



**ATTACHMENTS CIRCULATED UNDER SEPARATE COVER
FOR POLICY AND PLANNING COMMITTEE MEETING TO BE HELD ON
18 MARCH 2024 AT 6.30 PM
IN LITTLE PARA CONFERENCE ROOMS, SALISBURY COMMUNITY HUB, 34
CHURCH STREET, SALISBURY**

1.1.1	Parafield Airport Master Plan 2024-2043
Attachment 3	Parafield Airport Master Plan 2024 -2043 Preliminary Draft..... 34



This document is the Parafield Airport Preliminary Draft Master Plan 2024.

In accordance with the requirements of the *Airports Act 1996*, the Preliminary Draft is available for public review and comment for a period of 60 business days.

Public comment submissions are to be made in writing and sent to Parafield Airport before close of business on 4 April 2024.

Master Plan 2024 Submission
Parafield Airport Limited
Building 18 Tigermoth Lane
Parafield Airport SA 5108

Email: palmasterplan2024@aal.com.au

Disclaimer

This Master Plan has been prepared by Parafield Airport Limited (PAL) ACN 075 176 608 for the purpose of satisfying the statutory requirements of the *Airports Act 1996*.

Whilst every care has been taken in preparing this document, PAL makes no representation or warranty as to the accuracy or completeness of this document. No person should act in reliance on any information provided in, or omitted from, this document or any other written or oral information or opinions provided in connection with this document. PAL accepts no liability whatsoever to any person who relies in any way on information contained in this Master Plan.

Foreword

I am pleased to present Parafield Airport's Master Plan 2024 (Master Plan 2024), being the airport's primary planning document for the next 8 years with a planning horizon for the next 20 years.

Parafield Airport is the major general aviation and pilot training airport in South Australia and is home to one of the largest pilot training schools in the Southern Hemisphere. The aerodrome was first used in 1927 and was Adelaide's main airport until the opening of Adelaide Airport in 1955. It has always been a flying training airport and also includes recreational flying and aircraft maintenance.

Three main aviation training companies operate out of Parafield Airport - Flight Training Adelaide, Hartwig Air and Aerostar Aviation.

Flight Training Adelaide partners with the University of South Australia to carry out flight training for students as part of the Graduate Diploma in Aviation, as well as international airlines including Cathay Pacific, IndiGo (India), China Airlines, Starlux (Taiwan), Sky Airline and J-Air (Japan). Flight Training Adelaide also provides training for Leidos (formally Cobham) special mission services (border surveillance and search and rescue operations), as well as helicopter pilot training. The college has been operating at Parafield Airport for over 40 years with nearly 300 students accommodated on site.

Hartwig Air has been training pilots for over 50 years and partners with RMIT University to train commercial pilots under an Associate Degree of Aviation (Professional Pilots). Aerostar Aviation partners with TAFE Queensland to offer a Diploma of Aviation (Commercial Pilot Licence – Aeroplane) and with the Central Queensland University to offer a Graduate Diploma of Aviation.

The 2022 Boeing Pilot and Technician Outlook forecasts that between 2022 and 2041, the aviation industry will need to supply 602,000 commercial airline pilots with 41% of these required for countries in Asia and Oceania. Flight training organisations located at Parafield will continue to contribute to the future success of global aviation.

The Parafield Airport Master Plan 2024 covers airport planning and operations – from forecast aeronautical growth and associated development through to ground transport, airport safeguarding, land uses, environment strategies, aircraft noise exposure and commercial development.

PALs philosophy is to operate and develop Parafield Airport in accordance with the principles of sustainable development, recognising that the success of the airport can be enhanced by conducting business in a way that is efficient and environmentally, socially and economically responsible. However, in all decisions, safe and secure airport operations are paramount.

Parafield Airport's proximity to the surrounding suburbs means that careful planning and consultation is required to ensure that the aviation considerations of the airport are protected, while also ensuring that operational requirements are balanced with the community's needs.

PAL is proud to take a strong leadership role in the community. As operator of one of the most significant business, training and employment precincts in the northern suburbs, PAL provides support where it will generate a lasting benefit. PAL assists the northern region through partnerships relating to the environment, community, business and tourism. PAL is proud to support sporting clubs, educational institutions, local council festivals, cultural programs and other local initiatives. It is a major economic generator, contributing \$354.8 million – or 0.3% per cent towards Gross State Product. In 2022, the airport directly employed 1,249 people, both on and off the airport.



Foreword

PAL encourages its aircraft operators to adopt the 'Fly Friendly' program, which seeks to manage the impact of aircraft operations on the surrounding community. Parafield Airport continues to invest in airport infrastructure that supports quieter aircraft and operating methods. Aircraft operators at Parafield Airport have also expressed a strong intention to take up electric or hybrid aircraft types when they become commercially available due to the potential to reduce carbon-related emissions, aircraft noise and operating costs, however, there are still many challenges to overcome in the transition to electric aircraft.

Since the Parafield Airport Master Plan 2017, we have seen progress in terms of aeronautical and non-aeronautical infrastructure development. This Master Plan 2024 builds on this progress, with no significant deviations from previous plans. Our property business has continued to work through the COVID challenges faced by existing tenants, while managing the reactivation of enquiries for commercial and industrial uses.

PAL is committed to engaging with the community and our key stakeholders throughout the Master Plan 2024 process, inviting feedback about the challenges and opportunities that the community and stakeholders believed to be important to the future planning of Parafield Airport. We invite you to participate in the consultation process by providing your feedback on the Preliminary Draft version of the Master Plan 2024, during the formal process of public consultation, commencing in January 2024 for 60 business days.

This Master Plan 2024 will continue to be the primary guide to the future planning and development of Parafield Airport and its environs, addressing our statutory obligations pursuant to the *Airports Act 1996*.

Brenton Cox

Managing Director
Parafield Airport Limited

Parafield Airport Limited acknowledges the Kaurna People as the traditional owners and custodians of the land. We respect the spiritual relationship with Country that has developed over thousands of years, and the cultural heritage and beliefs that remain important to the Kaurna People today.

Table of Contents

Foreword	i
Executive Summary	ix
Abbreviations	xviii
Glossary	xix
Section A About Parafield Airport	
Section 1 Introducing the Parafield Airport Master Plan	
1.1 Welcome to the Master Plan	4
1.2 Purpose of the Master Plan	5
1.3 Contents of the Master Plan	5
Section 2 Parafield Airport Today	
2.1 Background	10
2.2 Airport Site	12
2.3 Airport History	16
2.4 Achievements Since Master Plan 2017	18
2.5 Airport Ownership	19
2.6 Facilities	19
2.7 Airport Operations	21
2.8 Relationship to Other Airports	22
Section 3 Significance of the Airport	
3.1 Introduction	26
3.2 Economic Contribution	26
3.3 Social and Community	30
Section B How Parafield Airport is Planned	
Section 4 Planning Framework	
4.1 Introduction	34
4.2 Commonwealth Policy and Legislative Framework	34
4.3 State and Greater Adelaide Context	38
4.4 Local Government Context	41
Section 5 Planning and Development Approach	
5.1 Airport Vision	44
5.2 Development Approach	44
5.3 Development Objectives	46
5.4 Consultation and Engagement	47
Section 6 Aviation Forecasts	
6.1 Introduction	52
6.2 Overview	52
6.3 Forecasting Approach	53
6.4 Recent Performance	55
6.5 Parafield Airport Activity Forecasts	56
Section C The Plan for Parafield Airport	
Section 7 Land Use Plan	
7.1 Introduction	64
7.2 Planning Framework	64
7.3 Runways Precinct	67
7.4 Airport Business Precinct	70
7.5 Commercial Precinct	75
7.6 Bennett Precinct	77
7.7 Enterprise Precinct	79
7.8 Alignment with Surrounding Land Uses	82
7.9 Consistency with State and Local Planning Framework	82
7.10 Sensitive Development	84
7.11 Changes from the Master Plan 2017	85
7.12 Pre-Existing Interests	85
7.13 Development Assessment Process	86
7.14 Building Assessment Process	88
Section 8 Aviation Development	
8.1 Introduction	90
8.2 Overview	90
8.3 Airfield Planning	91
8.4 Recent Developments	91
8.5 Airfield Development Plan	93
8.6 Airfield Support Infrastructure	98
Section 9 Commercial Development	
9.1 Introduction	100
9.2 Overview	100
9.3 Recent Developments	101
9.4 Commercial Property Strategy	103
9.5 8-Year Commercial Development Plan	105
9.6 20-Year Commercial Development Plan	106

Section 10

Ground Transport Plan

10.1	Introduction	108
10.2	Overview	108
10.3	Responsibilities	111
10.4	<i>Airports Act 1996</i> Requirements	112
10.5	State Planning	112
10.6	Airport Transport Planning	113
10.7	Recent Developments	114
10.8	Forecasting	114
10.9	Precinct Planning	116
10.10	Freight Rail	121
10.11	Public Transport	121
10.12	Active Travel	123
10.13	Car Parks	123
10.14	Development Plan	125

Section 11

Services Infrastructure

11.1	Introduction	128
11.2	Overview	128
11.3	Recent Developments	129
11.4	Electrical Network	129
11.5	Water	131
11.6	Gas	131
11.7	Stormwater Drainage	133
11.8	Telecommunications	136
11.9	Easements	136

Section 12

Safeguarding the Airport

12.1	Introduction	140
12.2	National Airports Safeguarding Framework	140
12.3	South Australian Government Planning Policy	141
12.4	Aircraft Noise	142
12.5	Windshear and Turbulence	143
12.6	Wildlife Strike	145
12.7	Wind Turbines	147
12.8	Lighting at the Airport and Surrounding Areas	147
12.9	Protected Airspace	149
12.10	Protecting Communications, Navigation and Surveillance Facilities	155
12.11	Strategic Helicopter Facilities	155
12.12	Public Safety Areas	156

Section 13

Aircraft Noise

13.1	Introduction	158
13.2	Overview	158
13.3	Aircraft Noise Management	159
13.4	Understanding Aircraft Noise	162
13.5	The Australian Noise Exposure Forecast (ANEF) System	163
13.6	Noise Modelling	165
13.7	Noise Modelling Outputs	183

Section 14

Environment Strategy

14.1	Introduction	192
14.2	Overview	192
14.3	Key Achievements	193
14.4	Sustainability	193
14.5	Environment Strategy Requirements	194
14.6	Environment Management Framework	195
14.7	Environmental Action Plans	202
14.8	Energy and Climate Change	203
14.9	Water Resources	205
14.10	Stormwater and Aquatic Ecology	206
14.11	Soil and Groundwater	208
14.12	Ground-based Noise	212
14.13	Local Air Quality	214
14.14	Waste Management	216
14.15	Land and Heritage Management	218

Part D

Implementing the Plan

Section 15

Development Program

15.1	Introduction	224
15.2	8-Year Development Concept Plan	224
15.3	20-Year Development Concept Plan	226

Part E

Supporting Material

Appendix A:		
Compliance with the <i>Airports Act 1996</i>		229
Appendix B:		
ANEF Data Table		237

Figures

Figure 2.1:	Snapshot of Parafield Airport today	11
Figure 2.2:	Location of Parafield Airport.....	13
Figure 2.3:	Local government areas around Parafield Airport	14
Figure 2.4:	Parafield Airport precincts	15
Figure 2.5:	Current shareholder equity of Adelaide and Parafield Airports	19
Figure 2.6:	Layout of existing facilities at Parafield Airport.....	20
Figure 2.7:	Airports located close to Parafield Airport.....	23
Figure 3.1:	Snapshot of Parafield Airport's economic contribution	26
Figure 3.2:	Actual and expected case forecast total employment 2008 – 2043.....	28
Figure 3.3:	Parafield Airport's contribution to Gross State Product 2016 – 2043	28
Figure 4.1:	The master planning process.....	35
Figure 4.2:	Comparison of the Parafield Airport and South Australian planning systems.....	39
Figure 5.1	Development objectives	46
Figure 6.1:	Snapshot of Parafield Airport movement forecasts 2019 to 2043.....	52
Figure 6.2:	Annual aircraft movements at Parafield Airport, 2000 to 2022	55
Figure 6.3:	Parafield Airport aircraft movement forecast scenarios.....	57
Figure 7.1:	Parafield Airport precincts	66
Figure 7.2:	Runways Precinct.....	68
Figure 7.3:	Airport Business Precinct.....	71
Figure 7.4:	Commercial Precinct	75
Figure 7.5:	Bennett Precinct.....	77
Figure 7.6:	Enterprise Precinct.....	80
Figure 7.7:	Land uses surrounding Parafield Airport.....	83
Figure 7.8:	Parafield Airport development assessment matrix.....	87
Figure 7.9:	Development and building approvals process	88
Figure 8.1:	Existing airfield layout	92
Figure 8.2:	Planned airfield layout to 2043.....	97
Figure 9.1:	Recent commercial developments at Parafield Airport	102
Figure 10.1:	Existing external road and rail network surrounding Parafield Airport	109
Figure 10.2:	Wider metropolitan Adelaide road context.....	110
Figure 10.3:	Existing and forecast daily vehicle traffic volumes at Parafield Airport	115
Figure 10.4:	Parafield Airport's existing internal road network.....	117
Figure 10.5:	Parafield Airport 8-year Ground Transport Plan	119
Figure 10.6:	Parafield Airport 20-year Ground Transport Plan	120
Figure 10.7:	Bus and rail routes and stops within and surrounding Parafield Airport.....	122
Figure 10.8:	Existing and potential future cycleways and shared paths	124
Figure 11.1:	Existing electrical network	130
Figure 11.2:	Existing water and gas networks at Parafield Airport.....	132
Figure 11.3:	Major Adelaide stormwater catchments in the vicinity of Parafield Airport.....	134
Figure 11.4:	Major drainage systems at Parafield Airport.....	135
Figure 11.5:	Existing easements and licence agreements at Parafield Airport	137
Figure 12.1:	Windshear and turbulence assessment envelopes for Parafield Airport	144
Figure 12.2:	Wildlife buffer zones for Parafield Airport.....	146

Figure 12.3:	Lighting control zones for Parafield Airport.....	148
Figure 12.4:	Obstacle Limitation Surfaces (OLS) plan for Parafield Airport	152
Figure 12.5:	Procedures for Air Navigation Services Aircraft Operations (PANS-OPS) surfaces.....	153
Figure 12.6:	Procedures for Air Navigation Services Aircraft Operations (PANS-OPS) surfaces inset	154
Figure 13.1:	Arrival flight paths for Parafield Airport – runway direction 03.....	170
Figure 13.2:	Arrival flight paths for Parafield Airport – runway direction 21	171
Figure 13.3:	Arrival flight paths for Parafield Airport – runway direction 08.....	172
Figure 13.4:	Arrival flight paths for Parafield Airport – runway direction 26.....	173
Figure 13.5:	Departure flight paths for Parafield Airport – runway direction 03	174
Figure 13.6:	Departure flight paths for Parafield Airport – runway direction 21.....	175
Figure 13.7:	Departure flight paths for Parafield Airport – runway direction 08	176
Figure 13.8:	Departure flight paths for Parafield Airport – runway direction 26	177
Figure 13.9:	Helicopter flight paths and circuit paths for Parafield Airport	178
Figure 13.10:	Circuit flight paths for Parafield Airport – runway direction 03.....	179
Figure 13.11:	Circuit flight paths for Parafield Airport – runway direction 21.....	180
Figure 13.12:	Circuit flight paths for Parafield Airport – runway direction 08.....	181
Figure 13.13:	Circuit flight paths for Parafield Airport – runway direction 26.....	182
Figure 13.14:	Example noise levels (in decibels)	184
Figure 13.15:	Australian Noise Exposure Index 2022.....	186
Figure 13.16:	Australian Noise Exposure Forecast 2043.....	187
Figure 13.17:	Parafield Airport Number-Above contours - 2022	188
Figure 13.18:	Parafield Airport Number-Above contours – 2043 Forecast.....	189
Figure 14.1:	Parafield Airport Environmental Management Framework	195
Figure 14.2:	Parafield Airport's contamination and spill management process	209
Figure 14.3:	Environmental Management System process for contaminated sites	211
Figure 14.4:	Waste management hierarchy (Environment Protection Act 1993 for South Australia).....	216

Tables

Table 3-1:	Economic contribution of Parafield Airport – 2022.....	26
Table 3-2:	Forecast employment growth	27
Table 3-3:	Parafield Airport current and forecast total employment 2022 to 2043 per precinct.....	29
Table 6-1:	Parafield Airport forecasting approach	54
Table 6-2:	Data sources to predict forecast movements	54
Table 6-3:	Movement forecasts for Parafield Airport 2022 to 2043	57
Table 6-4:	Potential use of electric aircraft for Parafield Airport.....	59
Table 7-1:	Parafield Airport estate precincts.....	65
Table 7-2:	Runways Precinct categories of development	69
Table 7-3:	Airport Business Precinct categories of development.....	72
Table 7-4:	Commercial Precinct categories of development	76
Table 7-5:	Bennett Precinct categories of development	78
Table 7-6:	Enterprise Precinct categories of development	80
Table 7-7:	Pre-existing interests	84
Table 8-1:	8-Year Airfield Development Plan.....	96
Table 8-2:	20-Year Airfield Development Plan.....	96
Table 9-1:	Recent commercial developments at Parafield Airport	101
Table 9-2:	Potential 8-year commercial development plan	105
Table 9-3:	Potential 20-year commercial development plan	106
Table 10-1:	8-Year ground transport development Plan	125
Table 10-2:	20-Year ground transport development Plan	126
Table 12-1:	National airports safeguarding framework guidelines	140
Table 13-1:	Responsibilities for aircraft noise management.....	159
Table 13-2:	Permitted circuit operations hours (January 2023).....	160
Table 13-3:	AS2021 table of building site acceptability based on ANEF zones	164
Table 13-4:	Parafield Airport runway use comparison	166
Table 13-5:	2043 forecast movements by aircraft type	167
Table 14-1:	Environmental management responsibilities	196
Table 14-2:	Activities with potential for environmental impact at Parafield Airport	197
Table 14-3:	Environmental management documentation	200
Table 14-4:	Summary of key environmental monitoring activities.....	201
Table 14-5:	Environmental action plan framework.....	202
Table 14-6:	Timeframes for management actions	202
Table 14-7:	Energy and climate change 8-Year Action Plan	204
Table 14-8:	Water resources 8-Year Action Plan.....	205
Table 14-9:	Stormwater and aquatic ecology 8-Year Action Plan	207
Table 14-10:	Soil and groundwater 8-Year Action Plan	211
Table 14-11:	Ground-based noise 8-Year Action Plan.....	213
Table 14-12:	Local air quality 8-Year Action Plan.....	215
Table 14-13:	Waste management 8-Year Action Plan.....	217
Table 14-14:	Land and heritage 8-Year Action Plan.....	220
Table 15-1:	8-Year development concept plan.....	225
Table 15-2:	20-Year development concept plan.....	226



Executive Summary

Introduction

Parafield Airport Limited (PAL) is pleased to share with you its plans for the next 20 years. The Parafield Airport Master Plan 2024 (Master Plan 2024) outlines the vision for the development of Parafield Airport to support aviation activities, commercial development, environmental management and infrastructure delivery.

The Master Plan 2024 includes a Development Program, Environment Strategy and Ground Transport Plan. It also provides an update of aviation forecasts and aircraft noise exposure.

By continuing to focus on sustainable outcomes, finding innovative solutions, short and longer-term planning and delivery of facilities, infrastructure, ground transport and utilities, Parafield Airport will continue to support and meet the needs of the general aviation industry and pilot training organisations.

The Master Plan 2024 forms a comprehensive overview of the ongoing regulation of activities on the airport through consultation with key stakeholders, Commonwealth, state and local government, the aviation industry and local communities.

During 2022, Parafield Airport had approximately 4,200 aircraft movements every week, with the majority being pilot training flights.

Over 103 businesses operate from Parafield Airport, comprising pilot training and aviation support operations, as well as commercial businesses and retail hubs located within the commercial estate.

PAL is proud to present its Master Plan 2024 as the blueprint to continue developing and operating Parafield Airport as the major general aviation and pilot training airport in South Australia. The Master Plan 2024 builds on the Parafield Airport Master Plan 2017 which was approved by the Commonwealth Minister for Infrastructure and Transport on 19 January 2018. The Master Plan 2024 is developed through extensive stakeholder and community consultation, including a 60-business day public comment period.

About the Master Plan

The purpose of the Parafield Airport Master Plan 2024 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. The Airports Act 1996 is the guiding legislation in the preparation of the Master Plan 2024.

After this public comment period and relevant amendment of the document, a Draft Master Plan will be submitted for the consideration of the Federal Minister for Infrastructure, Transport Regional Development and Local Government. Once approved, the Parafield Airport Master Plan 2024 will remain in force for a period of 8 years from the date of approval or until it is replaced by a new or revised plan.

Have Your Say

Public comment submissions are to be made in writing and sent to Parafield Airport before close of business on 4 April 2024.

