stub taxiways onto Runway 03R-21L.
- Construction of a new helicopter landing site at the southern boundary of the airport. The proposed location will move helicopter operations further away from residential areas to reduce noise impacts. It will ultimately reduce the interaction of fixed wing and rotary aircraft creating a safer operating environment. Lighting for the new helicopter landing site is proposed to permit safe night time operation.
- Taxiway J is a relatively low use unsealed taxiway that is prone to water inundation during wet weather. Consideration will be made for its removal following an assessment of its operational significance.

The following developments are proposed beyond the next five years:

- Upgrade of Runway 03L-21R for Code C operations. Extension of both ends of the runway will allow up to 1610 m of take off distance and 1550 m of landing distance utilising displaced thresholds at both ends. The runway seal would be widened to 30 m and turning nodes constructed to facilitate use of the full runway length. Required landing and takeoff gradients shall be protected against intrusive development. Compliant movement to and from the runway would initially be accommodated by widening Taxiway B from Taxiway B5 through to the Eastern Apron. The remainder of Taxiway B will also be widened if Code C traffic justifies the requirement.
- Construction of a new Code C taxiway parallel with the Southern Apron will permit compliant and efficient taxiing of aircraft parked on the Western Apron.

### 7.5.3 Environmental Considerations 0-5 Years

A small area at the southern end of the Runways Precinct holds a Vernal Pool, which has been identified as degraded, having a low biodiversity value, and has also been assessed as being not well suited for remediation. Additionally, given its location and the potential future runway extension, it has been evaluated as suitable as a control pool, which can be used for benchmarking the remediation success of Cross Keys Conservation Zone, and thus is well suited for monitoring purposes for a 5 year period; pending possible runway expansion. Additionally, and while this pool is not located within any environmental zone, its secure airside location and ongoing protection and monitoring ensures adequate safeguarding until the runway extension is required. In the event of the Runway extension, several hollows exist in the Conservation Zone in the Bennett Precinct that offer scope toward remediation efforts to create alternative Vernal Pools, as identified in Figure 6.3.

## 7.6 CENTRAL PRECINCT

### 7.6.1 Development Extent – Existing

Existing development consist of hangars, aviation-related buildings, offices, and flight training classrooms and accommodation. Total existing built form development with direct airside access consists of approximately 26,800 $m^2$ and total built form development without direct airside access is approximately 18,000 $m^2$.

The existing airport aged assets and infrastructure are undergoing progressive improvement against standard market returns, including structured repairs to hangars from termite infestation, asbestos removal, electrical enhancements to match relevant standards and the retrofitting of aviation training accommodation and hangar space. Condition audits have also been conducted to determine the optimum future strategy for ongoing occupancy, modifications or building removal and replacement as appropriate.

### 7.6.2 Development Extent – Projected

During the first 5 years of the Master Plan, future development could include expansion of aviation-related buildings, offices and flight training classrooms and accommodation facilities together with the establishment of student support service facilities; plus public aviation attractions and business related Fixed Base Operations using either turbo-prop or small jet aircraft. As part of these overall developments, there is envisaged further offices, either stand alone, or within existing refurbished aviation related facilities such as hangars or aviation training facilities.

A possible option for relocation of the Vickers Vimy Aircraft from Adelaide Airport as part of expanded Aviation Attractions and aircraft museums and ancillary services (e.g. shops, restaurants, clubrooms and other amenities) is envisaged. These community activities are represented in the Central Precinct Structure Plan (Figure 6.10).

Further expansion of airport services such as Fixed Base Operations, support car parking, further flight training facilities (including student and teacher accommodation) and the general enhancement of the precinct is expected. The latter is likely to entail enhancement and upgrading of existing building structures together with the possible removal of older hangars and out buildings in poor condition or which otherwise no longer meet the standards (both industry and legislative) consistent with modern commercial aviation operations. This will cater for new hangars and general aviation engineering services.

### 7.6.3 Scale of Development 0-5 Years

It is envisaged that between 6,000 $m^2$ and 9,500 $m^2$ of new built form space could be developed over the next 5 years. The need for these developments will be principally based on future airport aviation growth, aviation-related support industry demands and Commonwealth/State Government sponsorship provisioning.

### 7.6.4 Employment Aspects 0-5 Years

Given the above scale and nature of these developments it is anticipated that there will be an increase in the number of aviation and non-aviation related employees of between 63 to 69 full time equivalent employees and a projected increase of between 3,600 to 5,500 customers per annum for aviation attractions, (such as an aviation museum, also including the Vickers Vimy Aircraft relocated from Adelaide Airport).

### 7.6.5 Economic Analysis 0-5 Years

Given the above scale and nature of these developments, the direct contribution to Gross State Product of aviation related industry has been forecast to be in the range of $7.5 million to $11.3 million.

### 7.6.6 Environmental Considerations 0-5 Years

There is the potential for varied waste streams which could be generated from expanded developments. PAL will require waste management plans and mitigation actions from any tenants with a risk of increasing pollution levels and attracting birds.

Equally, stormwater runoff could marginally increase proportionate with increases in the paved surface area but noting much of the Central Precinct is currently defined by roadways and stormwater drainage. Proposed developments have the potential to contaminate stormwater resulting from additional vehicle operations leaking hydrocarbons, so wherever practical, stormwater will be directed from vehicle pavements into interceptor units.

The existing Control Tower Building currently owned by Airservices Australia is under consideration for Commonwealth heritage listing, and in any event is expected to be retained and maintained consistent with the historic nature of the premises. It forms the primary focal point of the Central Precinct.

Any relocation of the Vickers Vimy aircraft from Adelaide Airport will require a suitable environmentally controlled facility in terms of light, humidity and temperature, as a prerequisite. This can suitably be arranged according to specialist engineering advice, in a portion of any new aviation museum.

### 7.6.7 Community – Relationships to State/Local Planning

Parafield Airport is included in the State Government's 30 Year Plan for Greater Adelaide as a Specialist Activity Centre and is to be retained in recognition of its importance as a training airport. Economically sustainable operations are intensely reliant upon business diversity for industrial and retail development in the other airport precincts.

The creation of an aviation museum at Parafield is seen as an appropriate development, catering for expansion of museums in a logical aviation locality.

### 7.6.8 Road Transport Integration

The existing roadway access into the Central Precinct is suitably catered for by both a signalised intersection on Kings Road with Dakota Drive, plus a further junction at Anderson Drive. No alterations to these links are expected over the next 5 years.

## 7.7 COMMERCIAL PRECINCT

### 7.7.1 Development Extent – Existing

Existing development within the Commercial Precinct consists of showrooms and bulky goods retailing, hotel, restaurant and petrol filling station. Total existing built form development for this precinct consists of approximately 35,000 m2 and total projected current visitors to this precinct are estimated to be around 2 million people per annum.

### 7.7.2 Development Extent – Projected

Future developments will include continuing bulky goods retail expansion, and the approved use of a Brand Outlet Centre, plus retail shopping/ showrooms and office warehousing.

During the first 5 years of the Master Plan the development of the Brand Outlet Centre is envisaged, along with further Bulky Goods Retail, Showrooms, and Service Trade activities consistent with its nature as a recognised specialised "Bulky Goods Centre", as designated in the 30 Year Plan for Greater Adelaide. The expanded development is expected to involve the relocation of the existing Home Display Centre to either the southern end of the Precinct or into the adjoining Levels Precinct, thus refreshing the existing facilities into a more uniform presentation. A relocated petrol filling station, advertising signs and mobile telecommunications services are also likely.

### 7.7.3 Scale of Development 0-5 Years

It is envisaged that between 30,000 m2 and 45,000 m2 of new built form space could be potentially developed over the next 5 years. The need for these developments will be principally based on market driven demand and economic viability.

### 7.7.4 Employment Aspects 0-5 Years

Given the above scale and nature of these developments, it is anticipated that there will be an increase in the number of employees and customers visiting and working at the airport. It is projected that this customer increase could be between 1 million and 1.5 million people per annum, with increased non-aviation employment numbers amounting to approximately 46 full time equivalent employees.

### 7.7.5 Economic Analysis 0-5 Years

Given the above scale and nature of these developments, the direct contribution to Gross State Product has been forecasted to be between $0.7 million and $2.7 million.