Master Plan Submission

Parafield Airport Limited
Building 18 Tigermoth Lane
Parafield Airport SA 5108

Email: palmasterplan2024@aal.com.au

In accordance with the Airports Act, PAL must consider submissions received during the public comment period. Where possible, the concerns and issues raised will be incorporated into the Draft Master Plan which will be presented to the Commonwealth Minister for consideration.

Supporting a Sustainable Aviation Industry

The focus areas for the development and execution of this Master Plan 2024 include:

- Supporting the aviation industry
- Striving for innovative solutions
- Achieving sustainable outcomes.

These underpin the day-to-day operations of the airport and what PAL strives towards:

- Maintaining the airport as South Australia's principal general aviation and pilot training airport
- Enhancing the airport as a key element of transport infrastructure
- Facilitating flight training activities and the movement of general aviation by infrastructure improvements
- Contributing to the viability of the airport as a business enterprise through the provision of commercial, retail and industrial activities
- Providing an economic core and employment center for the northern suburbs of Adelaide and beyond.

The following development objectives guide future investments in facilities and infrastructure for the airport.



Driving Northern Adelaide and South Australia's Economy

Parafield Airport makes a significant contribution to both Northern Adelaide and the South Australian economy associated with the Airport's overall business activities.

Parafield Airport contributed an estimated \$354.8 million to the South Australian economy in 2022, equivalent to 0.276 per cent of Gross State Product (GSP).

It is estimated that in 2022 the Parafield Airport estate directly employed 1,249 people both on and off airport. This employment level supports a gross operating surplus of \$41.8 million, giving a total contribution to Gross State Product directly of \$150 million.

Parafield Airport continues to be one of the most significant business, training and employment precincts in the northern suburbs of Adelaide and supports the surrounding northern suburbs through partnerships across environment, community, business and tourism.

Snapshot of Parafield Airport in 2022



103 individual businesses



433 hectare site



Employment:

- Direct jobs - 1,249 FTEs.
- Induced jobs - 1,321



Added to SA state economy in 2022

- Airport Economic Activity – \$354.8 million
- Gross State Product – 0.3%



219,000 aircraft movements in 2022



4 runways



40% carbon emission reduction* in 2022

* Airports Carbon Accreditation for airport operations

Aviation Growth

Parafield Airport is one of the busiest general aviation airports in Australia, with over 90 per cent of movements related to pilot training activity. There is a range of other general aviation activities that occur, such as aerial agriculture, aerial photography, and charter services.

There continues to be a high demand for flight training in Australia with recent forecasts suggesting that the aviation industry will need to supply 602,000 commercial airline pilots between 2033 and 2041, with 41 per cent of these required for countries in Asia and Oceania. Parafield Airport is well positioned to support some of this training requirements.

In 2022 there were 219,000 movements, down from almost 270,000 movements in 2019. Aircraft movements are forecast to increase to 342,000 by 2043. This is consistent with previous forecasts for aircraft movement growth at Parafield Airport.

Emerging Electric Aircraft

The aviation industry has made exciting advancements in electric/hybrid aircraft technology in recent years, but it does come with challenges that must be overcome for electric aircraft to become a viable option for the general aviation industry.

Aircraft operators at Parafield Airport have expressed a strong intention to take up electric or hybrid aircraft types when they become available due to the potential to reduce carbon-related emissions, aircraft noise and operating costs (relative to the current avgas fueled aircraft).

The limitations that will need to be overcome for electric aircraft to become viable include the current battery technology which limits the distance and duration of flights, the requirement for large, specialised charging facilities at airports, aviation regulations and standards that do not take into account the specific characteristics of electric aircraft, and the higher costs associated with manufacturing and therefore purchasing electric aircraft.

Electric aircraft are already being trialled at a number of airports around Australia. In June 2021, the flying school Eyre to There Aviation achieved a world endurance record for electric aircraft when it completed a 1,350km, 18-stop, flight that departed from Parafield Airport.

It is assumed that the take-up of electric aircraft will be at a faster rate for the pilot training sector, relative to the other general aviation sectors. Based on these assumptions, the proportion of total movements by electric/hybrid aircraft types is forecast to increase from an estimated 17 per cent in 2031 to 69 per cent in 2043. However, there are still many challenges to overcome in the transition to electric aircraft.

PAL will continue to monitor emerging technologies. Adaptable staging and timing of infrastructure investment allows PAL to consider and respond to opportunities for incorporating innovative and sustainable options.

Aviation Development

Fundamental to the successful operation of Parafield Airport is the ongoing development of the airfield to meet the forecast demand in the future. The airfield is the area of the airport used for aircraft operations. It includes the runways, taxiways, aprons and parking stands.

The existing runway system provides sufficient capacity to handle the forecast volumes of air traffic up to and beyond the 20-year planning horizon of this Master Plan 2024.

The first eight years of the Master Plan, to 2031, will focus on expansion of airfield infrastructure to improve efficiency, working to a staged program of development.

Areas to the west of the existing apron area will be retained for further aircraft parking and provision of additional aviation related support industries, such as hangars.

The current operations of helicopters at Parafield Airport are largely associated with pilot training and account for five per cent of total aircraft movements. The existing helicopter facilities have sufficient theoretical capacity to meet future demand. However, the preference for operations from Helipad West, limitations for operations from Helipad East and constraints with runway operations have led to consideration of alternative locations for helicopter facilities which allow for more efficient operations and to optimise existing infrastructure. The relocation of helicopter facilities will require consideration of airfield design standards, the impacts on other aircraft operations and potential aircraft noise exposure.

Previous Parafield Airport master plans, including Master Plan 2017, identified that long-term future demand may require Code 3C aircraft to be accommodated through the extension and widening of the existing main runway 03L/21R. Following updates to the Part 139 (Aerodromes) Manual of Standards in 2020, upgrades to cater for Code 3C aircraft would impact Taxiway B and the secondary runway system. Whilst PAL continues to plan for the ability to adapt the airfield infrastructure to Code 3C aircraft, this is anticipated to be outside of the 20-year planning period of this Master Plan.

Complementary Commercial Developments

Parafield Airport is one of the largest private commercial land holdings within the northern Adelaide metropolitan area. PAL continues to identify and leverage opportunities that add value to the airport's traditional aviation focused business activities by maximising the development of airport land not required for aeronautical purposes. Such developments complement and enhance future airport operations, support the delivery of a wide range of services and facilities needed by airport users, and create employment opportunities, which will contribute to the local economy as well as the gross state product.

Parafield Airport is situated on 433 hectares and divided into five distinct precincts. Throughout the five precincts (and mainly within the Commercial and Business Precincts) there are currently 103 individual businesses operating at the airport.

The availability of large vacant landbanks at Parafield Airport, as well as the airport's geographical location and connectivity to major infrastructure, provide an opportunity to meet growing demand for industrial and commercial land in a manner that is aligned with both Adelaide and national trends. This includes demand for buildings with larger footprints and commercial offerings catering for specialised markets, such as defence and technology.

The Commercial Property Strategy presented in the Master Plan 2024 reflects the current planning for potential future commercial developments and economic predictions. The timing and scope of any future commercial developments at Parafield Airport are subject to a range of factors which are usually driven by market forces, including airport requirements, business viability, market demand and economic conditions. It is often challenging to predict the uptake and rollout of commercial developments as the different commercial segments often go in cycles which change rapidly depending on regional economic conditions.

Over the next eight years, it is anticipated that:

- Commercial development will continue within the Airport Business Precinct, including a childcare centre, the redevelopment of existing sites, and new developments occurring within the land adjacent to the railway line
- Industrial and commercial development will commence within the Enterprise Precinct
- Retail and commercial development will occur on the remainder of the developable land within the Commercial Precinct.

Getting to and from Parafield Airport

Ground transport planning is critical to the efficient operation and development of Parafield Airport to ensure effective, safe and efficient access and connectivity for all users of the airport.

Parafield Airport is located approximately 18 kilometres north of Adelaide Adelaide Central Business District (CBD) and is well connected to the metropolitan road and rail networks, with three major arterial roads bordering the airport and providing transport links to metropolitan and regional areas and an adjoining rail corridor.

Each day there are approximately 29,000 vehicle movements in and out of the airport, and by 2043 this is expected to reach approximately 66,000 daily vehicle movements. As Parafield Airport grows, it is critical that adequate consideration is given to future ground transport demands within, and adjacent to, the airport.

Parafield Airport works closely with the South Australian Government and surrounding local government authorities to make sure that the airport's current and future operations are reflected in strategic network planning.

The Commonwealth and South Australian governments are continuing to invest in improvements to external infrastructure, including the construction of the River Torrens to Darlington portion of the North-South Corridor which will complete the corridor and provide efficient access for both visitors and freight.

Parafield Airport will continue to invest in new and improved ground transport facilities on airport to support growth in traffic demand as development continues.

Public transport to the airport is primarily provided by passenger rail services along the Gawler rail line which is located adjacent to the western airport boundary and various bus services passing the airport along their routes. Both are operated by Adelaide Metro.

PAL supports improved bus connectivity to the airport to provide greater opportunities for the public to use public transport, including but not limited to:

- Inclusion of Route 228 bus stops within Commercial Precinct
- Inclusion of Route 225 bus stops within the Enterprise Precinct as it is developed
- Bus connectivity along Kings Road providing for access to Airport Business Precinct.

There are a series of cycling and shared paths (bicycle and pedestrian) within, around and connecting to the Parafield Airport site. Cycleways consist of off-road shared paths and on-road bicycle paths. There are on-road bicycle lanes, in both directions, along Main North Road and Elder Smith Road and an off-road shared path along the western boundary of the airport site and a portion of the northern boundary to Dakota Drive.

There is opportunity to extend the off-road shared path along the northern boundary of the airport site, both within the airport boundary and adjacent to it within the Kings Road verge. Similarly, there may be opportunity to further extend the path adjacent to Main North Road which would provide a safe, well-lit environment for pedestrians and cyclists while providing access to food and retail in the vicinity.

To the south of the airport, an off-road shared path within the Bennett Precinct would allow for connection to the existing path to the west and The Paddocks (community area currently being redeveloped by the City of Salisbury) to the south of the airport.

PAL will continue to consult and work with relevant authorities to further explore and develop a suitable shared path network, with consideration of opportunities both within the airport and within State and local government road reserves which not only improves and promotes active travel to and from the airport but contributes to the broader network and community.

Parafield Airport is situated on 433 hectares and divided into five distinct precincts, including:

- **Runways Precinct - 222 hectares**
- **Airport Business Precinct - 68 hectares**
- **Commercial Precinct - 48 hectares**
- **Bennett Precinct - 13 hectares**
- **Enterprise Precinct - 82 hectares.**

Safeguarding the Airport

The safety of aircraft operations to and from and at Parafield Airport, and the capacity of the airport to operate and respond to growing demand, can be directly impacted by inappropriate land use and activities that occur on the land surrounding the airport.

Long-term and effective protection and safeguarding of Parafield Airport is critical to ensuring ongoing aviation operations and safety. The safeguarding of the airport, which refers to measures taken to minimise inappropriate land uses and activities, is the shared responsibility of Parafield Airport and all levels of government.

This Master Plan 2024 has been prepared taking into consideration the National Airports Safeguarding Framework guidelines which seek to enhance the current and future safety, viability and long-term growth of aviation operations at Australian airports.

Protection of the airspace around Parafield Airport is critical to ensure safe and ongoing operations of the airport. This means that in certain areas around an airport there are restrictions on the height of buildings or structures, including cranes. There may also be restrictions on other activities that could pose a hazard to air navigation, such as those causing light reflection that could blind or confuse pilots, air turbulence, emissions (steam, gas, smoke, dust or other particular matter), or that could attract wildlife.

Managing Aircraft Noise

Parafield Airport operates 24 hours a day, 7 days a week, and is regarded as South Australia's premier general aviation airport and a world standard international pilot training airport. Noise is an unavoidable by-product of aircraft operations.

The Master Plan 2024 outlines current and future aircraft noise exposure of areas surrounding Parafield Airport and details the airport's approach to aircraft noise management.

Parafield Airport has a broad range of programs in place to manage aircraft noise around the airport, including working with aircraft operators to observe the Fly Friendly arrangements, engaging with the local community, working with all levels of government, consulting with pilot training schools and Airservices Australia, and investing in airport infrastructure that supports quieter aircraft and operating methods.

The most effective means for reducing the impact of aircraft noise is through effective planning of land use for areas adjacent to the airport. Other means include alternative runway allocations, adopted flight path procedures, restrictions of aircraft movements by aircraft type and aircraft operational procedures. The Australian Noise Exposure Forecast (ANEF) system is the aircraft noise exposure forecasting system currently adopted in Australia for land use planning. The ANEF provides a scientific measure of noise exposure from aircraft operations around an airport and is used to provide guidance on the siting and construction of various types of development around the airport.

A revised ANEF that considers the operations of Parafield Airport to 2043 has been prepared for Master Plan 2024.

Additionally, to inform the community of current and future noise exposure, Number-Above contours are prepared to identify the frequency of aircraft noise events above a specified decibel threshold. N60 contours are included in this Master Plan to show the number of average daily noise events above 60 decibels (dBA) caused by over-flying aircraft.

Looking After the Environment

Parafield Airport's philosophy is to operate and develop Parafield Airport in accordance with the principles of sustainable development, recognising that the success of the airport can be enhanced by conducting business in a way that is environmentally, socially and economically responsible.

Parafield Airport has developed the Environment Strategy in accordance with the *Airports Act 1996* (Airports Act) and the Airports (Environmental Protection) Regulations 1997 (AEPR). The Airports Act establishes an environmental management regime that focuses on a cooperative approach, supporting and ensuring compliance with environmental standards at federally-leased airports.

This Environment Strategy builds on Parafield Airport's recent environmental commitments and achievements as well as the previous Environmental Strategy that was approved in 2017. It covers ground-based environmental aspects associated with the operation of Parafield Airport for the next eight years, including:

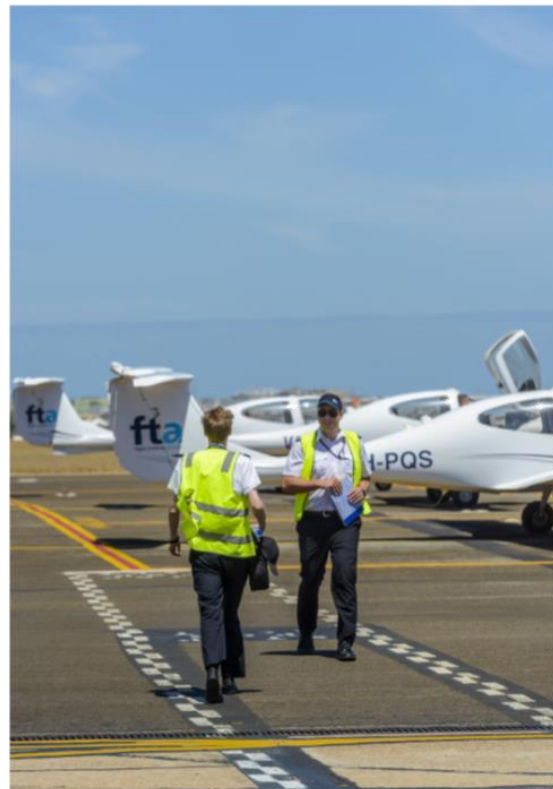
- Energy,
- Water resources,
- Stormwater and aquatic ecology,
- Soil and groundwater,
- Ground based noise,
- Local air quality,
- Waste, and
- Land and heritage management.

Parafield Airport is committed to the effective management of environmental impacts across the airport site. Central to Parafield Airport's environmental management is an Environmental Management System that conforms to the requirements of ISO 14001:2015 and provides a structure for planning, implementing, monitoring, reporting and reviewing environmental management at the airport.

Working Closely with the Community

Parafield Airport's approach to consultation is focused on creating robust, transparent and collaborative communications, using creative, innovative and engaging techniques to interact with the community.

This Master Plan 2024 has been developed in consultation with a wide range of stakeholders. Parafield Airport continues to engage with Commonwealth, State and local governments, aviation operators, airport tenants and the community through a range of techniques and forums.



PRELIMINARY DRAFT MASTER PLAN 2024 XVII

Abbreviations

ABBREVIATIONS	
AAA	Australian Airports Association
ABC	Airport Building Controller
AEO	Airport Environment Officer
AER	Airport Environment Report
AHD	Australian Height Datum
ARP	Aerodrome Reference Point
ANEC	Australian Noise Exposure Concept
ANEF	Australian Noise Exposure Forecast
ANEI	Australian Noise Exposure Index
CASA	Civil Aviation Safety Authority
CEMP	Construction Environmental Management Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Cth)
DITRDCA	Department of Infrastructure, Transport, Regional Development, Communications and the Arts (Cth)
DIT	Department for Infrastructure and Transport (SA)
DTI	Department for Trade and Investment (SA)
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environment Protection Authority (SA)
EVTOL	Electric Vertical Take-off and Landing
GIS	Geographic Information System
GSP	Global Positioning System
ICAO	International Civil Aviation Organization

ABBREVIATIONS	
ILS	Instrument Landing System
ISO 14000	A series of international, voluntary environmental management standards, guides and technical reports developed by the International Organization for Standardization (ISO)
MDP	Major Development Plan
MOS	Manual of Standards
MTOW	Maximum Take Off Weight
NASAG	National Airports Safeguarding Advisory Group
NPI	National Pollution Inventory
OLS	Obstacle Limitation Surface
PACC	Parafield Airport Consultative Committee
PAL	Parafield Airport Limited
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
PSA	Public Safety Area
PATWG	Parafield Airport Technical Working Group
SA	South Australia
SID	Standard Instrument Departure
SOP	Standard Operating Procedure
TFI	Tourism Futures International
VFR	Visual Flight Rules
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
VOR	VHF Omnidirectional Range

Glossary

GLOSSARY	
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.
Air Traffic Control	Air traffic control service provided by Airservices Australia.
Airport Emergency Plan	A plan developed by the Airport Operator to coordinate all agencies and their individual Airport Emergency Procedures, State or supporting area plans for dealing with an airport emergency.
Airport Operator	The airport operator is the person(s) or organisation whose name appears on the licence document and/or in Aeronautical Information Package En Route 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.
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	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 centralize 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 m ² , that offers retail clothing, sporting goods, and personal effects goods.
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.

GLOSSARY	
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 services to airport traffic.
Emergency Services Facility	Includes such services as ambulance station, fire station, police station, emergency rescue facilities, and other similar emergency services facilities.
Fixed Base Operation	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. A fixed base operation is a primary provider of support services for general aviation operators at a public-use airport.
General Aviation	Means all civil aviation operations other than regular public transport operations. This includes aerial work (such as agriculture, photography, surveying, search and rescue), instructional flying and recreational flying.
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	Conceptual (imaginary) surfaces associated with a runway, which identify the lower limits of the aerodrome airspace above which objects become obstacles to aircraft operations.
Renewable Energy Generation Facility	Includes wind turbines, field solar arrays, roof mounted solar panels and other renewable energy generation and storage facilities.
Remotely Piloted Aircraft Services	Facilities for the take-off, landing, storage and maintenance of unmanned aerial vehicles, commonly known as drones.
Research and Development	A building or facility used primarily for research, innovation and business development in science, technology and education.
Residential Accommodation	Premises or buildings associated with aviation education/training either as independent units or with shared common amenities and facilities.

XX PARAFIELD AIRPORT

GLOSSARY	
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.
Special Industry	<p>Means an industry where the processes carried on, the methods of manufacture adopted or the particular materials or goods used, produced or stored, are likely to:</p> <ul style="list-style-type: none"> • cause or create dust, fumes, vapours, smells or gases; or • discharge foul liquid or blood or other substance or impurities liable to become foul, <p>and thereby:</p> <ul style="list-style-type: none"> • endanger, injure or detrimentally affect the life, health or property of any person (other than any person employed or engaged in the industry); or • produce conditions which are, or may become, offensive or repugnant to the occupiers or users of land in the locality of or within the vicinity of the locality of the land on which (whether wholly or partly) the industry is conducted.
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.



PART A

About Parafield Airport

Section 1. Introducing the Parafield Airport Master Plan

Introduces the Master Plan 2024 including its purpose and the regulatory context.

Section 2. Parafield Airport Today

Provides details about Parafield Airport including its role, location, history, and development.

Section 3. Significance of the Airport

Highlights the economic and strategic significance of Parafield Airport through employment, business and the community.



Introducing the Parafield Airport Master Plan

1

1.1 Welcome to the Master Plan

Parafield Airport Limited (PAL) is pleased to share with you its plans for the next 20 years. The Parafield Airport Master Plan 2024 (Master Plan 2024) outlines the vision for the development of Parafield Airport to support aviation activities, commercial development, environmental management and infrastructure delivery.

The Master Plan 2024 includes a Development Program, Environment Strategy and Ground Transport Plan. It also provides an update of aviation forecasts and aircraft noise exposure.

By continuing to focus on sustainable outcomes, finding innovative solutions, short and longer-term planning and delivery of facilities, infrastructure, ground transport and utilities, Parafield Airport will continue to support and meet the needs of the general aviation industry and pilot training organisations. The Master Plan 2024 forms a comprehensive overview of the ongoing regulation of activities on the airport through consultation with key stakeholders, Commonwealth, state and local government, the aviation industry and local communities.

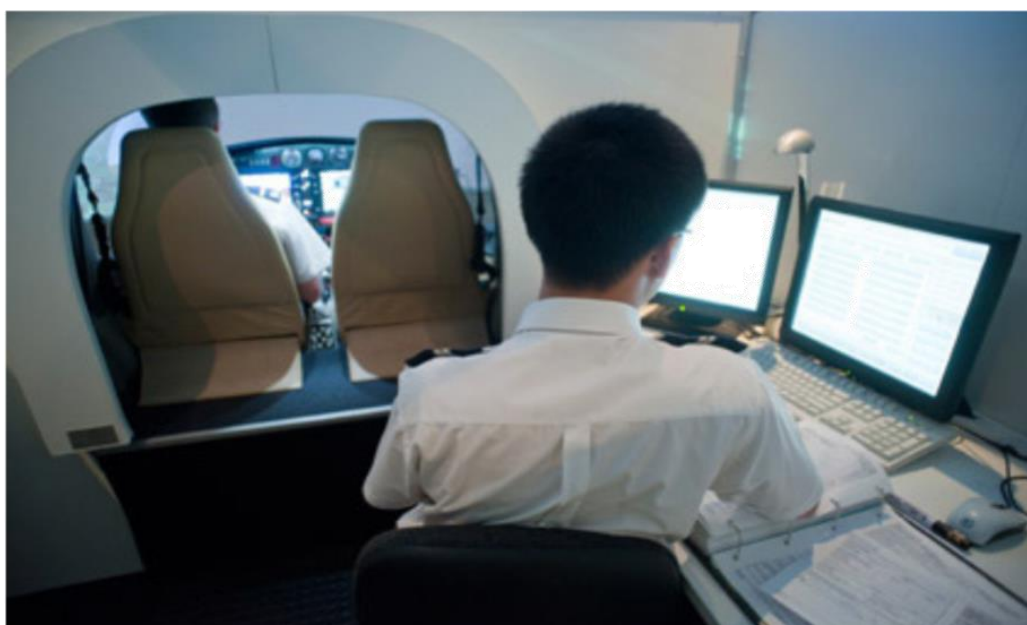
During 2022, Parafield Airport had approximately 4,200 aircraft movements every week, with the majority being pilot training flights.

Over 103 businesses operate from Parafield Airport, comprising pilot training and aviation support operations, as well as commercial businesses and retail hubs located within the commercial estate.

PAL is proud to present its Master Plan 2024 as the blueprint to continue developing and operating Parafield Airport as the major general aviation and pilot training airport in South Australia. The Master Plan 2024 builds on the Parafield Airport Master Plan 2017 which was approved by the Commonwealth Minister for Infrastructure and Transport on 19 January 2018. The Master Plan 2024 is developed through extensive stakeholder and community consultation, including a 60-business day public comment period.

This version is the Preliminary Draft Master Plan 2024, which has been prepared for public review and comment. PAL welcomes feedback on the plans for the future of Parafield Airport.

Feedback received will be considered by PAL and updates made to the Master Plan 2024 prior to being submitted to the Minister for Infrastructure, Transport, Regional Development, Communications and the Arts for consideration.



1.2 Purpose of the Master Plan

Parafield Airport is located on land owned by the Commonwealth and leased to Adelaide Airport Limited (AAL) to operate in accordance with the *Airports Act 1996* (Airports Act). PAL is a wholly owned subsidiary of AAL. The Department of Infrastructure, Transport, Regional Development, Communications and Arts (DITRDCA) is responsible for administering the Airports Act and associated regulations.

The Airports Act provides control over the following areas of operation at Parafield Airport:

- Land-use planning and development controls
- Building and construction approvals
- Environmental management.

As the operator of Parafield Airport, PAL is required to prepare a Master Plan in accordance with the Airports Act for approval by the Commonwealth government.

Under the provisions of the Airports Act, PAL must produce a final Master Plan that has been approved by the Minister for Infrastructure, Transport and Regional Development (the Minister) that:

- Establishes the strategic direction for efficient and economic development at the airport over the next 20 years
- Provides for the development of additional uses at Parafield Airport
- Indicates to the public the intended uses of the site
- Reduces potential conflicts between uses on-site, and to ensure that those uses are compatible with the areas surrounding the airport
- Ensures that all operations at the airport are undertaken in accordance with relevant environmental legislation and standards
- Establishes a framework for assessing compliance at the airport with relevant environmental legislation and standards, and
- Promotes the continual improvement of environmental management at the airport.

Since the privatisation of Parafield Airport in 1998, a Master Plan has been prepared and subsequently approved by the Commonwealth government in 1999, 2004, 2012 and 2017. Due to amendments to the Airports Act in 2018, following the approval of this Master Plan 2024 all subsequent master plans for Parafield Airport will be produced every eight years.

1.3 Contents of the Master Plan

The Master Plan 2024 has been prepared in accordance with the Airports Act and is the primary planning document for the next eight years. It also presents the long-term strategic plans for the 20-year period through to 2043.

The Master Plan 2024 is presented in four sections, which are outlined on the following pages.

PART A. About Parafield Airport

Section 1. Introducing the Parafield Airport Master Plan

Introduces the Master Plan 2024, including its purpose and the regulatory context.

Section 2. Parafield Airport Today

Provides details about Parafield Airport including its role, location, history, and development.

Section 3. Significance of the Airport

Highlights the economic and strategic significance of Parafield Airport through employment, business and the community.

PART B. How Parafield Airport is Planned

Section 4. Planning Framework

Provides the planning framework for Parafield Airport and the process required for preparing a master plan.

Section 5. Planning Development Approach

Provides a vision for Parafield Airport, outlining the development approach and objectives and further details how consultations with stakeholders and the community are delivered.

Section 6. Aviation Forecasts

Details the forecasts for aviation growth over the next 20 years. These forecasts allow Parafield Airport to consider how to respond to this growth while delivering on the vision.

PART C. The Plan for Parafield Airport

Section 7. Land Use Plan

Sets out the Land Use Plan for Parafield Airport, which is used to guide all on-airport development and is used to assess non-aviation development proposals.

Section 8. Aviation Development

Describes the Aviation Development Plan for the airfield.

Section 9. Commercial Development

Outlines the proposed airport commercial developments within the next eight years through to 2031 and the 20-year planning period through to 2043.

Section 10. Ground Transport

Outlines the Ground Transport Plan for Parafield Airport based on the infrastructure needed to cater for increased travel to the airport for general aviation, students, employees, freight and commercial vehicles. It sets out the actions required to address the forecast increases in vehicle trips to and within Parafield Airport.

Section 11. Services Infrastructure

Outlines the existing and future service infrastructure requirements for Parafield Airport.

Section 12. Safeguarding the Airport

Provides the measures required for safeguarding the ongoing operations and growth of Parafield Airport.

Section 13. Aircraft Noise

Outlines current and future aircraft noise exposure for areas surrounding Parafield Airport and details the approach to aircraft noise management.

Section 14. Environment Strategy

Outlines the Environment Strategy and the objectives for environmental management, the impacts of operations on the environment and Parafield Airport's approach to prevent, control and reduce environmental impacts.

PART D. Implementing the Plan

Section 15. Development Program

Provides details of future key developments covered by the Master Plan 2024, based on the vision, strategic objectives, anticipated aviation growth forecasts, commercial development opportunities, transport and access requirements and environmental commitments.

PART E. Supporting Material

Appendix A. Compliance with Airports Act 1996

Appendix B. ANEF Data Table



Parafield
Airport Today

2

2.1 Background

Parafield Airport is the major general aviation and pilot training airport in South Australia and is home to one of the largest pilot training schools in the Southern Hemisphere.

The airport site was originally farmland and was selected in the early 1920s, with the first aircraft operations commencing in 1927 and the airport officially opening in 1929. Parafield Airport has progressively developed to meet the growing aviation and pilot training needs of airlines throughout the world.

Parafield Airport Limited (PAL) is a wholly owned subsidiary of Adelaide Airport Limited (AAL) which purchased the operating leases for Adelaide and Parafield airports from the Commonwealth, in May 1998, to operate both airports for the next 50 years with an option for a further 49 years. The lease requires AAL to operate the site as an airport, as well as allowing for other developments to support the economic viability of the airport.

The first Master Plan for Parafield Airport was developed by the Federal Airports Corporation and was published in 1996. This is the fifth Master Plan prepared by PAL for Parafield Airport. It builds on the aeronautical requirements, environmental protections and land use development concepts developed in the previous master plans. The Master Plan 2024 focuses on the continued development of Parafield Airport as a significant economic driver for northern Adelaide. It conveys a clear indication of the future planning for precinct areas on the airport.

In 2022, Parafield Airport managed approximately 4,200 aircraft movements every week with the majority being student training flights. Situated near Adelaide Airport, and adjacent to a military airfield, Parafield Airport is internationally regarded for its suitability for pilot training qualifications requiring a high standard of performance.

The economic contribution of Parafield Airport in 2022 is estimated to be \$354 million towards the Gross State Product. It is estimated that in 2022, the businesses operating at the airport directly employed 1,249 people, both on and off the airport site.

Parafield Airport's proximity to the surrounding suburbs means that careful planning and consultation is required to ensure that the aviation considerations of the airport are protected, while also ensuring that operational requirements are balanced with the community's needs.

PAL is proud to take a strong leadership role in the community. As operator of one of the most significant business, training and employment precincts in the northern suburbs, PAL provides support where it will generate a lasting benefit. PAL assists the northern region through partnerships relating to the environment, community, business and tourism. PAL is proud to support sporting clubs, educational institutions, local council festivals, cultural programs and other local initiatives.

PAL encourages its aircraft operators to adopt the 'Fly Friendly' program, which seeks to manage the impact of aircraft operations on the surrounding community.

Snapshot of Parafield Airport 2022



Figure 2.1: Snapshot of Parafield Airport today

2.2 Airport Site

Parafield Airport is located in South Australia, 18 kilometres north of the Adelaide Central Business District (CBD) in the city's strategic northern growth sector. Parafield Airport enjoys the facilities that come with being one of the busiest general aviation and pilot training airports in Australia.

The airport occupies a site of approximately 433 hectares and is well connected to the CBD, surrounding suburbs and other major locations in the Adelaide metropolitan area and throughout the State (see Figure 2.2). The airport is bordered by Kings Road to the north, Main North Road to the east, Bennett Road drain to the south and the main northern rail line to the west.

The airport site is located within the local government area of the City of Salisbury. Figure 2.3 shows the boundaries of the local government areas surrounding the airport site.

Since the establishment of the airport site in the 1920s, urban uses in surrounding areas have increased in intensity. Parafield Airport is surrounded by a mix of open space, in the form of recreational and sporting facilities, military infrastructure, retail and commercial businesses, low and medium density residential areas, and light to heavy industrial complexes.

Parafield Airport is one of three airports within the Adelaide metropolitan area. Parafield Airport is located approximately 25 kilometres to the north of Adelaide Airport and is 10 kilometres to the south of the Royal Australian Air Force (RAAF) Base Edinburgh.

The Parafield Airport site is divided into five precincts, and each has a specific development intent. These precincts are shown in Figure 2.4 and comprise:

- Runways Precinct
- Airport Business Precinct
- Commercial Precinct
- Bennett Precinct
- Enterprise Precinct.



12 PARAFIELD AIRPORT

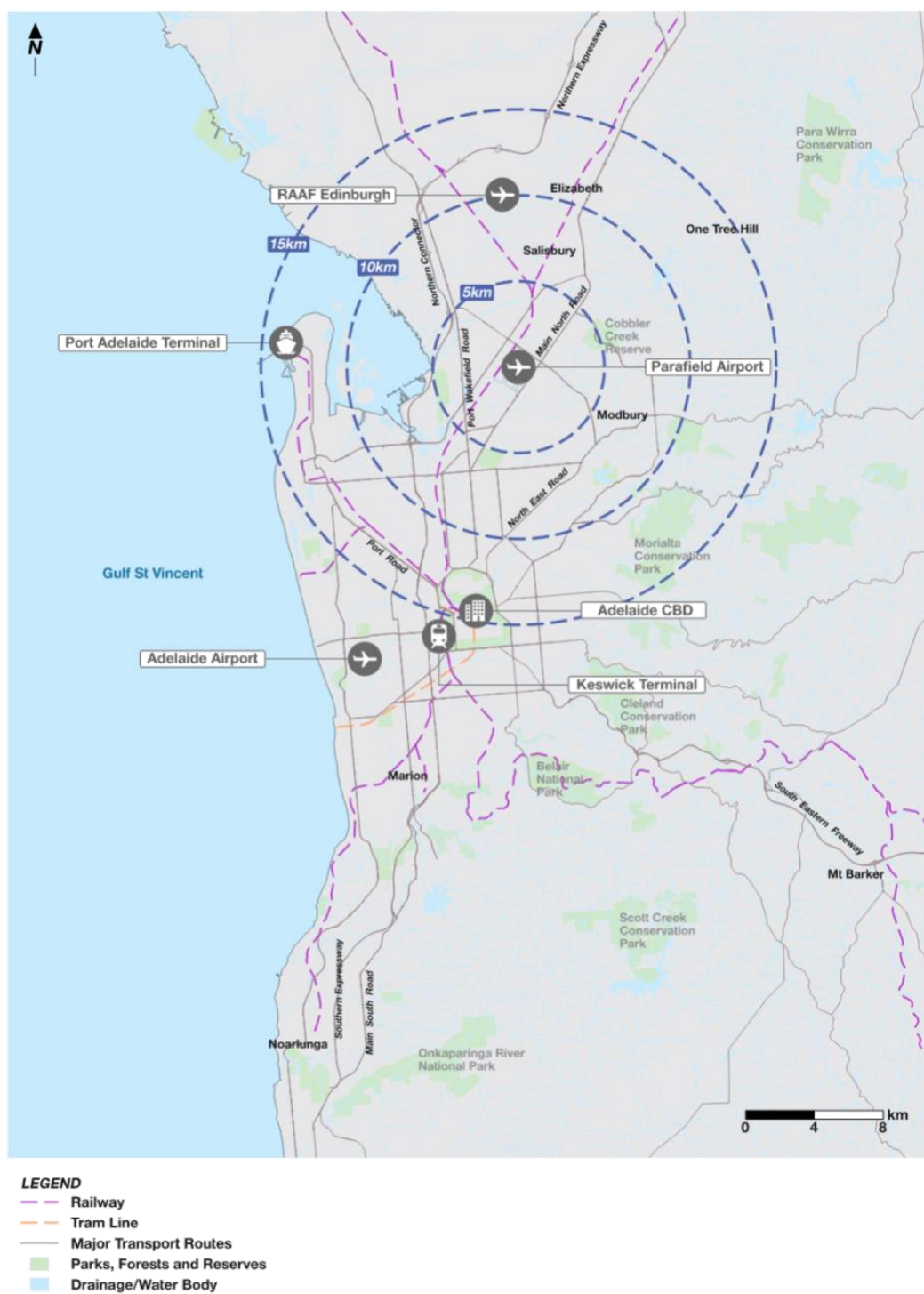


Figure 2.2: Location of Parafield Airport

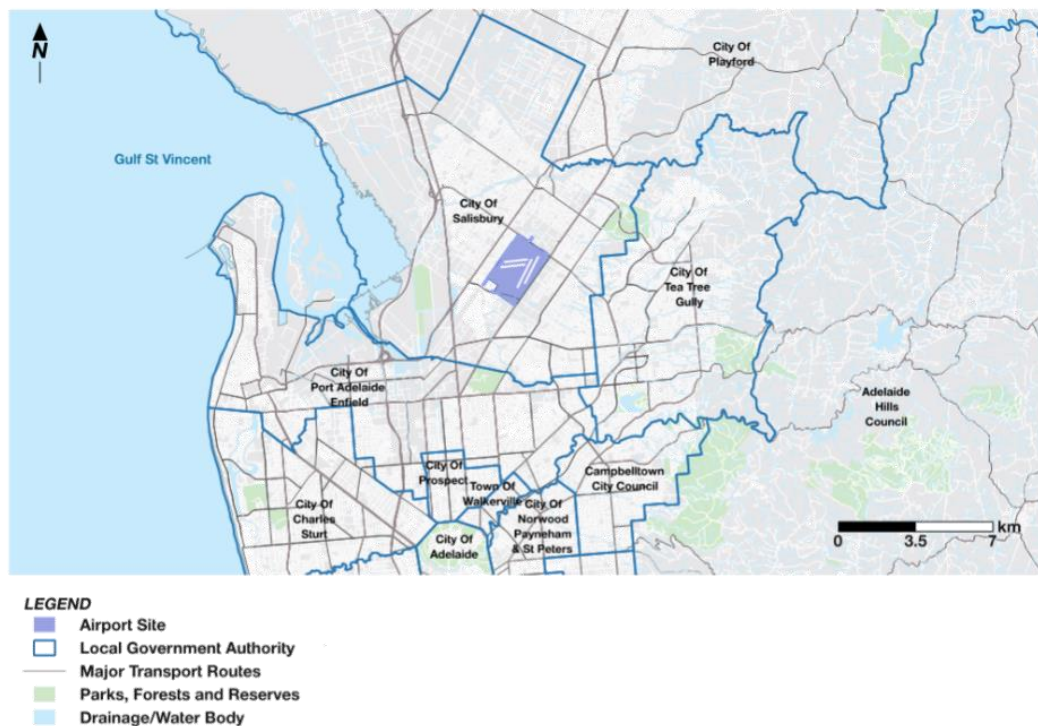


Figure 2.3: Local government areas around Parafield Airport



Figure 2.4: Parafield Airport precincts

2.3 Airport History

Ethnographic records point to a rich and varied history of occupation by the Kaurna people across the Adelaide region, which included a practical and cultural relationship with the ephemeral creeks, swamps and basins in and around the Parafield Airport site.

Since post-European settlement, Parafield Airport has had a rich history of aviation. It was first used in 1927 and was Adelaide's main airport until the opening of the current Adelaide Airport in 1955. Since its inception, Parafield Airport has also been used as a pilot training base as well as for recreational flying and aircraft maintenance.

2.3.1 Early Airport Development

In April 1927, the Commonwealth government purchased 320 acres of open farmland at Parafield to establish a permanent landing ground for Adelaide. On 1 October that same year, H. C. 'Horrie' Miller became the first pilot to land at the airport.

Flights began on 26 November 1927 by the Royal Aero Club of South Australia, which had built a hangar at Parafield and bought two aircraft for passenger and training purposes. Miller Aviation Company (which became MacRobertson Miller Airways soon afterwards) and Australian Aerial Services Ltd began operating from Parafield in 1928.

The Parafield aerodrome was officially opened on 5 August 1929 by the then Governor of South Australia, Sir Alexander Hore-Ruthven.

On 29 May 1929, two De Havilland Hercules aircraft, carrying 21 passengers, arrived at Parafield from Perth on the inaugural flight of the east-west service. On 1 October 1929, 16 aircraft landed at Parafield during the East-West Air Race from Sydney to Perth.

The Depression briefly slowed the growth of aviation, but the 1930s saw a steady proliferation of new airline companies and the expansion of others. Australian National Airways was formed in 1936 and operated routes to Perth, Melbourne, Sydney and Hobart as well as country centres in South Australia. In 1937, scheduled services to Darwin were introduced by Guinea Airways, and Ansett began its services between Parafield and Melbourne.

During World War II, the Department of Defence took over the running of Parafield Airport, with some passenger services still able to operate in a constrained manner. The activities of the Aero Club were suspended from July 1940 when the RAAF commandeered its premises and aircraft for the use of the No. 1 Elementary Flying Training School. All civilians were excluded from the aerodrome except

those employed by civil aviation and commercial aviation companies. The building of the Control Tower was completed in 1940.

Commencing in 1942, the Commonwealth government began acquiring land adjacent to the airport to cater for the increasing size of aircraft using the airfield and the growth in military traffic, and began formalising the road network.

At the end of World War II, the airfield plus numerous buildings were handed back to the Department of Civil Aviation and Parafield was returned to civil and commercial airline operations. By 1946 there were nine airline companies operating regular services within Australia, with ANA and Guinea Airways the main operators. By 1949, much of Parafield's wartime encampment had been sold off and removed from the airport site.

Parafield continued to operate as the only civil airport for Adelaide until the current Adelaide Airport was opened in February 1955. The major commercial airlines moved from Parafield to the new airport, and all remaining military aviation moved to the nearby RAAF Base Edinburgh which had opened in 1954.

The continued growth in general aviation activity since the mid-1950s has meant that Parafield has become a significant centre for recreational flying and pilot training, which is now its principal function.