### 7.7.6 Environmental Considerations 0-5 Years

There is the potential for varied waste streams which could be generated from expanded developments. PAL will require waste management plans and mitigation actions from any tenants with a risk of attracting birds.

Equally, stormwater runoff will potentially increase proportionately with increases in the paved surface area. Proposed developments have the potential to contaminate stormwater resulting from additional vehicle operations leaking hydrocarbons. Where necessary, stormwater will be directed from vehicle pavements into interceptor units before being directed into the adjoining stormwater easement located along the western perimeter of the precinct.

The potential relocation of the petrol filling station may pose an increased risk of groundwater contamination. However, given the current risk mitigants required with this form of land use, the risks are considered to be low. Additionally, PAL requires that any existing tenant must follow strict site remediation protocols and ensure that any existing or new sites must meet the relevant regulatory requirements and associated Australian Standards.

In regards to noise, there are no sensitive receptors in close proximity to this precinct, with industrial and commercial facilities (e.g. car sales yards) located to the east across Main North Road.

### 7.7.7 Community – Relationships to State/Local Planning

The location of the Commercial Estate strategically at the intersection of Main North Road and Kings Road is ideally located for the existing and further expansion of retailing facilities along a major transport highway. The locality is duly recognised in the 30 Year Plan for Greater Adelaide as a Bulky Goods Centre (refer Chapter 6).

### 7.7.8 Road Transport Integration

The existing signalised junction and direct access points into the precinct are suitable for existing retailing activity. To cater for future expansion, a new signalised intersection is seen as necessary, linking to Main North Road, with the optimum location corresponding with Kesters Road, in the interests of also improving the broader external road network to the east. This would be in addition to a prior alteration to Freda Thomson Place catering for a new "Left-Out" access as previously accepted by DPTI. PAL would co-ordinate such traffic works with retail expansions.

## 7.8 LEVELS PRECINCT

### 7.8.1 Development Extent – Existing

The Levels Precinct has been substantially cleared and unpaved road infrastructure exists for vehicular access into and around this site.

### 7.8.2 Development Extent – Projected

Future development prospects include commercial activities such as a motel and home display centre, motor vehicle auction and sales facilities, and possible petrol filling station, associated car wash and convenience store.

During the ensuing 5 years, the envisaged development includes a possible motel, home display and building centre and associated roadway linkages, together with a motor vehicle auction/storage area and possible associated showrooms. A truck wash/refuelling/café/rest facility may also occur.

### 7.8.3 Scale of Development 0-5 Years

It is envisaged that a motel development of between 50 to 75 rooms, a relocated display home centre and one to two hectares of other commercial improvements are likely to be developed over the next 5 years. The need for these developments will be principally hospitality demand, relocation of existing built form from the Commercial Precinct and market demand.

### 7.8.4 Employment Aspects 0-5 Years

Given the above scale and nature of these developments, it is anticipated that there will be an increase in the number of employees of approximately 40 full time equivalent employees, and a projected increase of between 15,000 to 20,000 customers per annum visiting the airport.

### 7.8.5 Economic Analysis 0-5 Years

Given the above scale and nature of these developments the direct contribution to Gross State Product has been forecast to be approximately $4.2 million.

### 7.8.6 Environmental Considerations 0-5 Years

To reduce reliance on potable water, PAL will seek to introduce a recycled water supply into the precinct where practical.

Any hospitality accommodation development would be constructed consistent with AS 2021-2000, Aircraft Noise – Building Site and Construction. The precinct is remote from sensitive receptors.

There is some potential for stormwater runoff to increase proportionately with paved surface area. Car parks associated with the proposed developments have the potential to contaminate stormwater. Where practicable, surface runoff from paved vehicle parking areas will be directed into interceptor units, before flowing into the airport drainage system and, via easements, into the City of Salisbury drainage system.

Storage of fuels and vehicle parking at a petrol filling station may result in some incidences of hydrocarbon spills and leaks impacting soil, groundwater and stormwater runoff. Stormwater will therefore be directed from the vehicle pavements into interceptor units to assist in reducing contaminant loads into the drainage system. It is also a requirement that any new fuel storage and supply infrastructure associated with a petrol filling station must meet the relevant regulatory requirements and associated Australian Standards.