Parafield Airport was a grassed field for its initial operations, with two cinder runways formed in 1949. In November 1968 a further 41 hectares of land was acquired by the Commonwealth for runway extensions, and the main runway was sealed for the first time in 1969. By the 1980s, Parafield Airport had three sets of parallel runways. These were mostly gravel runways and were hard to maintain, particularly as some of the land was prone to flooding. A decision was made to seal the gravel runways, but due to the cost not all runways could be sealed and two gravel runways were selected to be decommissioned in the early 1990s.

In 1982, the airframe workshop hangars were acquired by the Australian Aviation Company (now called Flight Training Adelaide) with the aim of training further commercial airline and helicopter pilots. The company adapted the former hangars and constructed additional accommodation for international students, classrooms and aircraft simulators.

Other contemporary buildings have been constructed at Parafield since the 1980s, including a new line of hangars on the western side of the airport. Other hangars were re-modelled, and a few relocated.



Aeroplanes at Parafield aerodrome which was officially opened in 1929 with passengers arriving on an inaugural flight from Perth. By the time of this photograph (1936 approx), Australian National Airways was formed to fly passengers from Parafield to Perth, Melbourne and Sydney as well as country centres in South Australia.

Picture Courtesy: State Library of South Australia



The Royal Aero Club, Parafield. A row of aircraft and their pilots lined up at Parafield Airfield in September 1938.

Source: State Library of South Australia



Aerial view 1989.

2.3.2 Privatisation

In the early 1980s the Commonwealth government began laying the foundation for the privatisation of its airports. The final stage of the program took place at midnight on 28 May 1998, when the operation and management of Adelaide and Parafield airports was transferred from the Commonwealth to AAL for 50 years, with an option of extending the lease for a further 49 years.

As a requirement of privatisation, PAL prepared its first master plan, Master Plan 1999, for public comment and Commonwealth approval. A subsequent Master Plan has been prepared and approved by the Commonwealth government in 2004, 2012 and 2017.

2.4 Achievements Since Master Plan 2017

Parafield Airport has continued to evolve and develop in line with the requirements and opportunities identified in the Parafield Airport Master Plan 2017.

Many of the developments outlined in the Master Plan 2017 have been realised. Recent developments include a mix of aeronautical and non-aeronautical facilities, such as the new ambulance station for SA Ambulance Service, site redevelopment and a new hangar for Aerotech, construction of the Parafield Service Centre which is anchored by Sydney Tools, RSEA Safety and KFC, relocation of the Rivergum Homes Display Centre, and repurposing the ex-Masters building for the HomeCo facility which includes Officeworks, Supercheap Auto, Tradezone and Tool Kit Depot. The Rivergum Homes Display site was relocated further south to its current location in 2019. In June 2021 construction commenced on the District Outlet Centre, which was completed in July 2023. These offerings add to the commercial ecology at the airport, attracting business investment and servicing the surrounding residential population.

The forecast growth and subsequent plans for aviation and airside facilities identified in the Master Plan 2017 have ensured that the airport facilities keep pace and continue to offer first class facilities for the aviation and flight training industry. Parafield Airport has continued to update facilities including planning for aviation-support facilities, and improved efficiencies of existing aircraft pavement areas. This includes a surface spray treatment of Runway 03R/21L, widening of Taxiway Sierra, and the expansion of the southern apron to provide additional aircraft parking.

The Parafield Aviation Heritage Centre was opened on 17 April 2018. Housed in the original clubrooms of the Royal Aero Club built in 1927, the Centre includes memorabilia and historical accounts from Parafield Airport and South Australia's early aviation pioneers. The Centre is a visitor attraction for the northern suburbs and an educational hub for school groups. Parafield Airport acknowledges the significant contribution of the aviation and heritage experts that provided their support to bring this project to fruition.



18 PARAFIELD AIRPORT

2.5 Airport Ownership

PAL is a wholly owned subsidiary of Adelaide Airport Limited, which purchased the operating leases for Adelaide and Parafield airports from the Commonwealth in May 1998, to operate both airports for the next 50 years with an option for a further 49 years.

The current shareholder equity of Adelaide and Parafield airports, as of December 2023, is shown in Figure 2.5. Superannuation funds make up nearly 84 per cent of the ownership. A key strategy of superannuation funds is investment in long-term infrastructure projects that provide a continuing inflow of funds, such as the continued development of Parafield Airport.

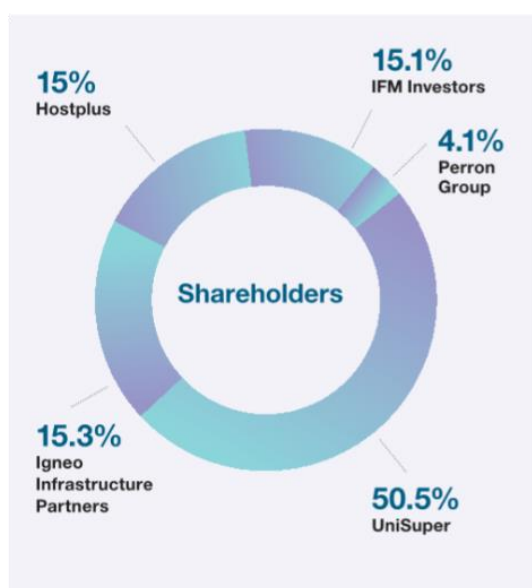


Figure 2.5: Current shareholder equity of Adelaide and Parafield airports

2.6 Facilities

Parafield Airport is a Certified Aerodrome which operates under the provisions of the Civil Aviation Safety Regulations 1998 Part 139 (Aerodromes). The airport has facilities to provide for pilot training, general aviation, charters and helicopter operations. The aviation-related facilities at Parafield Airport include:

- A four-runway system comprising the main (illuminated) runway 03L/21R (1350 meters in length), runway 03R/21L (1279 meters), runway 26L/08R (992 meters) and runway 26R/08L (958 meters) together with a sealed and unsealed taxiway system and associated aprons
- Aircraft parking for over 200 fixed-wing aircraft
- Two helipads and a dedicated helicopter parking area
- Aircraft maintenance hangars and offices for aviation operators, including pilot training schools
- Air Traffic Control tower
- Aviation fuel facilities
- Bureau of Meteorology automatic weather station
- Non-Directional Beacon navigation aid.

Current aviation infrastructure at Parafield Airport is shown in Figure 2.6.

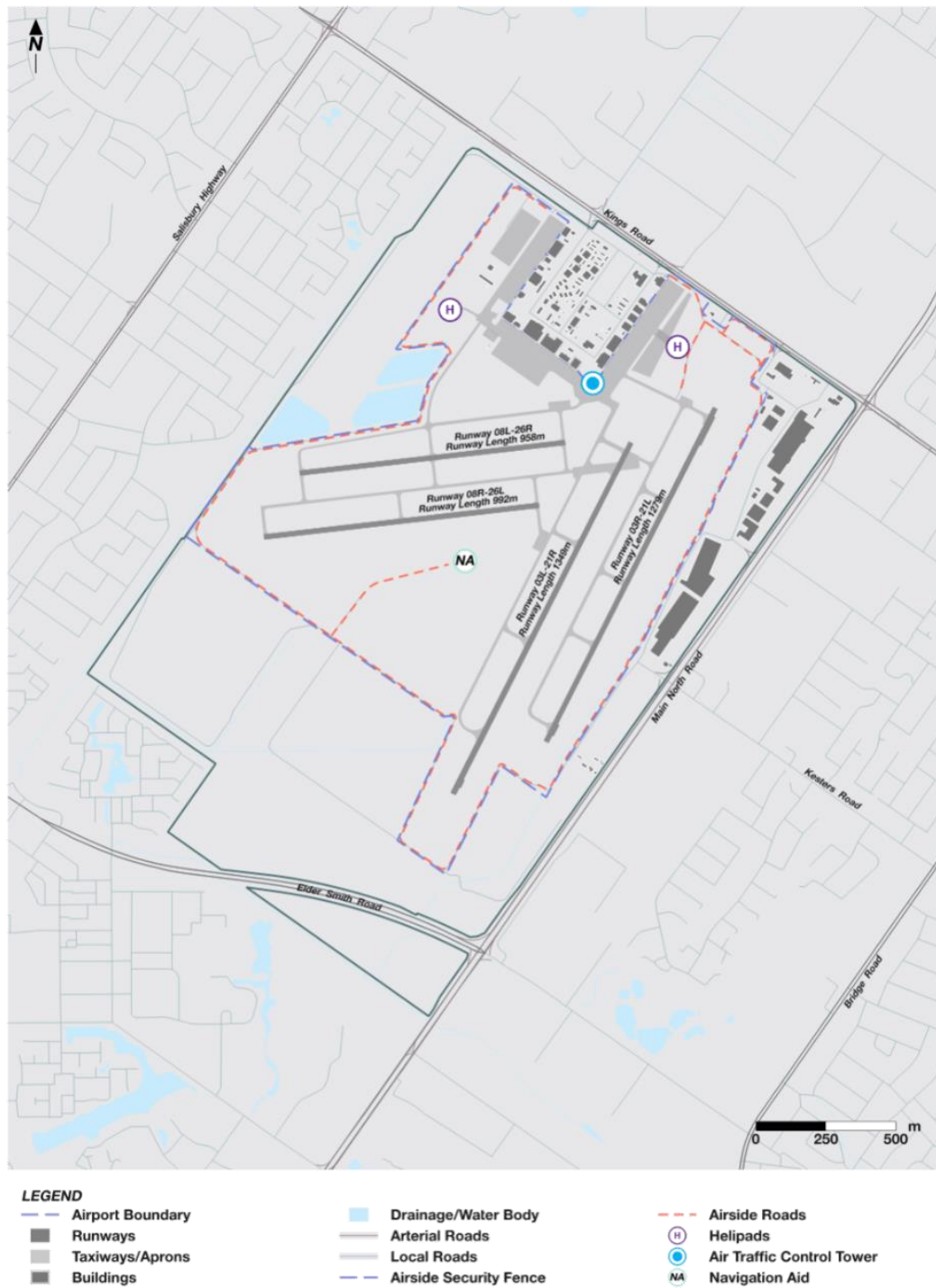


Figure 2.6: Layout of existing facilities at Parafield Airport

2.7 Airport Operations

Parafield Airport operates 24 hours a day, seven days a week, and is regarded as South Australia's premier general aviation airport and a world standard international training airport.

In 2019, prior to the COVID-19 pandemic, there was an average of 738 flights per day and 965 flights on a busy day. Approximately 93 per cent of these flights were related to pilot training activities. In 2022 there was an average of 600 flights per day and 831 flights on a busy day. The majority of flights occur between 9.00 am and 5.00 pm.

There is a range of other general aviation activities that occur, such as aerial agriculture, aerial photography, shark spotting patrols, firefighting support, adventure flights and charter services.

Parafield has a total of four runways, comprising two sets of parallel runways. During Air Traffic Control tower operating hours, Airservices air traffic controllers stipulate which runway direction is the operational runway. This is typically determined by the direction of the wind, as aircraft predominantly take off and land into the prevailing wind, but may also be influenced by operational or other requirements.

Circuit training, in both daylight and night-time hours, is a vital part of pilot training. Circuit training is repetitive touch-down and take-off operations in a circuit pattern that allows pilots to practice essential take-off, approach and landing procedures. Pilot training activity is also undertaken in an area of airspace referred to as the Western Training Area D220, which is over a sparsely populated area north of St Kilda.

The parallel runway systems enable two circuits to operate at once. Due to different operating speeds, twin-engine aircraft will often be separated from the slower single-engine aircraft. When the main runways (03R/21L and 03L/21R, oriented approximately north to south) are in use, twin-engine aircraft will generally operate to the west of the airport and single-engine aircraft will operate to the east. When the secondary runways (08R/26L and 08L/26R, oriented approximately east to west) are in use, twin-engine aircraft will generally operate to the north of the airport and single-engine aircraft will generally operate to the south. There is only one runway (main runway 03L/21R) that is equipped with runway lighting, requiring all aircraft to use the circuit to the west of the airport in night-time conditions. The flight paths for operations at Parafield Airport are shown in Section 13.

The Civil Aviation Regulations 1988 require pilots to maintain a safe altitude at all times. The altitude of aircraft in the Parafield circuit is typically around 1,000 feet (304 metres), except during landing or taking off or unless otherwise directed by Air Traffic Control. Helicopters will generally fly at 800 feet (243 metres) to maintain safe separation from fixed-wing aircraft. These altitudes ensure that aircraft can operate in airspace that is clear of all obstacles. Helicopter manoeuvring training occurs at low level in the south/west area within the airport perimeter.

Parafield Airport introduced its 'Fly Friendly' program in 2012 to manage the impact of training operations on the surrounding community. Aircraft operators are encouraged to adopt the Fly Friendly program when conducting training activities. When safe to do so and/or under direction of Air Traffic Control, the main objectives of the Fly Friendly program are for pilots to:

- **Climb to operating height as soon as possible**
- **Maintain operating height**
- **Reduce engine power as soon as possible**
- **Follow the promulgated flight paths**
- **Avoid residential areas if and where practicable**
- **Do not fly wide circuits - keep as narrow as possible**
- **Utilise low-powered descent approaches from training area to reduce aircraft noise exposure.**

As part of the Fly Friendly program, circuit training is restricted to 7.00 am to 11.00 pm Monday to Friday, 7.00 am to 9.00 pm on Saturday, and 8.30 am to 9.00 pm on Sunday. Circuit training is not permitted on Christmas Day or New Year's Day, or before 0900 on Anzac Day. The Fly Friendly program is periodically reviewed by the Parafield Airport Technical Working Group (see Section 13).

2.8 Relationship to Other Airports

A number of other airports catering for the general aviation industry are currently operating within close proximity to Parafield.

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. It is located 18 kilometres to the south of Parafield Airport.

RAAF Base Edinburgh is a Commonwealth Defence facility located 10 kilometres north of Parafield Airport. It is home to No 92 Wing's AP-3C Orion maritime patrol aircraft that conduct surveillance operations throughout Australia's airspace.

Gawler Airfield is approximately 23 kilometres north of Parafield and is predominantly used as a flying and training aerodrome for glider and light sports aircraft operations.

Murray Bridge Aerodrome is approximately 62 kilometres east of Parafield. It has a cross-runway configuration with associated taxiways and apron parking areas. A number of units and small hangars exist with some maintenance activity. There is a flying school situated at the aerodrome.

Aldinga Airfield is approximately 56 kilometres south of Parafield Airport. It has a cross-runway configuration, with associated taxiways and aircraft parking areas. There is a flying school located at the aerodrome and some aircraft maintenance facilities. Flight curfews and some operational restrictions apply. The main activities include flying training and joy flights.

Goolwa Airport is approximately 77 kilometres south of Parafield. It has a sealed runway with a natural-surface short cross strip, sealed taxiway and apron facility. There is a flying school located at the aerodrome. The main activities include flying training and joy flights.



Figure 2.7: Airports located close to Parafield Airport



Significance of the Airport

3

3.1 Introduction

Parafield Airport is used predominantly for general aviation with over 90 per cent of aircraft movements being for pilot training purposes. Strategically, Parafield Airport is exceptionally well located being 18 kilometres from the Adelaide Central Business District and at the centre of a growth area for both industrial and residential development. Core activities include:

- General aviation
- Pilot and aviation training
- Maintenance services
- Commercial, retail and industrial estates.

Parafield Airport plays an essential role in economic prosperity through creating jobs and supporting business in the northern suburbs and beyond.

Parafield Airport plays an essential role in the economic prosperity and development of Northern Adelaide and South Australia through creating jobs and supporting businesses.



Employment 2022

- Over 1,249 direct and indirect jobs (970 on site and 279 off-site)
- Additional 1,321 supporting jobs (induced employment)



Economic Contribution

- \$354.8 million to the South Australian economy
- 0.3% Gross State Product

Figure 3.1: Snapshot of Parafield Airport's economic contribution

3.2 Economic Contribution

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

Parafield Airport contributed an estimated \$354.8 million to the South Australian economy in 2022, equivalent to 0.3 per cent of Gross State Product. This is similar to 0.26 per cent estimated in 2016, reflecting a consistent contribution to growing Gross State Product.

It is estimated that in 2022 the Parafield Airport estate directly employed 1,249 people both on and off airport. This employment level supports a gross operating surplus of \$41.8 million, giving a total contribution to Gross State Product directly of \$150 million.

There is an induced (or multiplier) contribution through the direct and indirect employees spending their incomes on consumer goods and services. In total, and including the induced effect, the full economic contribution associated with the operations of Parafield Airport in 2022 are estimated to be:

- In the Northern Adelaide Region, support for 1,670 jobs, and a contribution to Gross Regional Product of \$216.9 million
- For South Australia, support for 2,570 jobs, and a contribution to Gross State Product of \$354.8 million.

Table 3-1 below outlines the economic assessment for Parafield Airport in 2022.

IMPACT	2022
Direct Employment On-Airport	970
Direct Employment Off-Airport	279
Total Direct	1,249
Induced Airport Employment	1,321
Total Airport Employment	2,570
Total Value Added \$M	354.8

*Table 3-1: Economic Contribution of Parafield Airport – 2022
Source: Hudson Howell*

While the impact of the COVID-19 pandemic has been evident, the growth of the induced employment since 2016 is primarily due to the structure of industry sectors, largely in the airport's Commercial Precinct, which have flow through impacts to the economy.

Parafield Airport is located in the Northern Region of Adelaide, within the local government area of the City of Salisbury and in close proximity to the City of Playford, City of Tea Tree Gully and City of Port Adelaide Enfield local government areas. The airport plays a significant economic and employment role within this region. Gross State Product and Gross Regional Product for the four councils in 2022 is estimated to be \$128.6 billion and \$27.2 billion respectively based on an economic model for the State and for the Northern Region.

Parafield Airport currently has 103 businesses operating at the airport. Going forward, the airport will continue to develop as a significant economic generator to Northern Adelaide and South Australia.

Taking into consideration the developments outlined in this Master Plan 2024 for the next eight years, it is anticipated that by 2031 the airport will contribute approximately \$467 million annually to the South Australian economy and 3,627 full-time equivalent jobs, including 1,764 direct on- and off-airport employees.

Recognising the proposed developments over the 20-year planning period, it is forecast that by 2043 Parafield Airport's economic contribution will be approximately \$740 million to Gross State Product, with an estimated 3,342 direct full-time jobs and 6,878 total jobs.

Table 3-2 provides a comparison of the current and forecast employment generated by Parafield Airport. Figure 3.2 depicts the historical and forecast total employment (direct and indirect) for the airport between 2008 and 2043.

	2022	2031	2043
Direct On-Airport Employment	970	1,371	2,805
Direct Off-Airport Employment	279	393	537
Induced Airport Employment	1,321	1,864	3,536
Total Airport Employment (Direct and Induced)	2,570	3,627	6,878

*Table 3-2: Forecast Employment Growth
Source: Hudson Howell*

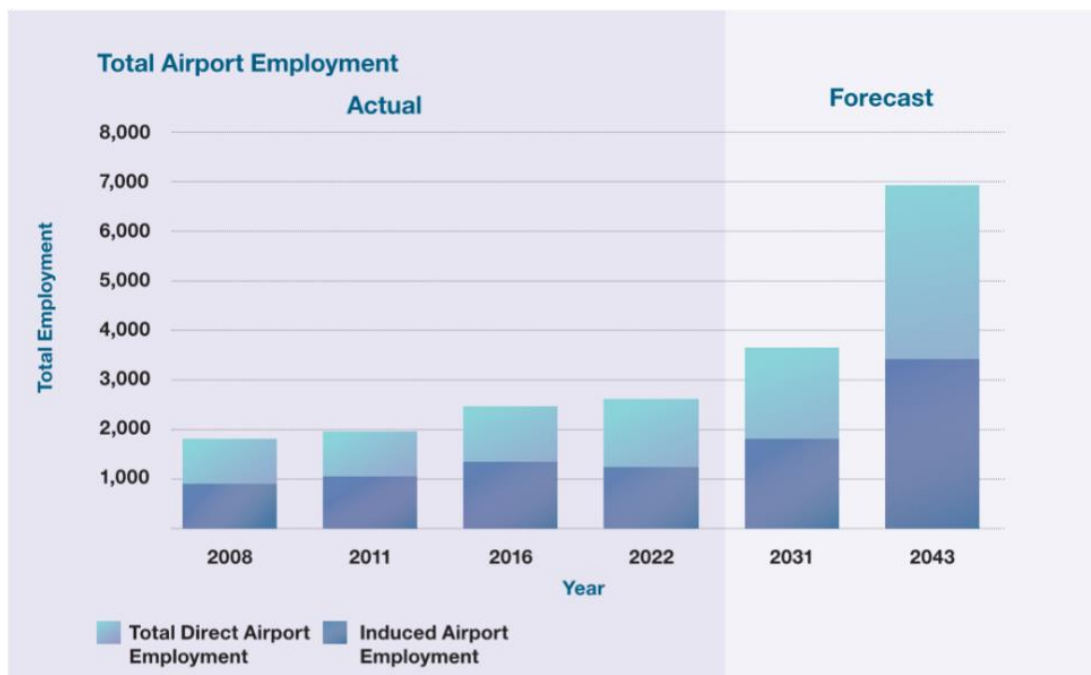


Figure 3.2: Actual and expected case forecast totalemployment 2008 – 2043: Source: Hudson Howell.