### 7.8.7 Community – Relationships to State/Local Planning

The forecast development activity is consistent with the current Parafield Airport Master Plan, and previously accepted in terms of traffic accessibility by DPTI in the construction of the adjoining Elders Smith Road.

### 7.8.8 Road Transport Integration

Allowances were included in the transfer of land to the State Government for the construction of Elder Smith Road for a left-in, left out access point into Elder Smith Road, along with a new access point from Main North Road at least 300 metres north from the intersection of Elder Smith Road/Main North Road. The left-in, left out access point has been constructed by DPTI at a suitable point.

## 7.9 BENNETT PRECINCT

### 7.9.1 Development Extent – Existing

The Bennett Precinct has been previously cleared, but there exists elements of conservation, which have been delineated within the Bennett Precinct Conservation and Buffer Zone Plan (Figure 6.3). There exists unpaved road infrastructure for vehicular access to this site. External access to this precinct is from Main North Road.

### 7.9.2 Development Extent – Projected

Future development is expected to provide for public access to the vernal pools conservation area to cater for interpretative and educational services, and ancillary services such as retail kiosks, amenities and some advertising.

During the 5 year period of the Master Plan, possible enhancement of the precinct is envisaged by way of some possible interpretative facilities associated with the environmentally significant vernal pools within the precinct. Erection of advertising signs, possibly relocated from other airport precincts, is also likely.

At the time of approval of the Elder Smith Road in December 2002, the City of Salisbury advised of its interest to undertake the care, control and management of the vernal pools in the nominated conservation zone, and, in principle, consistent with a Sanctuary Agreement with the National Parks and Wildlife Service. A copy of the expression of interest is included at Appendix B.

Past interest has been expressed by the University of South Australia and the Mawson Lakes Joint Venture of expanding adjoining golfing activities into the precinct and as included in the approved Cross Keys Major Development Plan (2004). In this event, a further Major Development Plan under the *Airports Act 1996* has been foreshadowed in terms of environmental significance and subject to agreement upon commercial leasing terms and compatibility with aviation activities, and the strict conservation needs of the vernal pools. In any event, interconnecting pathways are possible to the University of SA Mawson Lakes Campus for environmental research purposes.

### 7.9.3 Scale of Development 0-5 Years

It is not envisaged that a significant amount of new built form space will be developed over the next 5 years with the need for any development principally based on environmental or recreational pursuits, including possible kiosk, conveniences and limited car parking.

### 7.9.4 Employment Aspects 0-5 Years

Direct employment prospects are expected to be minimal.

### 7.9.5 Economic Analysis 0-5 Years

Any direct or indirect contribution to Gross State Product is expected to be minimal.

### 7.9.6 Environmental Considerations 0-5 Years

The vernal pools continue to be adequately protected from overland water run-off either from Elder Smith Road or Main North Road in non-extreme events.

Minor buffer mounding is proposed to protect the vernal pools from overland flows carrying sediment in extreme events. The development of minor traffic access and car parking would occur simultaneously. The buffer will also control public access to the vernal pools and associated catchments to prevent flora damage and fauna disturbance.

Vernal pools are "patch habitats" dependent upon winter/spring surface water run-off and are positively correlated with plant species diversity and are ideally suited to small scale restoration efforts where the reserved/mitigated area need be no larger than the pools themselves and their associated upland pool catchments. The size of the pools can vary between 200 $m^2$ to 1000 $m^2$, with catchment areas generally having radii of around 30 to 40 metres. Groups of vernal pools are generally located within a larger grassland community.

At Parafield, the vernal pools are located in groups on both sides of Elder Smith Road in a nominated conservation zone incorporating the Bennett Precinct (approx. 13 ha) and Cross Keys Precinct (approx. 7 ha). This conservation zone includes grasslands containing mainly introduced plant species such as clovers representative of past intense cultivation and animal grazing uses. The conservation zones under suitable management can contain other compatible activities including walking trails and interpretative signage, and it is proposed that any ancillary promotional, research and commercial activities will be suitably buffered from the vernal pool localities. A small scale kiosk, amenities and car parking will be suitably segregated, and would only occur in the Bennett Precinct.