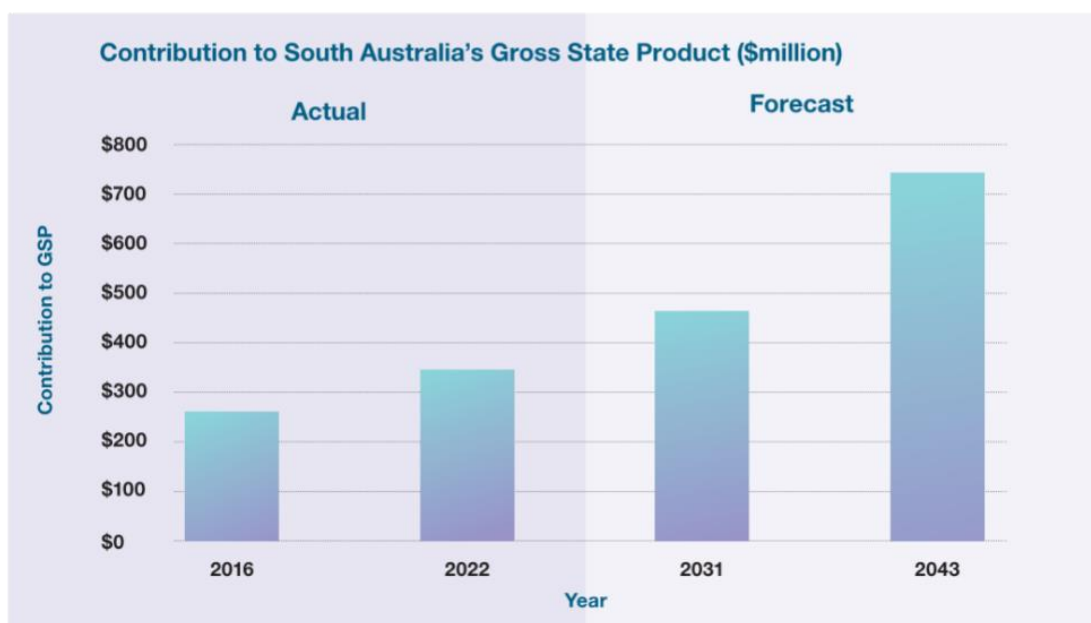


Figure 3.3: Parafield Airport's contribution to Gross State Product 2016 – 2043: Source: Hudson Howell.

The historical and forecast contribution of Parafield Airport to South Australia's Gross State Product (direct and indirect) from 2016 to 2043 is shown in Figure 3.3.

The Parafield Airport site has five precincts: the Airport Business Precinct, Commercial Precinct, Enterprise Precinct, Runways Precinct and Bennett Precinct (see Section 7). Most employees are based in the Commercial and the Airport Business precincts, which generated 1,249 full-time equivalent jobs in 2022. With the anticipated developments detailed in this Master Plan 2024, employment is expected to grow to almost 1,763 in 2031 and 3,342 full-time equivalent positions by 2043. The current and forecast employment for each precinct is shown in Table 3-3.

PRECINCT ESTIMATES – EXPECTED JOBS (Full-Time Equivalent)			
	2022	2031	2043
Airport Business Precinct	622	786	1,340
Commercial Precinct	627	727	752
Enterprise Precinct	0	250	1,250
Total Direct Jobs	1,249	1,763	3,342
Induced Jobs	1,321	1,864	3,535
Total	2,570	3,627	6,878

Table 3-3: Parafield Airport current and forecast total employment 2022 to 2043 per precinct
Source: Hudson Howell

The international student pilots at Parafield Airport generate additional export revenue benefits, as well as relationship and reputation benefits for South Australia from supporting the training needs of major international airlines.

3.2.1 Economic impact of the COVID-19 Pandemic

The impact of the COVID-19 pandemic on the aviation industry has been significant. Due to the Australian and South Australian border closures and lengthy lockdown periods, many businesses at Parafield Airport reduced their operations. Some of the cost saving measures implemented by businesses at the airport during this time included reduced trading days, reduced part-time staff hours, implementing business operations efficiency improvements, and not operating aircraft to save operating costs (such as fuel and maintenance). In financial year 2021/2022, when South Australia was experiencing regular lockdowns and travel restrictions, Parafield Airport recorded its lowest volume of aircraft movements since 2003. This is discussed further in Section 6.

A survey was conducted of 47 businesses located at Parafield Airport that represent 80 per cent of the total on-site employment in 2022. Based on this survey, the economic activity lost at Parafield Airport in 2020 and 2021 as a result of the COVID-19 pandemic is estimated to be:

- 107.5 direct full-time equivalent jobs and 221.2 induced jobs were lost, which is equivalent to 8.6 per cent of total employment at the airport
- Contribution to the GSP was reduced by \$12.91 million per annum, or \$30.54 million per annum for total induced GSP
- \$14 million in direct investment (including business expansion, major equipment investment or building construction) was deferred or lost, resulting in a further 45 direct jobs (or 92.6 induced jobs) and \$33.12 million in total induced GSP that was lost
- The combined impact of reduced business operations and deferred or lost direct investment is a total of 313.8 full-time equivalent jobs lost and a reduction of \$47.1 million per annum in total GSP.

By December 2022, 90 of the 107.5 direct jobs lost during the COVID-19 pandemic had been recovered by businesses operating at Parafield Airport. Labour and skills shortages were key reasons for some businesses not being back to pre-COVID employment levels. Consistent with the national and South Australian trend for employees continuing to work from home, an estimated 40 direct employees had transitioned to permanently working from home.

3.3 Social and Community

The community – which includes those people living around the airport, users of the airport, business partners, local government, customers attending businesses on the airport site, stakeholders and employees - have unique demographics, needs, wants and expectations.

Since its inception in 1998, Parafield Airport Limited (PAL) has prided itself on being an active community stakeholder and responsive corporate citizen, listening to and working with airport neighbours to better understand, empathise with and act on issues of concern. A Community Engagement Framework was developed for Parafield Airport in 2020 which takes a proactive, 'open door' approach. This is a vital component of PAL's strategy and is pursued through a wide variety of activities, such as facilitating the Parafield Airport Consultative Committee and Planning Coordination Forum, and attending and speaking at numerous stakeholder, service group and community forums.

Parafield Airport continues to be one of the most significant business, training and employment precincts in the northern suburbs of Adelaide and supports the surrounding northern suburbs through partnerships across environment, community, business and tourism.

Direct investment into the local community has been an ongoing feature of PAL's approach. PAL has a social investment program that supports charities, community events and other not-for-profit organisations forming partnerships across various sectors including aviation, business and community development. Key recent contributions and support include:

- Establishment of the Parafield Aviation Heritage Centre as a community space, staffed by volunteers and designed to celebrate the airport's rich aviation and local history
- Support for the North City Panthers Soccer Club, which uses the airport's community oval as its training and home ground and is provided with a club room
- Key supporter of the Northern Business Breakfast delivered by the Rotary Club of Salisbury and Rotary Club of Elizabeth
- Support for not-for-profit entities located at the airport, including the Australian Air League, the SA Marine Corps (incorporating Air Youth of SA Inc.) and the Rotary Club of Salisbury – All Sorts Op Shop located in the Airport Business Precinct
- Financial and in-kind support for a range of charitable organisations including Youth Opportunities Australia Inc., Foodbank SA and Dress for Success

- Support for the Classic Jets Fighter Museum, which is a non-profit organisation that is staffed by volunteers dedicated to the restoration of military aircraft and history
- The PAL Pilot Scholarship program, which has supported two local northern Adelaide students to obtain their Commercial Pilot Licence (the Scholarship was suspended in 2021 due to the COVID pandemic, and an alternate skills-based aviation traineeship program is being introduced in 2024)
- A Men's Shed, which incorporates a meeting place and workshop for community use and assists to advance the health and wellbeing of men in the local community
- Providing access to dedicated hangar space to allow for the safe transfer of COVID-19 positive patients from remote areas during the COVID-19 pandemic
- Working with the South Australian Government to facilitate the construction of a new \$5 million Northern Ambulance Station at Parafield Airport. The new facility includes garaging for fourteen ambulances and four light fleet vehicles, and provides optimal ambulance response times for the surrounding areas
- The South Australian Government's shark patrol service for Adelaide's metropolitan beaches during the summer season is conducted by Hartwig Air fixed-wing aircraft from their base at Parafield Airport. The patrol covers the metropolitan beaches from Outer Harbour and tracks South to Aldinga, Myponga and Rapid Bay, Victor Harbour and along the coast up to the Murray River Mouth
- Provision of a land lease for child-care facilities to be constructed in the Airport Business Precinct to support employees at the airport and the surrounding community
- Providing airport tours to organisations such as The Smith Family, a non-profit children's charity that creates opportunities for disadvantaged children and their families, and Thomas More College to introduce students to careers in aviation
- Working with organisations such as Para Hills High School Disability Unit, Campbelltown Home Support Group, Life Care, Prospect Community Support and various retiree and senior citizen groups to provide tours of the Parafield Aviation Heritage Centre and the Classic Jets Museum
- Sharing aviation related information and news of community events on the Parafield Airport facebook page.



How Parafield Airport is Planned

B

PART B

How Parafield Airport is Planned

Section 4. Planning Framework

Provides the planning framework for Parafield Airport and the process required for preparing a master plan.

Section 5. Planning Development Approach

Provides a vision for Parafield Airport, outlining the development approach and objectives and further details how consultations with stakeholders and the community are delivered.

Section 6. Aviation Forecasts

Details the forecasts for aviation growth over the next 20 years. These forecasts allow Parafield Airport to consider how to respond to this growth while delivering on the vision.



Planning Framework

4

4.1 Introduction

Land use and infrastructure decisions made both on and off the airport site can impact the ability of Parafield Airport Limited (PAL) to maintain and provide facilities which meet the capacity and regulatory expectations that come with operations at a busy general aviation and pilot training airport.

Planning for activities occurring on airport land is governed by Commonwealth legislation, with various strategic documents at the state and local government level influencing the current arrangements and future development of Parafield Airport. The Parafield Airport Master Plan 2024 has been prepared within the context of these inputs.

4.2 Commonwealth Policy and Legislative Framework

4.2.1 Airports Act 1996

The *Airports Act 1996* (Airports Act) and its subordinate regulations are the principal legislative instruments regulating the ownership, management and operation of leased federal airports. Parts 5 and 6 of the Airports Act prescribe the obligations placed on an airport-lessee company over land use planning, development control and environmental management at airports. The key controls required under the Airports Act for these purposes include:

- An airport master plan (this document)
- A major development plan (MDP) for any major airport development
- Building activity approvals.

4.2.1.1 Airport Master Plan

Section 70 of the Airports Act requires each leased federal airport to prepare a final master plan. The master plan must be approved by the relevant Commonwealth Minister and all subsequent development at the airport must be consistent with this plan. Prior to submission of a master plan to the Minister, the airport-lessee company is required to consider all written feedback received during a 60-business day public consultation period.

Amendments to the Airports Act in 2018 now require a new master plan to be prepared for Parafield Airport every eight years instead of every five years.

When approved by the Minister, this Master Plan 2024 replaces the Parafield Airport Master Plan 2017.

The purposes of a master plan are to:

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

Section 71 of the Airports Act specifies the matters that must be set out in a master plan, including providing details of:

- Development objectives for the airport
- Assessment of the future needs of civil aviation and other users of the airport for services and facilities
- Future land use and related development of the airport site, including the effect of the proposed developments on employment levels and the local and regional economy
- Proposed developments within the first eight years of the planning period and the effect of these developments on employment and the economy
- An Australian Noise Exposure Forecast (ANEF), and plans for managing aircraft noise intrusion in areas of significant ANEF levels
- Flight paths at the airport
- Environmental issues and their management
- A ground transport plan for the airport
- An environment strategy.

A detailed breakdown of the Airports Act requirements for an airport master plan and how this Master Plan addresses these requirements is included in Appendix A.

An overview of the master planning process is illustrated in Figure 4-1.

A key element of the master planning process is input gathered through extensive stakeholder and community consultation. During the preparation process, consultation occurs with Commonwealth, state and local governments, aviation operators, airport tenants, and the community. A Preliminary Draft Master Plan is released for a public consultation period of 60 business days and stakeholders and the community are invited to provide feedback.

Where possible, the concerns and issues raised during the consultation period are incorporated into the Draft Master Plan that is presented to the Commonwealth Minister for consideration as part of the approval process. In line with Section 81 of the Airports Act, when deciding whether to approve or refuse the Draft Master Plan, the Minister considers:

- The extent to which the master plan meets the present and the future requirements of civil aviation users of the airport, and other users of services and facilities of the airport
- The likely effect on the use of the land within both the airport site and those areas surrounding the airport
- The consultations undertaken in preparing the master plan and the outcome of the consultations
- The views of the Civil Aviation Safety Authority and Airservices Australia regarding the safety and operational aspects of the master plan.

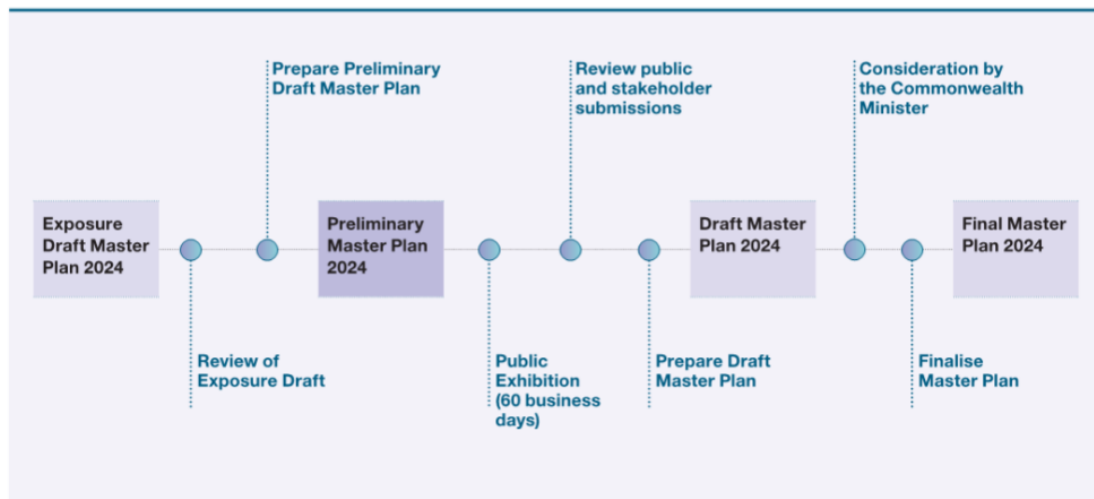


Figure 4.1: The master planning process

4.2.1.2 Major Development Plan

Approval of the master plan by the Commonwealth Minister does not result in automatic approval for development to occur on the airport site.

Sections 90 and 91 of the Airports Act require a major development plan (MDP) to be prepared and approved by the relevant Commonwealth Minister prior to the commencement of development classified as 'major development'. Such developments must be consistent with the approved master plan and include activities such as construction of a new runway or runway extension, construction of new buildings where the cost of construction exceeds a certain value, and development that is likely to have a significant environmental impact or a significant impact on the local or regional community.

The Airports Act requires the Minister to consider a MDP following a public consultation period of 60 business days. In addition, Section 160 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires advice to be sought from the Commonwealth Minister for the Environment prior to the adoption or implementation of a MDP.

4.2.1.3 Building Activity Approvals

The Airports Act and Airports (Building Control) Regulations 1996 require building activity approvals to be obtained from the Airport Building Controller (ABC), with advice from the Airport Environment Officer (AEO). Both positions are appointed by the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) and are independent of PAL.

Separately, PAL approval is required before any approval is granted by the ABC. In considering its consent, PAL must ensure that the proposal is consistent with the approved master plan, associated environment strategy, and, where applicable, a MDP. PAL will assess the impact of any proposed activity on airport infrastructure, operations and environmental controls.

4.2.2 Other Regulatory Frameworks

Although the Airports Act is the primary legislation guiding airport planning, land use and development control at Parafield Airport, there are a range of other Acts and legislative instruments that are applicable and must be considered. These include:

- Airports Regulations 1997
- Airports (Building Control) Regulations 1996

- Airports (Control of On-Airport Activities) Regulations 1997
- Airports (Environmental Protection) Regulations 1997
- Airports (Protection of Airspace) Regulations 1996
- *Airspace Act 2007*
- *Aviation Transport Security Act 2004*
- Aviation Transport Security Regulations 2005
- *Civil Aviation Act 1988*
- Civil Aviation Regulations 1988
- Civil Aviation Safety Regulations 1998
- Environment Protection and Biodiversity Conservation Act 1999
- Environment Protection and Biodiversity Conservation Regulations 2000.

A number of these regulations are scheduled to 'sunset' (which means the automatic repeal of a legislative instrument) in April 2024 and 2025 respectively. The Commonwealth government has commenced a process to review these legislative instruments to ensure that they remain fit-for-purpose and up-to-date, with corresponding amendments and updates to be finalised by the Commonwealth government before the sunset dates.

4.2.3 National Airports Safeguarding Framework

The Commonwealth government recognises that the current and future viability, growth and safety of aviation operations at airports can be impacted by inappropriate development occurring in areas beyond the airport boundary.

The National Airports Safeguarding Framework was developed in 2012 by the National Airports Safeguarding Advisory Group, which included representatives from Commonwealth infrastructure and defence departments and aviation agencies, state and territory planning and transport departments, and the Australian Local Government Association. This framework aims to safeguard airports and communities in their vicinity, and to develop, with state, territory and local governments, a national land use planning regime.

Section 12 describes how Parafield Airport implements the safeguarding guidance in its planning.

4.2.4 General Aviation Policy Enhancements

4.2.4.1 General Aviation Advisory Network

The Commonwealth government established the General Aviation Advisory Network (GAAN) in 2016 to provide advice to the Minister for Infrastructure and Transport on matters affecting the general aviation sector. The GAAN also operates as a forum where industry representatives can identify opportunities to work collaboratively to respond to pressures, trends and issues facing the general aviation sector.

In December 2020, the GAAN published its strategic paper titled 'New Strategy for the Australian General Aviation Sector'. This Strategy establishes eight initiatives for government consideration, including the provision of airport infrastructure and access to airport facilities that are suited to the diverse needs of an emerging and growing general aviation sector, and facilitating the early adoption of technology and support processes that encourage innovation and technology development.

The Master Plan 2024 is consistent with GAAN's new strategy for the general aviation sector as the plans for Parafield Airport continue to focus on providing suitable airport infrastructure that meets the needs of the general aviation operators and preparing for the emergence of new technologies such as electric aircraft (discussed in Section 8).

4.2.4.2 CASA General Aviation Workplan 2022

The Civil Aviation Safety Authority (CASA) is a government body that regulates aviation safety in Australia. It is responsible for licensing pilots, registering aircraft, and overseeing aviation safety. In May 2022, CASA released its General Aviation Workplan. This document sets out the framework CASA is implementing to optimise the regulatory framework for the general aviation sector, including improving pilot licencing rules, streamlining the arrangements for ensuring aircraft are airworthy and properly maintained, and facilitating greater operational opportunities for sport and recreational activities when safe to do so.

PAL is supportive of measures that improve regulatory requirements for general aviation operators and supporting aviation businesses. The plans outlined in this Master Plan 2024 will ensure that Parafield Airport continues to develop as the major general aviation and pilot training airport for South Australia.

4.2.5 Aviation White Paper

The Commonwealth government has commenced a White Paper process, targeted at setting long-term policy directions for the promotion of an efficient, safe, sustainable and competitive aviation sector over the period to 2050, including airport development planning processes.

The White Paper will examine issues across the aviation sector, including four specific areas identified by the Government:

- How to maximise the aviation sector's contribution to achieving net zero carbon emissions, including through sustainable aviation fuel and emerging technologies
- The economic reforms needed to improve productivity across the sector, including addressing skills shortages, competition between airports and airlines, and charting a course out of the pandemic
- How to support and regenerate Australia's general aviation sector
- Better mechanisms for consultation on and management of issues like aircraft noise, airport development planning and changing security requirements.

In September 2023, the first stage of the process commenced with the release of the *Aviation Green Paper – Towards 2050*. The Green Paper presents policy options and ideas and seeks detailed stakeholder and public feedback on the issues and potential solutions. Following consultation, the White Paper will be prepared to identify the policy proposal or proposed amendments to legislation.

The Master Plan 2024 is consistent with the specific areas identified for the White Paper as PAL continues to support Australia's general aviation sector through ensuring appropriate short and long-term planning and delivery of facilities that meet the needs of the general aviation and pilot training operators.

4.3 State and Greater Adelaide Context

State land use planning legislation and policy do not apply to Commonwealth land. However, the Airports Act and associated regulations require that the master plan, where possible, describes proposals for land use planning and zoning in a format consistent with the state or territory in which the airport is located. This Master Plan 2024 has considered state planning requirements and has used land use descriptions that are aligned, as far as reasonably practicable, to the South Australian planning system.

Consideration has been given to the following:

- *Planning, Development and Infrastructure Act 2016* and Planning, Development and Infrastructure (General) Regulations 2017
- State Planning Policies
- The 30-Year Plan for Greater Adelaide (2017 Update) (currently under review)
- Planning and Design Code
- Relevant State strategies and legislation
- Relevant local government strategic documents.

A comparison between the Commonwealth framework and the South Australian planning system is included in Figure 4-2.

4.3.1 South Australian Planning Context

The South Australian planning system recognises the importance of Parafield Airport within the state and metropolitan context as a substantial economic and employment generator in Northern Adelaide, as well as being of strategic importance to the state.

4.3.1.1 Planning, Development and Infrastructure Act 2016

The South Australian planning system is established under the *Planning, Development and Infrastructure Act 2016* (PDI Act) and subordinate regulations. The objects of the PDI Act set out the Act's intent to support and enhance the state's liveability and prosperity by creating an effective, efficient and enabling planning system, that promotes and facilitates development consistent with planning principles and policies and facilitates the development of infrastructure that will benefit the community.

The PDI Act recognises Parafield Airport as 'essential infrastructure' and provides policy mechanisms which intend to safeguard airport operations from inappropriate off-airport development by:

- Establishing a system of strategic planning which governs development at a high level
- The creation of the Planning and Design Code with policies to guide and control development
- Maintaining appropriate public participation in the strategic planning process and the assessment of development proposals
- Establishing a system of development referrals to relevant third-party bodies for subject matter expert input
- The establishment of various decision-making authorities.

4.3.1.2 State Planning Policies

State planning policies set out a vision and framework for land use that aims to improve liveability, sustainability and prosperity of the state. They are issued by the Minister for Planning under the PDI Act and seek to address key, strategic priorities for South Australia.

State Planning Policy 11: Strategic Transport Infrastructure acknowledges Parafield Airport as a strategic airport at which operations must be protected. Specific reference is made to the importance of implementing policy which provides guidance on the National Airports Safeguarding Framework.

At a broader level, State Planning Policy 9: Employment Lands talks to the need for the protection of important land holdings from encroachment from incompatible land uses.

	PARAFIELD AIRPORT PLANNING SYSTEM Airports Act 1996 (Cth)	SOUTH AUSTRALIAN PLANNING SYSTEM Planning, Development and Infrastructure Act 2016 (SA)
Strategic Planning	Airport Master Plan <ul style="list-style-type: none"> Reviewed and updated every eight years (previously every five years) 20-year planning horizon Extensive consultation Takes into account state and local government strategic plans Approved by the Commonwealth Minister for Infrastructure 	State Planning Policies <ul style="list-style-type: none"> Reviewed regularly Extensive consultation Takes into account State Government strategic plans and informs regional plans and local strategic planning Authorised by the South Australian Minister for Planning and Local Government
Policy Formulation	Land Use Plan (included in Master Plan) <ul style="list-style-type: none"> Updated every eight years through the airport master planning process Extensive consultation Minor variations through extensive consultation process Approved by the Commonwealth Minister for Infrastructure 	Regional Plans <ul style="list-style-type: none"> Prepared for declared Planning Regions across South Australia Consider 15-30 year horizon and reviewed periodically Extensive consultation Authorised by the South Australian Minister for Planning
Development Assessment (excluding major developments)	Development Assessment Process <ul style="list-style-type: none"> Assessed against the airport Master Plan Three categories of development Commonwealth agency referral for certain applications Public consultation for Performance Assessed – Merit applications (optional) Decision by PAL for Performance Assessed- Envisaged and Performance Assessed – Merit applications 	Development Assessment Process (as of March 2021) <ul style="list-style-type: none"> Assessed against the Planning and Design Code Three categories of development Agency referral in particular circumstances Public consultation in particular circumstances Decision possible by multiple relevant authorities, depending on category of development
Major Development or Major Project	Part 5, Division 4 – Airports Act 1996 <ul style="list-style-type: none"> Impact assessment (Major Development Plan) Extensive consultation PAL certification on consultation and progression of application Approved by the Commonwealth Minister for Infrastructure 	Part 7, Division 2 – Planning Development and Infrastructure Act 2016 <ul style="list-style-type: none"> Impact Assessed Development Public and agency consultation Detailed assessment by the State Planning Commission Decision of the South Australian Minister for Planning

Figure 4-2: Comparison of the Parafield Airport and South Australian planning systems

4.3.1.3 Regional Plan – 30 Year Plan for Greater Adelaide

Regional plans are contextual strategic documents which establish a long-term vision (15 – 30 years) for a particular area of South Australia relating to the integration of land use, transport infrastructure and the public realm.

Parafield Airport is located within the Greater Adelaide Region. The 30-Year Plan for Greater Adelaide provides a framework for how Adelaide can grow to become a more liveable, competitive and sustainable city. It guides the long-term growth of the city and its surrounds over the next 30 years.

The 30-Year Plan (2017 update) recognises the importance of airports as major economic infrastructure and establishes a policy position which seeks to protect airports from encroachment from incompatible development and facilitate further economic activity.

The policy directions of promoting infill development along main roads and further urban regeneration and consolidation within the surrounding suburbs (including those close to the airport and under flight paths) is anticipated to increase the number of people living near the airport and in designated areas used by aircraft arriving and departing the airport who may be affected by its ongoing operations. However, the plan does recognise the need for all sensitive land uses permitted adjacent to airports and under flight paths to mitigate the impact of noise and air emissions.

In early 2023, the State Planning Commission formally initiated work to update the current 30-Year Plan for Greater Adelaide, culminating in the release of the *Greater Adelaide Regional Plan Discussion Paper* in mid-August 2023 to gather stakeholder and community feedback on key themes which will be used by the State Planning Commission when preparing the plan itself. PAL has and will continue to engage with the process and provide input as necessary to ensure the operation of Parafield Airport continues to be adequately considered and protected.

4.3.1.4 Planning and Design Code

South Australia completed the modernisation of its planning system in 2021 with the implementation of planning reforms. The principal document for development assessment, the Planning and Design Code, has replaced all individual local council development plans to provide a single state-wide set of planning rules.

The Planning and Design Code includes a comprehensive set of policies, rules and classifications which are applied to development assessments outside of the airport land. The Code is structured with the following policy layers.

Overlays – are a tool used to express state planning policies and specific planning issues of state interest. Overlay policies take precedence over all other Code layers (zone, subzone and general development policies) and set out referral requirements to a third-party body for expert input.

Land surrounding Parafield Airport is subject to a number of aviation related overlays which seek to both safeguard airport operations and mitigate potential impacts. The following overlays are applicable:

- **Airport Building Heights (Regulated) Overlay** – seeks to manage the potential impacts of buildings on the operational and safety requirements of the airport
- **Aircraft Noise Exposure Overlay** – seeks to ensure that development which is sensitive to aircraft noise is designed and located in a manner that manages noise intrusion to reduce land use conflict and protect human health.
- **Building Near Airfields Overlay** – seeks to manage lighting and wildlife attraction impacts, and to a lesser degree building induced windshear and turbulence impacts on the airport.

Zones – are the primary organising layer of the Code and all land within South Australia is included within a zone. Zones set out planning policies and rules relating to the use, intensity of activities and built form characteristics that are anticipated within a particular area as well as public consultation and referral requirements. Parafield Airport is located within the 'Commonwealth Facilities Zone'.

Subzones – are created in particular locations where there are exceptional differences from zone policies to provide additional policy for consideration as part of the development assessment process. Subzones do not seek to detract from the parent zone, but rather to vary policy application for local circumstance.

General Development Policies – are supporting policies contained in zones and subzones which provide detail on what can occur in an area. They provide guidance on how a development should occur and are more functional in nature. General development policies are applied across multiple zones and subzones.

The PDI Act makes provision for policies within the various policy layers to be updated and amended. Updates may be initiated by a range of stakeholders and, where applicable, PAL receives notification of the change proposal and makes representation to ensure that the operation of Parafield Airport continues to be safeguarded. PAL will work with the South Australian government to seek an update to the Aircraft Noise Exposure Overlay to reflect the new Australian Noise Exposure Forecast presented in this Master Plan 2024 (see Section 12 and Section 13 for further information).

4.3.1.5 Infrastructure SA 20-Year State Infrastructure Strategy 2020

Infrastructure SA was established by the South Australian Government in 2018 as an independent advisory body on matters pertaining to infrastructure development and priorities in South Australia. In line with the *Infrastructure SA Act 2018*, Infrastructure SA is required to develop a 20-Year State Infrastructure Strategy.

The first 20-Year State Infrastructure Strategy was published in May 2020 and identifies multiple priorities across various focus areas to guide investment decisions. Within this Strategy, there is recognition that airports are critical items of transport infrastructure which support essential services and have significant maintenance obligations.

A review of the 20-Year State Infrastructure Strategy is required every five years and Infrastructure SA have commenced preparation of that strategy with a release of a Discussion Paper in late 2023 for public comment. PAL has and will continue to engage with the process and provide input as necessary to ensure the protection of Parafield Airport as nationally significant infrastructure and promote the need for the reliable and timely provision of services infrastructure to support planned growth, sustainability initiatives and new and innovative technologies such as electric vehicle take-off and landing (eVTOL) aircraft.

4.3.1.6 Shop Trading Hours Act 1977

Consumer trading occurring at federally-leased airports is regulated by the Commonwealth's Airports (Control of On-Airport Activities) Regulations 1997. Trading occurring on the Parafield Airport site is also subject to the provisions of the South Australian *Shop Trading Hours Act 1977*. As a consequence, there are a range of different trading restrictions placed on businesses located at Parafield Airport, depending on their characteristics.

4.4 Local Government Context

Parafield Airport is located within the local government area of the City of Salisbury and in close proximity to the City of Tea Tree Gully, City of Playford and City of Port Adelaide Enfield as shown in Figure 2.3.

PAL works with the local government authorities to provide compatible land uses and efficient transport networks within the airport and the surrounding areas, and to ensure that land use surrounding the airport considers the National Airports Safeguarding Framework guidelines (described in Section 12) such as the location of noise sensitive developments and building-height limitations.

4.4.1 City of Salisbury City Plan 2035

The City of Salisbury City Plan 2035 was prepared in 2020 and is the Council's highest order strategic document. It guides decision making over a 15-year period and identifies where Council will advocate for key matters which are in the interests of its community.

The Plan is an expression of how the City of Salisbury will achieve its vision to be 'a progressive, sustainable and connected community'.

The City Plan 2035 has three external looking directions, and one inward looking direction as follows:

- A welcoming and liveable city
- A sustainable city
- A growing city that creates new opportunities
- Innovation and business development (inward looking direction).

While not specifically identifying Parafield Airport within any of the directions, the Plan does identify the City's intention to advocate for increased capacity and railway grade separation along Kings Road to better enable freight movements to the Northern Connector. As described in Section 10, PAL will consider how any improvements integrate with its internal road network as described in Section 10.

4.4.2 Surrounding Local Government Areas

Planning across greater Adelaide must consider the operations of Parafield Airport as there are wider planning considerations for other local government authorities that are not directly adjacent to the airport. Due to the airspace structure within the Adelaide basin, aircraft operations occurring from Parafield Airport transit areas to the north-west and north-east of the airport via defined routes. These defined routes enable aircraft to depart the Parafield area to both the designated Western Training Area and beyond.

The training area is airspace specifically set aside to enable trainee pilots to practice aircraft manoeuvring and is defined generally as an area between St Kilda in the south-east, Long Plains in the north-east, Thompson Beach to the north-west and Outer Harbor to the south-west.

PAL advocates for the Planning and Design Code, and proponents of new developments occurring on land both surrounding the airport and in areas exposed to aircraft noise, to take into account the operational characteristics of the airport.

Further information on these planning considerations is included in Section 12.



Planning and Development Approach

5

5.1 Airport Vision

Parafield Airport Limited's (PAL) vision for Parafield Airport, as part of Adelaide Airport Limited, is to be:

**Everyone's Favourite Airport.
Seamless. Connected. Easy.**

To realise this vision, PAL will:

- Nurture strong relationships with stakeholders
- Promote the Northern Adelaide region
- Develop the expertise of its talented team
- Deliver safe, secure and sustainable facilities and services
- Strive for innovative solutions and continuous improvement
- Partner responsibly with the community.

5.2 Development Approach

The focus areas for the development and execution of this Master Plan 2024 include:

- Supporting the aviation industry
- Striving for innovative solutions
- Achieving sustainable outcomes.

These underpin the day-to-day operations of the airport and what PAL strives towards.

5.2.1 Supporting the Aviation Industry

Parafield Airport has been a pilot training base since 1927, when the Royal Aero Club of South Australia purchased two aircraft and commenced pilot training.

There are a number of inherent advantages that make Parafield Airport ideal for pilot training, including:

- The flight capacity and safety afforded by Parafield Airport's parallel runway system configuration
- Air traffic control services at Parafield Airport which enhance safety and capacity
- Provision of, and convenient access to, a dedicated area of airspace (referred to as the Western Training Area) for initial flight training
- Access to both controlled and uncontrolled airspace which enable students to develop the broad skills required to obtain their licence
- Parafield Airport's proximity to surrounding aerodromes, including Adelaide Airport and RAAF Base Edinburgh
- Easy access to the full range of navigation aids required for students to become suitably qualified
- Moderate and generally stable weather conditions, along with long day-light hours, which maximise flight training opportunities throughout the entire year.

Over 90% of current air traffic movements at Parafield Airport are related to pilot training.

Parafield Airport is home to a range of aviation training providers, including Adelaide Aviation, Bruce Hartwig Flying School, Command Flight Training, Enzo Flying School, Flight Training Adelaide, Helistar Aviation, Parafield Flying Centre and University of SA Aviation Academy.

Flight Training Adelaide partners with the University of South Australia to carry out flight training for students as part of the Graduate Diploma in Aviation, as well as international airlines including Cathay Pacific, IndiGo (India), China Airlines, Starlux (Taiwan), Sky Airline and J-Air (Japan). Flight Training Adelaide also provides training for Cobham special mission services (border surveillance and search and rescue operations), as well as helicopter pilot training.

Hartwig Air has been training pilots for over 50 years and partners with RMIT University to train commercial pilots under an Associate Degree of Aviation (Professional Pilots). Aerostar Aviation partners with TAFE Queensland to offer a Diploma of Aviation (Commercial Pilot Licence – Aeroplane) and with the Central Queensland University to offer a Graduate Diploma of Aviation.

As air travel recovers from the Covid-19 pandemic and returns to strong growth, the worldwide aviation industry faces significant challenges in meeting the demand for pilots. Recent global aviation outlooks indicate that over 600,000 additional commercial airline pilots will be needed by 2041, with 41 per cent of these required for countries in Asia and Oceania. This is discussed further in Section 6.

The minimum flying hours required to obtain a pilot's licence is prescribed by the Civil Aviation Safety Authority and ranges from a minimum of 25 hours for a recreational pilot licence to 200 flying hours for a commercial pilot licence. PAL works with the flying schools, other aircraft operators and Airservices Australia to ensure the safe and efficient operation of the airfield so that student pilots can undertake the required flying hours and access the training circuit for 'touch and go' training (repetitive touch-down and take-off operations) in both daylight and night time hours.

The Parafield Airport Pilot Scholarship program, which annually supported two local northern Adelaide students to obtain their Commercial Pilot Licence, commenced in 2013. The program was suspended in 2021 due to the COVID pandemic, and an alternate skills-based aviation traineeship program is being introduced in 2024.

5.2.2 Striving for Innovative Solutions

Technologies and other innovations will improve and optimise operations for both PAL and its tenants, both aeronautical and commercial.

The development and implementation of this Master Plan is not just about building infrastructure, but also about thinking innovatively to deliver solutions that are right for Parafield Airport's customers.

Technologies that may be considered in the future include:

- Accommodation of infrastructure to support the transition to electric aircraft
- Support for emerging advanced air mobility technologies, such as electronic vertical take-off and landing vehicles and other crewed, uncrewed or automated aircraft that move people and cargo

- Support for contemporary air navigation and air traffic management technology to reduce disruptions and improve useability of the airport.

Innovation is also applied to PAL's commercial endeavours. PAL continues to work with current and potential tenants to integrate innovative developments across the airport estate. This approach is focused on finding the solution for the context and situation, and not just new technology.

Record Breaking Electric Flight

In 2021, South Australian company Eyre to There Aviation flew Australia's first electric aircraft around South Australia and in doing so, set a number of new world records for flight by electric aircraft. Departing from Parafield Airport and concluding at Adelaide Airport, the Eyre to There Aviation team set:

- The world endurance record
- The record for over-water flight
- The record for longest distance flown in a 24-hour period
- The record for fastest speed between two points.

5.2.3 Achieving Sustainable Outcomes

Sustainability is at the core of the way PAL does business. PAL is a sector leader in global airport sustainability and is committed to sustainable business practices to ensure a healthy and safe environment for its employees, aviation partners, tenants and the community.

This commitment to sustainability is reflected in Adelaide Airport Limited's (PAL's parent company) decision to secure Sustainability Performance Linked Loans – the first of its kind in Australia. These loans incentivise the borrower to further improve its performance against a set of environmental, social and governance criteria.

Supporting this is PAL's Sustainability Policy and Corporate Sustainability Strategy which form the foundation for the airport's sustainability journey. Together, they provide a documented commitment to sustainability that is core to business planning, developments and operations.

The PAL Sustainability Policy outlines the following objectives:

- Integrate the principles of sustainable development and sustainable business practices into our planning, design, construction and procurement
- Apply a stewardship approach throughout our supply chain by encouraging and facilitating the adoption of sustainability principles and practices by our customers, partners, tenants, contractors and suppliers
- Minimise the environmental impact of our operations through a program of continuous improvement, always striving for innovative solutions to meet our goals
- Measure, reduce and manage our carbon emissions on an ongoing basis with a strong focus on energy and fuel efficiency
- Optimise community outcomes by engaging with and supporting our local community in a positive and constructive manner and being a valued member of the community
- Ensure we provide a positive and safe work environment, where individuals are valued and quipped with the skills to effectively carry out their work
- Ensure compliance with all relevant regulatory and other requirements.

Further information on PAL's approach to sustainability is provided on the Parafield Airport website, parafieldairport.com.au

To ensure PAL remains on-track, it has adopted the principles and concepts of applicable reporting frameworks which bring greater cohesion and efficiency to the reporting process through an integrated thinking approach and focus on creating value over time.

The airport has been established for nearly 100 years, and since 1998 has operated under a 50 year lease (with a further 49 year option) arrangement. The sustainable management and development of the airport is essential to ensuring that Parafield Airport can continue to operate and grow for the duration of the airport lease and beyond.

Parafield Airport also has an important role to play in the long-term sustainability of the aviation industry by providing airport facilities and an operational environment that continues to support world-standard pilot training activities as detailed in Section 5.2.1.

5.3 Development Objectives

Taking into account PAL's vision for the airport and key development focus areas, the following development objectives underpin the overall development plans in this Master Plan 2024. These objectives also guide specific future investments in facilities and infrastructure across the airport site.



Figure 5.1 Development Objectives

5.4 Consultation and Engagement

PAL's approach to consultation is focused on creating robust, transparent and collaborative communications. PAL uses creative, innovative and engaging communication techniques to interact with the community.

PAL continues to engage with Commonwealth, South Australian and local government authorities, aviation operators, airport tenants and the local community through a range of committees and forums. This currently includes the following.

5.4.1 Parafield Airport Consultative Committee

The Parafield Airport Consultative Committee (PACC) was established in May 1998 and meets regularly to discuss airport and aviation issues affecting the community, local areas and the state.

The Commonwealth government has published guidelines for establishing and running consultative groups at leased federal airports. The intended role of these groups, which includes the PACC, is:

- To enable airport operators, residents affected by airport operations, local authorities, airport users, and other interested parties to exchange information on issues relating to airport operations and their impacts
- To allow matters to be raised and taken into account by the airport operator, with a genuine desire to resolve issues that may emerge
- To complement and support the consultative requirements already established for master plans and major development plans
- To discuss and share information between the airport and the communities affected by its operations and plans.

Membership includes Commonwealth, state and local government authorities, aviation operators, airport tenants and community representatives. PACC meeting minutes are published on the Parafield Airport website, parafieldairport.com.au

5.4.2 Parafield Airport Technical Working Group

The Parafield Airport Technical Working Group (TWG) was formed in 2010. This group works as a subgroup of the PACC and is responsible for technical aviation advice to the PACC.

The TWG is typically comprised of airport management and operations staff, general aviation operators, flight training schools, maintenance organisations and other aviation-related businesses

operating from Parafield Airport. Representatives from Airservices Australia, CASA and DITRDCA are also invited to attend.