The Buffer and Conservation Areas Plan (Figure 6.3) identifies the extent and location of the vernal pools and their associated catchments, within suitably sized grassland conservation space, which acts as a buffer to prevent human interaction and potential ecological degradation.

The Wetland Inventory for the Mount Lofty Ranges identifies the vernal pools as containing species of state and regional significance, as well as being a threatened habitat. However, there are no nationally significant flora species under the *EPBC Act 1999*.

### 7.9.7 Road Transport Integration

Current access into the Bennett Precinct is from the access point along the southern perimeter of the land, being one originally constructed for Bennett Road (physically closed public road, but retained as a service road to allow maintenance access to the adjoining Bennett Road drain).

This access point is to be retained and improved to suitably allow small levels of traffic that may visit the locality for environmental interpretative/ education purposes associated with the vernal pools (ephemeral wetlands). A new minor service road access point is also likely from Elder Smith Road.

## 7.10 CROSS KEYS PRECINCT

### 7.10.1 Development Extent – Existing

The Cross Keys Precinct has been substantially cleared and there exists unpaved road infrastructure for vehicular access to this site. Road intersection access points have been provisioned and constructed off Elder Smith Road and St Kitts Place since 2007.

### 7.10.2 Development Extent – Projected

Future developments are intended to focus on industrial activity such as freight distribution, warehousing and storage and other technological industry consistent with the aim of establishing the Cross Keys Enterprise Park.

In the 5 year period of the Master Plan, envisaged developments are freight and distribution activities, a possible road transport terminal and office/ warehousing, and associated infrastructure including roads, water, power and telecommunication services. The precinct is classed as key employment lands in the State Government Industrial Land Strategy (refer Section 6.3) and the Cross Keys Enterprise Park was accepted in 2004, in association with the construction by the State Government of Elder Smith Road in 2007 as a Major Development under the *Airports Act 1996*.

### 7.10.3 Scale of Development 0-5 Years

It is envisaged that between 40,000 m2 and 100,000 m2 of new built form space may be potentially developed over the next 5 years. The need for these developments is principally based on the shortage of industrial and employment lands in Adelaide and Cross Keys being recognised as a prime development ready site in the Housing and Employment Land Supply Program 2010 – Greater Adelaide.

### 7.10.4 Employment Aspects 0-5 Years

Given the above scale and nature of the Cross Keys developments, it is anticipated that there will be an increase in the number of employees of between 50 to 100 full time equivalent employees working at the Airport.

### 7.10.5 Economic Analysis 0-5 Years

Given the above scale and nature of the Cross Keys developments the direct contribution to Gross State Product has been forecast to be in the range of $5.2 million to $10.5 million.

### 7.10.6 Environmental Considerations 0-5 Years

To reduce reliance on potable water, PAL will seek to arrange interconnection to the recycled water supply adjoining the land, which has been constructed by the City of Salisbury.

Detailed noise modelling has been completed by specialist acoustic consultants, with the outcome that all industrial activity is forecast to comply with both Commonwealth and State acoustic criteria. The protective earth buffer adjacent the Mawson Lakes residential area has also been designed and constructed by the Mawson Lakes Joint Venture to keep noise levels within regulatory criteria. New developments in Cross Keys will be subject to reviewed noise modelling to assess the adequacy of the installed buffers and fences, and suitable enhancements undertaken as necessary.

The conservation zone outlined in Figure 6.3 within this precinct contains environmentally significant vernal pools, which are to be suitably managed. More detailed discussion on this situation is included in the Bennett Precinct.

Proposed developments have the potential to contaminate soil, groundwater and stormwater resulting from the storage and handling of fuels, oils and chemicals. Stormwater runoff may increase proportionately with paved surface area. Car parks and other vehicle traffic areas associated with developments have the potential to contaminate stormwater and such water run-off and will be directed into interceptor units to assist in reducing contaminant loads into the off-airport drainage system. Clean stormwater from development runoff is to be separately collected wherever practical at the request of the City of Salisbury so that it might be

included as part of the water harvesting project on airport in the Runways Precinct.