The terms of reference for the TWG include:

- Consider flight paths, airspace and runway usage to manage aircraft noise impacts on surrounding communities consistent with the Parafield Airport Fly Friendly program
- Provide a forum to discuss efficiencies and legislative changes relating to flight paths, training circuits, airspace, runway usage, and airport operational hours
- Review the Fly Friendly program
- Review aircraft noise complaint information
- Review current proposed changes to airport aviation facilities and infrastructure
- Review aircraft engine ground running operations
- Participate in airport master planning.

5.4.3 Parafield Airport Planning Coordination Forum

PAL has established a Planning Coordination Forum (PCF) to develop ongoing strategic partnerships between the airport and the Commonwealth, state and relevant local governments.

Regular meetings of the PCF are held to exchange information on airport planning, development and operations, and the implications for Parafield Airport of development in the surrounding areas. The PCF considers such issues as:

- Consistency of on-airport land planning schemes with relevant urban and regional planning schemes
- The steps being taken to develop or implement the Parafield Airport Master Plan, development projects and significant initiatives
- Airport ground transport issues including connections to off-airport transport networks, public transport and other road issues
- Environmental issues arising from airport development and operations
- On-airport commercial developments and their off-airport interrelationships
- Operation of the airport and potential effects on the local community, including aircraft noise
- Land use planning and development issues in the vicinity of Parafield Airport, including planning measures to safeguard airport operations
- Government briefings on regulatory and policy developments.

5.4.4 Master Plan Consultation

This Master Plan 2024 is being developed in consultation with a wide range of stakeholders. Throughout this process, PAL will consider the feedback received and, where possible, seek to address the concerns and issues raised.

5.4.4.1 Development of the Master Plan

PAL is undertaking extensive consultation for the preparation of this Master Plan 2024. This includes:

- The regular PCF and PACC meetings which provide extensive feedback on airport planning considerations
- Briefings with relevant state government agencies, local government, aviation industry stakeholders and consultation groups
- Release of an exposure draft version of the Master Plan to key stakeholders including the SA Department for Infrastructure and Transport, the DITRDCA, the Department of Climate Change, Energy, the Environment and Water, Airservices, and CASA.

5.4.4.2 Release of the Preliminary Draft Master Plan for Public Comment

As required by Section 79 of the Airports Act, the Preliminary Draft Master Plan will be made available for public comment for a period of 60 business days.

Access to the Preliminary Draft Master Plan for public comment will be advised and provided through:

- Publishing a newspaper notice inviting members of the public to provide written comments
- Making copies of Master Plan 2024 available for inspection and purchase at Parafield and Adelaide airports
- Providing an electronic copy for viewing and download on the Parafield Airport website, parafieldairport.com.au/community/publications/parafield-airport-master-plan
- Making copies available for inspection at surrounding local government authorities.

In accordance with the Airports Act, prior to the Master Plan being advertised for public comment, PAL will advise the following persons of its intention to give the Commonwealth Minister a Draft Master Plan:

- The South Australian Minister with responsibility for town planning or use of land
- The South Australian authority responsibility for town planning or use of land
- Each local Council with responsibility for an area surrounding the airport.

To support the release of the Preliminary Draft Master Plan for public comment, PAL undertakes the following activities:

- Face-to-face engagement activities
- Digital engagement through social media
- Information on the Parafield Airport website
- Provision of supporting information covering key matters such as aircraft noise management, safeguarding airport operations, land use, commercial development, and the environment
- Briefings to key stakeholders and community groups
- Copies of Master Plan 2024 made available in hard copy and electronic format.

5.4.4.3 Public Comment Submission

Public comment submissions are to be made in writing and sent to Parafield Airport before close of business on **04 April 2024**.

Master Plan Submission
Parafield Airport Limited
Building 18 Tigermoth Lane
Parafield Airport SA 5108

Email: palmasterplan2024@aal.com.au

In accordance with the Airports Act, PAL must consider submissions received during the public comment period. Where possible, the concerns are issues raised will be incorporated into the Draft Master Plan what will be presented to the Commonwealth Minister for consideration.

5.4.4.4 Submission of the Draft Master Plan to the Commonwealth Minister

As required by the Airports Act, the submission of the Draft Master Plan to the Commonwealth Minister will be accompanied by the following materials:

- A copy of each written comment received during the public comment period
- A written certificate signed on behalf of Parafield Airport, containing:
 - › A list of names of the people or organisations that provided written comments to the Preliminary Draft Master Plan
 - › A summary of the comments received
 - › Evidence that Parafield Airport has given due regard to those comments.

5.4.4.5 Publication of the Final Master Plan

In accordance with Section 86 of the Airports Act, following approval of the Master Plan by the Commonwealth Minister, PAL will:

- Publish a newspaper notice advising that the Parafield Airport Master Plan 2024 has been approved
- Make copies of the approved Master Plan 2024 available for inspection and purchase at Parafield Airport
- Provide an electronic copy of the approved Master Plan for viewing and download on the Parafield Airport website, parafieldairport.com.au/community/publications/parafield-airport-master-plan



Aviation Forecasts

6

6.1 Introduction

Parafield Airport is one of the busiest general aviation airports in Australia. Aircraft movements are dominated by pilot training operators that have contracts with many of the major airlines in Australasia. There is a range of other general aviation activities that occur, such as aerial agriculture, aerial photography, search and rescue, firefighting support aircraft, and charter services. In 2022 there were 219,000 movements, down from almost 270,000 movements in 2019 (pre-covid).

Aircraft movement forecasts influence the development and timing of infrastructure. Forecasting for the next 20 years relies on a detailed understanding of prevailing and future economic conditions as they directly affect the main drivers for airport activity. Modelling is undertaken for high, central and low growth scenarios to ensure planning is adaptable to actual growth.

6.2 Overview

The forecasts considered in this Master Plan reflect the current knowledge of future aircraft technologies and economic predictions. The forecasts will be reviewed and reassessed throughout the Master Plan period, and Parafield Airport Limited (PAL) will provide updates on performance and trends to the Planning Coordination Forum to ensure key stakeholders remain informed.

Tourism Futures International (TFI), which specialises in aviation forecasting, has prepared the long-term aircraft movement forecasts for Parafield Airport. The key forecast periods for this Master Plan are for the eight years through to 2031, and the 20-year planning period through to 2043.

Snapshot of Aviation Forecasts

	2019 (actual pre-COVID)	2022 (actual)	2031 (forecast)	2043 (forecast)
Fixed-wing aircraft movements	256,804	209,038	270,898	329,068
Helicopter movements	12,740	10,074	11,902	13,278
Total aircraft movements	269,544	219,112	282,799	342,346

Figure 6.1 - Snapshot of Parafield Airport movement forecasts 2019 to 2043, Source - Tourism Futures International.

6.3 Forecasting Approach

The general aviation sector is highly volatile and difficult to forecast. A three-part process was adopted for forecasting movements at Parafield Airport:

- Review of the Australian general aviation context, including national, state and individual airport performance, as well as research on national and international general aviation developments and forecasting. Sources of data include aviation and airport statistics published by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) and Airservices Australia, and movement information collected by AvData Australia (PAL's aeronautical data and billing provider).
- Interviews with the main operators at Parafield Airport regarding future plans, including any intention to move towards the use of electric-powered and hybrid electric/avgas-powered aircraft types as they become available.
- Review of factors such as economic growth, population, fuel costs and exchange rates against outcomes for major general aviation airports and for Parafield Airport to establish potential driving factors in future growth.

The results of each of these three steps were integrated to develop the long-term movement forecasts for Parafield Airport. Given that the historical growth path for airport traffic at airports such as Parafield Airport has been erratic with periods of growth and decline, the forecast growth rates adopted for this Master Plan should be seen as reflecting trend growth with variability around this growth resulting from short to medium term events and impacts.

The forecasting approach is outlined in Table 6-1.

Many factors that influence forecasts are unpredictable including diverging views on the future direction and impact of factors such as interest rates, oil prices and population growth rates. Table 6-2 shows the various data sources used for the movement forecasts. The forecast model varies assumptions to produce high, central and low passenger estimates. The central forecast has been used to support the planning throughout this Master Plan 2024.



TASKS	COMPONENTS
Segmentation State/local drivers	<ul style="list-style-type: none"> • Global economic factors • Population growth • Fuel costs • Exchange rates • Oil prices • Australian and state population projections • Regulatory factors • Market growth • Australian and state economic factors • Demographic factors • Flight training company capacity • Training costs • Infrastructure
Market analysis	<ul style="list-style-type: none"> • National and state performance of the general aviation sector • National and international research on general aviation developments and forecasting • Airport performance for major capital city, regional and general aviation airports across Australia • Assumptions about future capacity, as well as identifying qualitative factors that may influence movements • Interviews with general aviation and flight training operators at Parafield Airport regarding potential growth for fixed-wing and helicopter operations
Forecast development	<ul style="list-style-type: none"> • An iterative process integrating reviews of: <ul style="list-style-type: none"> › The Australian general aviation context › Factors such as economic growth, population, fuel costs and exchange rates against outcomes for major general aviation airports and for Parafield Airport › Final model outcomes (iterative process) › Interviews with aircraft operators at Parafield Airport
Review risks/ sensitivities	<ul style="list-style-type: none"> • Varied levels for Australian and South Australian economic and population growth, fuel costs, capacity constraints

Table 6-1 Parafield Airport forecasting approach, Source - Tourism Futures International

CATEGORY	DATA SOURCES
Movements and outlooks	<ul style="list-style-type: none"> • Bureau of Infrastructure, Transport and Regional Economics (BITRE) survey of Australian registered aircraft undertaking commercial air transport and general aviation activity • Airservices Australia movement data for Parafield Airport (up to 2014) and annual reporting on movements at Australian airports • AvData Australia (Parafield Airport movement data from 2015 onwards) • World Economic Outlook • Reserve Bank of Australia • US Energy Information Administration • Australian Bureau of Statistics • Australian Government Centre for Population, 2022 Population Statement released January 2023

Table 6-2 Data sources to predict forecast movements, Source - Tourism Futures International

6.4 Recent Performance

Annual aircraft movements for Parafield Airport between 2000 and 2022 are shown in Figure 6.2. A movement can be either a landing or departure. A circuit, which is a touch-down and immediate take-off for training purposes, is counted as two movements.

A large number of events have impacted on the volume of movements at Australia's general aviation airports, including Parafield Airport. These include major economic events such as Australian recessions, the Asian Financial Crisis of 1997 and the Global Financial Crisis of 2007/08, aviation-related events such as the collapse of Ansett in 2001, the high Australian dollar during the mining boom over 2002 to 2013, and more recently the COVID-19 pandemic.

A major source of data on general aviation activity across Australia is the BITRE survey of Australian registered aircraft undertaking commercial air transport and general aviation activity. The survey provides statistics on the number of hours flown and the number of landings of all Australian-registered aircraft. Over the five years to 2019, instructional flying (which is all pilot training, including licence renewals and aircraft type endorsements) experienced a compound annual growth rate of 8.2 per cent for South Australia and 0.8 per cent for Australia. The survey also identified that in 2019:

- South Australia accounted for 13 per cent of all Australian general aviation landings and 8 per cent of flying hours

- South Australia accounted for 23 per cent of instructional flying landings and 14 per cent of instructional flying hours
- Pilot training accounted for 73 per cent of general aviation landings in South Australia, the highest proportion for any Australian state.

The impact of the COVID-19 pandemic on the aviation industry has been significant. Due to the Australian and South Australian border closures and lengthy lockdown periods, many businesses at Parafield Airport reduced their operations. International student pilots were unable to travel to Australia, and aircraft were also not being flown to save on operating costs, such as fuel, maintenance and airfield and navigation charges.

For financial year 2021/2022, when South Australia was experiencing significant lockdown periods and travel restrictions, Parafield Airport recorded 154,796 aircraft movements, which is the lowest volume of aircraft movements since 2003. This is consistent with national and state based general aviation trends over the same period.

Australia's international borders fully reopened on 21 February 2022, and the flying schools at Parafield Airport returned to normal student capacity and training operations in mid-January 2023.

By the end of 2022, aircraft movements Parafield Airport had recovered to just over 81 per cent of 2019 movement numbers.

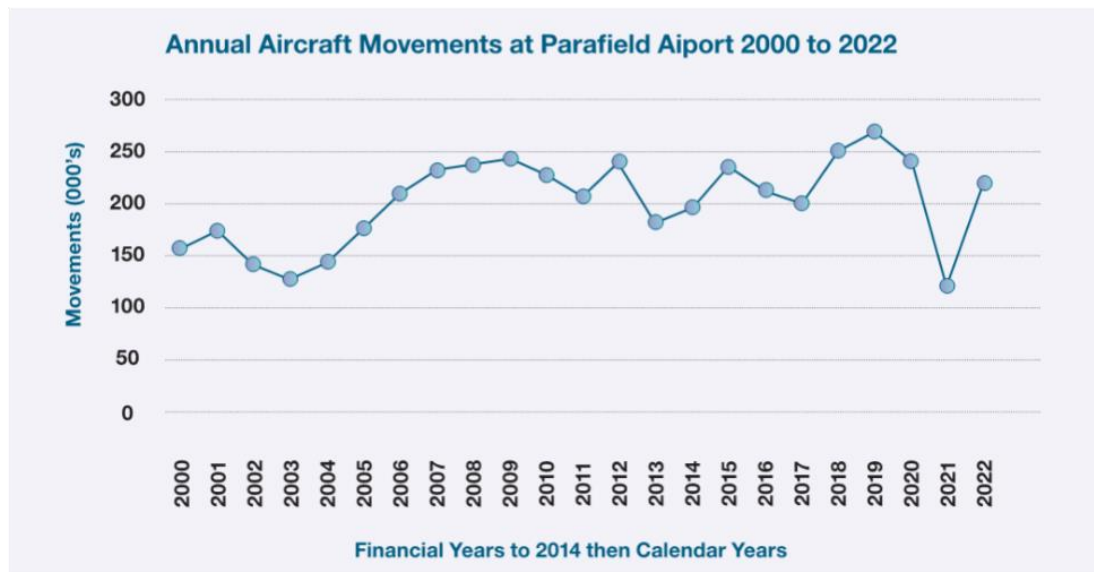


Figure 6.2: Annual aircraft movements at Parafield Airport, 2000 to 2022, Source - Tourism Futures International

Note: Data prior to December 2017 may not reflect all movements outside of Airservices air traffic control tower hours and may marginally underrepresent total movements.

6.5 Parafield Airport Activity Forecasts

6.5.1 Industry Outlook

Factors such as longer-term national or state economic and population growth, along with commercial aviation growth in the Asia and Pacific regions (generating demand for pilots), are considered to be the main influences that will promote steady growth of the general aviation sector in the long-term. Other factors such as economic downturns, Australian exchange rates, oil prices and/or the costs for sustainable fuels, policy and regulatory changes will influence movements around the trend line.

There are many aviation-related factors that could have a positive or negative influence on growth at Parafield Airport over the next 20 years.

Positive factors that could increase the demand for pilot training include the strong growth in commercial aviation in the Asia and Oceania regions as a result of:

- The strong growth in the middle class expected over the next decade
- The growth in low-cost airlines throughout Asian countries
- The introduction of new highly efficient aircraft types into the region.

Recent global market outlooks from Airbus forecast a full recovery of global aviation to 2019 levels between 2023 and 2025 along with growth rates comparable with pre-COVID.

The 2022 Boeing Pilot and Technician Outlook forecasts that between 2022 and 2041, the aviation industry will need to supply 602,000 commercial airline pilots with 41 per cent of these required for countries in Asia and Oceania. Suppliers of pilot training in Australia and South Australia will seek to benefit from this growth over the next decade.

Negative factors that could slow or stall growth in general aviation activity include:

- An increase in the use of drones in aerial work and agriculture

- Substantial increases in the cost of fuel as sustainable aviation fuel replaces traditional avgas (aviation gasoline) as part of the adjustment to reduce carbon emissions
- Increased use of simulators or other significant regulatory changes that reduce the amount of flying hours for pilot training
- Changes in airspace requirements that reduce the number of aircraft permitted to be in the training circuit.
- Regulatory intervention designed to limit general aviation activity.

6.5.2 Base Year

The base year for the aircraft movement forecasts in this Master Plan is 2022. The 2022 movement information is comprised of data from Airservices Australia (movements during air traffic control tower hours) and Avdata Australia. In 2022 there were 209,000 fixed-wing aircraft movements and just over 10,000 helicopter movements, totalling 219,112 movements.

6.5.3 Aircraft Movement Forecasts

Total aircraft movements at Parafield Airport are forecast to increase by 54 per cent over the 20-year planning period, from 221,728 movements in 2023 to 342,346 movements in 2043. When comparing the forecasts to actual annual movements prior to the COVID-19 pandemic, the 2043 forecast is a 27 per cent increase over the 2019 actual movements.

The movement forecasts for Parafield Airport are shown in Table 6-3. The forecast compound annual growth rate (CAGR) for total movements over the base year of 2022 to 2043 is 2.2 per cent for fixed-wing aircraft and 1.3 per cent for helicopters with a CAGR of 2.1 per cent for total movements.



It is forecast that the aviation industry will need to supply 602,000 commercial airline pilots between 2033 and 2041, with 41 per cent of these required for countries in Asia and Oceania

Source: Tourism Futures International.

AIRCRAFT MOVEMENTS	2019 (pre-COVID)	2022 (actual)	2031 (forecast)	2043 (forecast)	CAGR 2022-43 (percent)
Fixed-wing aircraft movements	256,804	209,038	270,898	329,068	2.2
Helicopter movements	12,740	10,074	11,902	13,278	1.3
Total aircraft movements	269,544	219,112	282,799	342,346	2.1

Table 6-3 Movement forecasts for Parafield Airport 2022 to 2043, Source - Tourism Futures International

Figure 6.3 shows the forecast trends for low, central and high growth scenarios over the next 20 years as a relatively smooth path in contrast to the fluctuations evident in the history. The forecasts do not account for the short-term changes due to a myriad of factors that cannot be incorporated in forecasting. It is also difficult to accurately estimate when the general aviation sector at Parafield Airport will recover from the

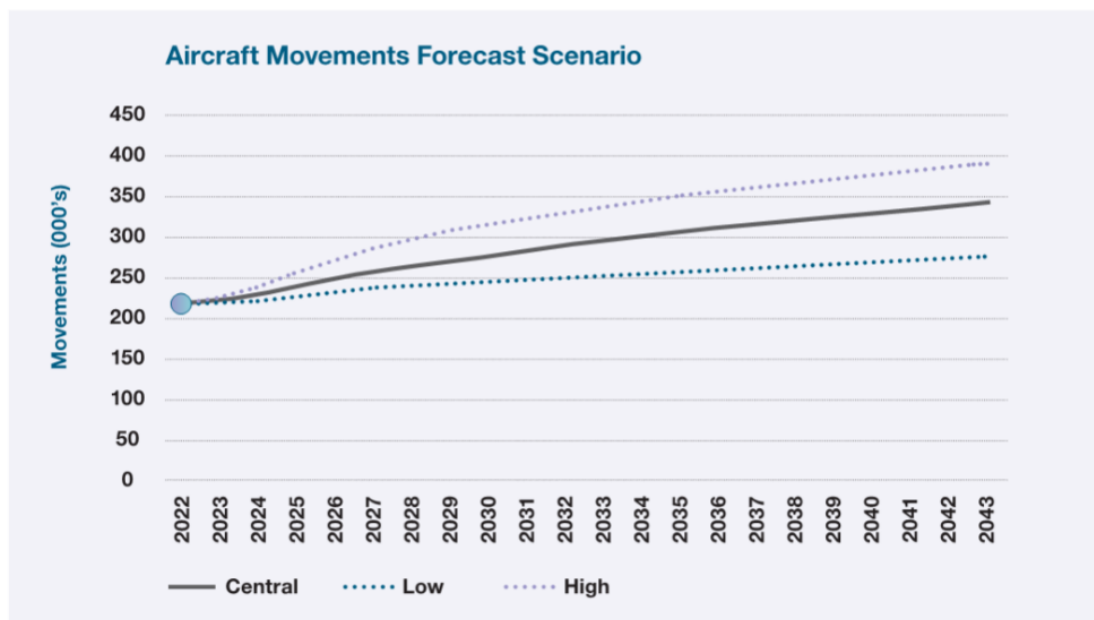


Figure 6.3: Parafield Airport aircraft movement forecast scenarios: Source: Tourism Futures International

COVID-19 pandemic and current global economic uncertainties. With economic recovery and the recent return of international students to flight training, the general aviation sector at Parafield Airport is expected to return to 2019 movement levels by 2026 in the high forecast scenario and by 2029 in the central forecast scenario.

The largest proportion of general aviation activity at Parafield Airport is flight training for commercial pilots. Circuits, which are repetitive touch-down and take-off operations, are a vital part of pilot training activities in both daylight and night-time conditions. Class D airspace procedures were introduced at Parafield Airport in 2010 which reduced the number of aircraft permitted in the circuit path. The training circuit, which is shown in Section 13, is currently restricted to a maximum of five aircraft in each circuit at any one time. PAL continues to work with Airservices Australia to investigate capacity constraints for circuit training activity during peak periods. The forecasts adopted for Master Plan 2024 assume that the current circuit capacity limits will continue for the foreseeable future.