Industrial facilities may house machining, painting or other processes that generate air emissions. Controls of point source emissions will be designed to ensure regulatory air quality criteria are met and all facilities constructed to the Building Code of Australia.

### 7.10.7 Community–Relationships to State/Local Planning

The Cross Keys industrial land is specified as development-ready employment land in the State's 30 Year Plan for Greater Adelaide and the Housing and Employment Land Supply Program 2010 – Greater Adelaide. It comprises some 60-70 ha of land that is deemed as important to retain for industrial purposes.

### 7.10.8 Road Transport Integration

The construction of Elder Smith Road in 2007 was approved under a Major Development Plan and was designed to accommodate the industrial nature of the Cross Keys Enterprise Park, including B-Double transport accessibility into a suitably constructed access point. This access point is located with already constructed slip lanes. The feeder road into Cross Keys is also suitably located between nominated vernal pools in the land fronting Elder Smith Road and the adjoining Runways Precinct.

The secondary access point is accepted for passenger vehicles into the Mawson Lakes area linking into St Kitts Place. An alternative of a new left-in, left-out access point directly on to Elder Smith Road nearby, which has been previously suggested by the City of Salisbury, has not been accepted by DPTI.

## 7.11 KINGS PRECINCT

### 7.11.1 Development Extent – Existing

The Kings Precinct has been substantially cleared and there exists unpaved road infrastructure for vehicular access to this site together with airside aeronautical infrastructure. This is accessible from the adjoining Central Precinct.

### 7.11.2 Development Extent – Projected

Future developments are expected to include expansion of aviation support activities and general industrial activities.

Within the next 5 years, the establishment of a "Park and Ride" car park adjacent to the Parafield railway station is envisaged, with also limited aviation hangars and associated infrastructure. Industrial development is forecast to occur subsequent to the full development of Cross Keys Enterprise Park. Employment increases are expected to be minimal in the next 5 years.

### 7.11.3 Scale of Development 0-5 Years

It is envisaged that between 6,000 m2 and 10,000 m2 of new built form space may be potentially developed over the next 5 years. The need for these developments will be principally based on future airport aviation growth, aviation-related support industry and market driven industrial demand.

### 7.11.4 Employment Aspects 0-5 Years

Given the above scale and nature of these developments, it is anticipated that there could be a minor increase in the number of aviation-related employees of approximately 20 full time equivalent employees working at the airport.

### 7.11.5 Economic Analysis 0-5 Years

Given the above scale and nature of these developments, the direct contribution to Gross State Product has been forecast to be approximately $2.1 million for the Central Precinct.

### 7.11.6 Environmental Considerations 0-5 Years

To reduce reliance on potable water supply, interconnection to the adjoining City of Salisbury recycled water network is expected as development occurs.

Noise emissions from the proposed developments are not expected to be significant, taking into

consideration the adjacent railway corridor that provides an additional buffer between the airport and Parafield Gardens residents. Acoustic modelling will be a prerequisite to new developments to ensure compliance with both Commonwealth and State criteria.

Proposed aviation support developments have the potential to contaminate soil, groundwater and stormwater resulting from aircraft and vehicle operations. Parking can result in hydrocarbon spills and leaks. The storage of fuels, oils and chemicals has the potential for spills to lead to stormwater contamination. Where practicable, stormwater from vehicle pavement areas will be directed into underground interceptor units to assist in containing spills and reducing contaminant loads into the off-airport drainage system.

### 7.11.7 Community–Relationships to State/Local Planning

The industrial land in the Kings Precinct is specified as development ready employment lands, consistent with the State's 30 Year Plan for Greater Adelaide and the Housing and Employment Land Supply Program 2010 – Greater Adelaide. It comprises some 30 ha of land that is deemed as important to retain for that purpose.

### 7.11.8 Road Transport Integration

The current roadway access from the Central Precinct is to be retained as the primary connection into the Kings Precinct, with enhancements to be made to the road surface through bitumen sealing as future developments occur. A further access way has previously been accepted by DPTI closer to the nearby Parafield railway station. This is expected to be constructed in conjunction with a projected State Government "Park and Ride" car park servicing this railway station.