The Master Plan 2017 forecasts were based on 235,400 actual movements in 2015 and assumed a central forecast of 248,600 movements by 2021 and 339,300 movements by 2036. The 269,544 actual movements in 2019 (pre-COVID) exceeded the 2021 forecast. Due to the impact of the COVID-19 pandemic, the revised 20-year central forecast for this Master Plan 2024 (of 342,346 movements by 2043) is similar to the 20-year central forecast in Master Plan 2017 (339,300 movements by 2036).

6.5.3.1 Helicopter Movement Forecasts

Helicopter operations at Parafield Airport are evenly split between pilot training flights and other activities. Flight Training Adelaide and Helistar are the main helicopter pilot training providers. Other common helicopter activities include aerial surveying, such as inspection of the Network power lines, maintenance of firefighting helicopters and heavy lift activities.

In 2022, there were approximately 10,000 helicopter movements at Parafield Airport. The central forecast for helicopter movements in 2043 is anticipated to be just over 13,000. This is based on an annual growth of 1.3 per cent per annum.

Helicopter movements accounted for 4.7 per cent of total movements in 2019 and 4.6 per cent of total movements in 2022. They are expected to account for a marginally declining share of total movements over the next 20 years, with 3.9 per cent of total movements in 2043 forecast to be for helicopters.



58 PARAFIELD AIRPORT

6.5.4 Electric Aircraft

The aviation industry has made exciting advancements in electric/hybrid aircraft technology in recent years, but it does come with challenges that must be overcome for electric aircraft to become a viable option for the general aviation industry.

Aircraft operators at Parafield Airport have expressed a strong intention to take up electric or hybrid aircraft types when they become available due to the potential to reduce carbon-related emissions, aircraft noise and operating costs (relative to the current avgas fueled aircraft).

The limitations that will need to be overcome for electric aircraft to become viable include the current battery technology which limits the distance and duration of flights, the requirement for large, specialised charging facilities at airports, aviation regulations and standards that do not take into account the specific characteristics of electric aircraft, and the higher costs associated with manufacturing and therefore purchasing electric aircraft.

Electric aircraft are already being trialed at a number of airports around Australia. In June 2021, the flying school Eyre to There Aviation achieved a world endurance record for electric aircraft when it completed a 1,350km, 18 stop, flight that departed from Parafield Airport.

South Australia may be home to Australia's first commercially produced electric aircraft. The E22 Spark is a two-seater aircraft with a flight time of upto 90 minutes, which could make it ideal for training purposes.

The forecast take-up of electric aircraft into pilot training and other general aviation at Parafield Airport is shown in Table 6-4. It is assumed that the take-up of electric aircraft will be at a faster rate for the pilot training sector, relative to the other general aviation sectors. Based on these assumptions, the proportion of total movements by electric/hybrid aircraft types increases from an estimated 17 per cent in 2031 to 69 per cent in 2043. However, there are still many challenges to overcome in the transition to electric aircraft.

South Australia may be home to Australia's first commercially produced electric aircraft. The E22 Spark is a two-seater aircraft with a flight time of upto 90 minutes, which could make it ideal for training purposes.



YEAR	ESTIMATED PROPORTION OF ELECTRIC AIRCRAFT		PROPORTION OF ELECTRIC AIRCRAFT MOVEMENTS
	Training	Other general aviation	
2031	20%	10%	17%
2043	75%	50%	69%

Table 6-4: Potential use of electric aircraft for Parafield Airport Source: Tourism Futures International.





PART C

The Plan for Parafield Airport

Section 7. Land Use Plan

Sets out the Land Use Plan for Parafield Airport, which is used to guide all on-airport development and is used to assess non-aviation development proposals.

Section 8. Aviation Development

Describes the Aviation Development Plan for the airfield.

Section 9. Commercial Development

Outlines the proposed airport commercial developments within the next eight years through to 2031 and the 20-year planning period through to 2043.

Section 10. Ground Transport

Outlines the Ground Transport Plan for Parafield Airport based on the infrastructure needed to cater for increased travel to the airport for general aviation, students, employees, freight and commercial vehicles. It sets out the actions required to address the forecast increases in vehicle trips to and within Parafield Airport.

Section 11. Services Infrastructure

Outlines the existing and future service infrastructure requirements for Parafield Airport.

Section 12. Safeguarding the Airport

Provides the measures required for safeguarding the ongoing operations and growth of Parafield Airport.

Section 13. Aircraft Noise

Outlines current and future aircraft noise exposure for areas surrounding Parafield Airport and details the approach to aircraft noise management.

Section 14. Environment Strategy

Outlines the Environment Strategy and the objectives for environmental management, the impacts of operations on the environment and Parafield Airport's approach to prevent, control and reduce environmental impacts.



Land Use Plan

7

7.1 Introduction

Parafield Airport plays an important role as a major economic and employment hub in Northern Adelaide. Realisation of the airport's maximum potential to support aviation and non-aviation activities requires a planned approach.

Land use planning is a critical element of the Master Plan as it provides the overall planning intent for Parafield Airport. It includes land use strategies and objectives for development and considers the planning policies surrounding the airport as outlined in the South Australian Planning and Design Code.

This Land Use Plan is a revision and update of the plan contained in the Master Plan 2017. These changes ensure that Parafield Airport continues to meet the needs of the local area, while aligning with the recent changes to the South Australian planning system, where feasible. In addition to the introduction of new legislation in South Australia, individual local government development plans have been replaced by the Planning and Design Code, which is a single State-wide set of planning rules. The implications of this change on land use planning and on the structure of the South Australian policy organising layers is described in Section 4.

7.2 Planning Framework

The planning framework used to guide development at Parafield Airport is structured in a way that considers the broad overarching desired outcomes for the airport site, while also enabling distinct outcomes to be achieved in particular locations.

This is achieved through guiding principles which apply to the entire Parafield Airport site and additional precinct specific guiding principles which together inform how development may occur at Parafield Airport.

7.2.1 Parafield Airport Estate

Previously known as the Airport (Parafield) Zone, the Parafield Airport Estate covers the entire 433-hectare area of land leased to Parafield Airport Limited (PAL).

Future land use and development occurring across the Parafield Airport Estate will continue to provide positive benefits by:

- Maintaining and promoting the role of Parafield Airport as South Australia's principal general aviation and pilot training airport.
- Enhancing the airport as a key element of South Australia's transport infrastructure.
- Continuing the development of Parafield Airport as a major northern Adelaide economic and employment hub, supporting a range of non-aviation development and activities which contributes to the viability of the airport.
- Considering sustainability from the outset and designing for innovative solutions where relevant.

7.2.2 Precinct Structure and Interpretation

The Parafield Airport Estate is divided into five separate precincts (smaller sub-areas of the airport), each with a distinct development intent. Details of each precinct are shown in Table 7-1 and Figure 7.1.

To guide development, each precinct is defined by the following:

- **Desired Outcomes:** describe the purpose and intended use for the precinct.
- **Desired Character:** statement expressing how the precinct could look and feel in the future.
- **Assessment Criteria:** guides development within the precinct.
- **Concept Plan:** spatial representation of the precincts extent and critical information used to guide development of the precinct.
- **Categories of Development:** guides the types of land uses appropriate to the precinct. The categories of development include:
 - Performance Assessed – Envisaged Development (suitable form of development)
 - Restricted Development (generally incompatible forms of development).

The different precincts are delineated on a plan and used for airport planning, development and identification purposes. For proposed developments located close to the boundary of another precinct, the development intents of the adjoining precinct may be applied.

PRECINCT	AREA	TOTAL AREA OF AIRPORT
Runways Precinct	222 hectares	51%
Airport Business Precinct	68 hectares	16%
Commercial Precinct	48 hectares	11%
Bennett Precinct	13 hectares	3%
Enterprise Precinct	82 hectares	19%

Table 7-1: Parafield Airport estate precincts

Note: PAL is currently reviewing the precinct names, and these may be subject to update following completion of the Preliminary Draft Master Plan.





Figure 7.1: Parafield Airport precincts

7.3 Runways Precinct

7.3.1 Desired Outcomes

The Desired Outcomes for the Runway Precinct are to provide:

- Maintenance of safe and secure aircraft landing, take-off, taxiing and parking activities for both fixed wing and rotary wing operations.
- Accommodation of navigational aids, communications equipment/facilities and meteorological facilities.
- Accommodation of aviation-related support industries, operational facilities, training and education and emergency response services.
- Retention of aquifer storage and recovery and water harvesting activities in suitable locations.
- Accommodation of ground-based transport infrastructure providing connectivity between precincts in a manner that retains safe airport operations.
- Retention of land to accommodate a future freight railway spur line. Decision on the need and/or timing for a spur line will be reviewed as demand requires.

7.3.2 Desired Character

The Runways Precinct supports the safe and secure operation, movement and parking of fixed wing aircraft and helicopters, and ancillary activities and facilities such as navigation aids.

Development within the precinct focuses on aviation needs with ancillary or associated development and support facilities such as infrastructure and utilities, enhancing the airport's operation.

An area of the precinct is set aside to support the development of a future aviation zone. This zone is intended to accommodate operational activities, aviation-related support industries and related education establishments or academies and associated facilities.

7.3.3 Assessment Criteria

Development within the Runway Precinct should:

- Generally, be in accordance with the Runways Precinct Concept Plan (Figure 7.2) and the Land Uses listed as Performance Assessed – Envisaged Development in the Categories of Development Table (Table 7-2).
- Align with applicable Design and Infrastructure Guidelines (as amended from time-to-time).



Figure 7.2: Runways Precinct

RUNWAYS PRECINCT	
Performance Assessed – Envisaged Development	Restricted Development
Aircraft washdown	Brand outlet centre and associated support retailing
Aircraft operations and parking	Bulky goods outlet
Air traffic control tower/area approach control centre	Caravan and tourist park
Ancillary development where associated with a listed Envisaged Development	Child care centre
Aquifer storage and recovery/stormwater detention and harvesting	Consulting rooms
Aviation attractions	Hotel, tavern and liquor outlet
Aviation education establishment or academy	Industry
Aviation-related support industry	Motor repair station
Communication facilities	Office *
Earthworks and engineering works	Quick service restaurant
Emergency services facility	Restaurant
Emergency staging area	Service trade premises
Environmental protection works	Shop *
Fixed base operations	Tourist accommodation
Fuel depot	Waste transfer station
Helicopter landing and parking	
Navigational aid	
Rail transport terminal and rail lines	
Remotely piloted aircraft services	
Soil treatment facility where associated with airport operations	
Temporary uses and structures where associated with a listed Envisaged Development	
Utilities and/or infrastructure	
Weather and atmospheric testing facilities	

Table 7-2 – Runways Precinct categories of development

* May be envisaged when associated with Envisaged Development in the future aviation zone

7.4 Airport Business Precinct

7.4.1 Desired Outcomes

The Desired Outcomes for the Airport Business Precinct are to provide:

- The development of aviation related support industries which leverage existing and future airside access and facilities.
- A mix of commercial developments which support the viability of the airport and are sited in a manner that does not impact upon the safe operation of the airport.
- Development undertaken in line with the intent of each Policy Area.

7.4.2 Desired Character

The Airport Business Precinct forms the north-west corner of the Parafield Airport Estate and has frontage to Kings Road to the north, the railway corridor to the west and the Runways Precinct to the east and south. The precinct is the historical heart of the airport and as such has been developed for a range of aviation-related support industries, associated uses such as aviation student accommodation and compatible community, emergency services and commercial activities which support the success of the airport.

The precinct is divided into 3 policy areas (as shown in Figure 7.3 below):

- Aviation Related Activities Policy Area
- Flight Training Accommodation Policy Area
- Business Policy Area

7.4.2.1 Aviation Related Activities Policy Area

The Aviation Related Activities Policy Area will incorporate the aviation related businesses that front onto, and capitalise on, the airport aprons. This includes hangars, flight schools and academies, aircraft maintenance operations and aviation related businesses. Non-aviation related activities should be small scale and not detrimentally impact upon airport operations.

Additional area is set aside to the west to provide opportunities for further expansion of the western apron and aviation related support industries as demand arises.

7.4.2.2 Flight Training Accommodation Policy Area

The Flight Training Accommodation Policy Area incorporates accommodation and associated activities, such as simulator centre, cafeteria and office/administration connected to the operation of an aviation academy.

This policy area will continue to provide for and enable the expansion of these activities. Reservation is made for this policy area to support future business/commercial activities aligned with the Business Policy Area, should demand for this scale of accommodation no longer be required.

7.4.2.3 Business Policy Area

The Business Policy Area incorporates both the mixed-use business/commercial area at the heart of the aviation operations and a large undeveloped portion of the Parafield Airport Estate which shares a boundary with the railway corridor, Kings Road and the Aviation Related Activities Policy Area.

Development of the existing mixed-use area has an important role to play in supporting the activities occurring in the adjoining Aviation Related Activities Policy Area, while also enabling diversification of land uses. Development should be sited in a manner that protects the core aviation activities while maximising the policy areas frontage to Kings Road.

Development of the western portion of the policy area will comprise a mix of land uses of varying scale and intensity, undertaken in a manner that preserves the future expansion of aviation activities to the west.

There also remains opportunity for further development of aviation related support industries where this precinct interfaces with the Runways Precinct.

7.4.3 Assessment Criteria

Development within the Airport Business Precinct should:

- Generally, be in accordance with the Airport Business Precinct Concept Plan -Policy Areas (Figure 7.3) and the Land Uses listed as Performance Assessed – Envisaged Development in the Categories of Development Table (Table 7-3).
- Aligned with applicable Design and Infrastructure Guidelines (as amended from time-to-time).



Figure 7-3: Airport Business Precinct

AIRPORT BUSINESS PRECINCT	
Performance Assessed – Envisaged Development	Restricted Development
Aviation Related Activities Policy Area	
Accommodation (for students involved in aviation education/training)	Special industry
Advertising	Waste transfer station
Air traffic control tower/area approach control centre	
Aircraft apron	
Aircraft operations and parking	
Ancillary development where associated with a listed Envisaged Development	
Aviation attractions	
Aviation-related support industry	
Aviation education establishment or academy	
Car parking and/or storage	
Cold storage facilities where associated with an aviation activity	
Consulting room	
Earthworks and engineering works	
Fixed base operations	
Freight and/or distribution centre	
Fuel depot	
Office	
Passenger terminal	
Remotely piloted aircraft services	
Shop	
Store where associated with an aviation activity	
Temporary uses and structures where associated with a listed Envisaged Development	
Utilities and/or infrastructure	

Table 7-3: Airport Business Precinct categories of development

Flight Training Accommodation Policy Area	
Performance Assessed – Envisaged Development	Restricted Development
Animal keeping in the form of short term dog kennelling	Special industry
Aviation attractions	Waste transfer station
Accommodation (for students involved in aviation education/training)	
Ancillary development where associated with a listed Envisaged Development	
Aviation-related support industry	
Car parking and/or storage	
Earthworks and engineering works	
Office	
Temporary uses and structures where associated with a listed Envisaged Development	
Utilities and/or infrastructure	

Table 7-3: Airport Business Precinct categories of development (continued)



Business Policy Area	
Performance Assessed – Envisaged Development	Restricted Development
Animal keeping in the form of short term dog kennelling	Special industry
Aviation attractions	Waste transfer station
Aviation education establishment or academy	
Aviation-related support industry	
Bulky goods outlet	
Child care centre	
Cold storage facilities	
Community facility	
Conference and function centre	
Consulting room	
Data centre	
Earthworks and engineering works	
Emergency services facility	
Freight and/or distribution centre	
Fuel depot	
Indoor recreation facility	
Industry	
Office	
Public service depot	
Quick service restaurant where sharing an interface with Kings Road	
Recreation area	
Remotely piloted aircraft services	
Research and development facility	
Restaurant	
Retail fuel outlet	
Service depot	
Service trade premises	
Shop	
Store	
Telecommunications and communications facility	
Temporary uses and structures where associated with a listed Envisaged Development	
Tourist accommodation	
Transport depot	
Utilities and/or infrastructure	
Vehicle parking and/or storage	
Warehouse	

7.5 Commercial Precinct

7.5.1 Desired Outcomes

The Desired Outcomes for the Commercial Precinct are to provide:

- A range of commercial, service trade, large format retail and associated development activities.
- Buildings, through design and siting, that are compatible with the continued safe operation of aircraft and contribute to the enhancement of the precinct's amenity.

7.5.2 Desired Character

The Commercial Precinct forms the eastern extent of the airport and has frontage to Kings Road, Main North Road and Elder Smith Road. The precinct supports a range of commercial, service trade, large-format retailing and associated activities that maximise the precinct's exposure to Main North Road and Kings Road.

The precinct will continue to be the focus for the development of significant retail and commercial offerings, with buildings sited and designed to avoid impacting airport operations.

7.5.3 Assessment Criteria

Development within the Commercial Precinct should:

- Generally, be in accordance with the Commercial Precinct Concept Plan (Figure 7.4) and the Land Uses listed as Performance Assessed – Envisaged Development in the Categories of Development Table (Table 7-4).
- Align with applicable Design and Infrastructure Guidelines (as amended from time-to-time).

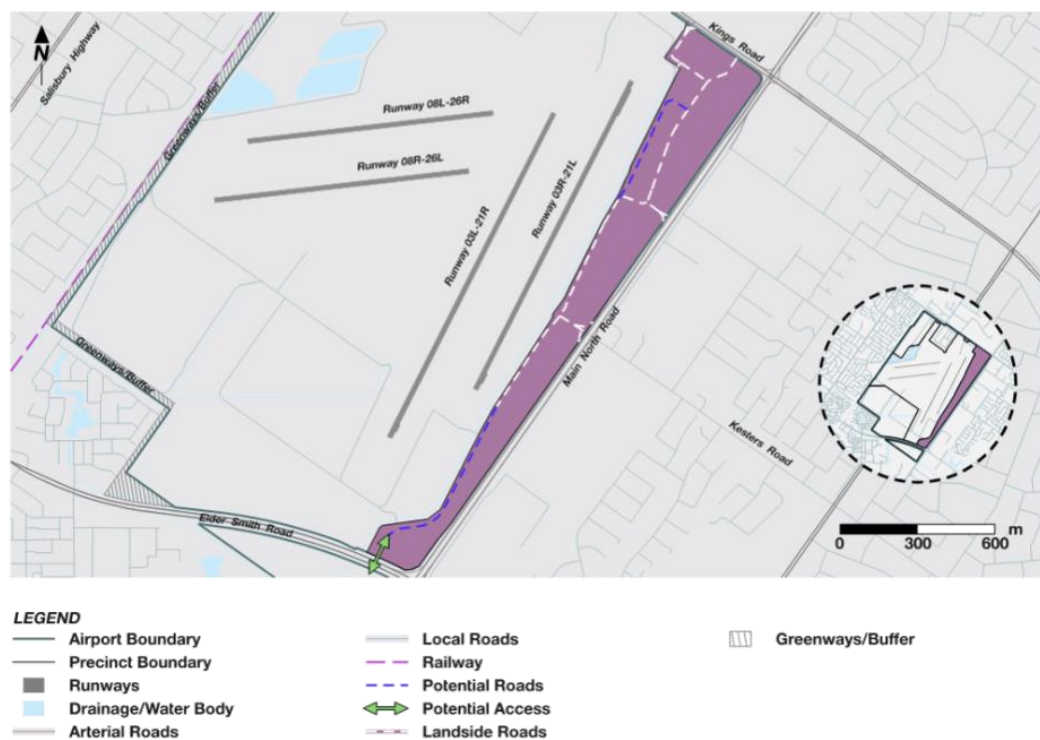


Figure 7.4: Commercial Precinct

COMMERCIAL PRECINCT	
Performance Assessed – Envisaged Development	Restricted Development
Advertising	General industry
Ancillary Development where associated with a listed Envisaged Development	Road transport terminal
Animal keeping	Special industry
Brand outlet centre and associated support retailing	Waste transfer station
Bulky goods outlet	
Community facility	
Consulting room	
Data centre	
Earthworks and engineering works	
Emergency services facility	
Home display and building centre	
Hotel, tavern and liquor outlet	
Indoor recreation facility	
Motor repair station	
Office	
Outdoor recreation and amusements	
Quick service restaurant	
Recreation area	
Retail fuel outlet	
Restaurant	
Service trade premises	
Shop	
Store	
Telecommunications and communications facility	
Temporary uses and structures where associated with a listed Envisaged Development	
Tourist accommodation	
Utilities and/or infrastructure	
Vehicle parking and/or storage	
Warehouse	

Table 7-4: Commercial Precinct categories of development

7.6 Bennett Precinct

7.6.1 Desired Outcomes

The Desired Outcomes for the Bennett Precinct is to provide:

- Development compatible with the vernal pools environmental management zone as identified in the Environment Strategy.
- Land uses within the precinct that are compatible with the precinct's location in relation to runway centrelines and appropriately consider risk.
- Buildings, through design and siting, that are compatible with the continued safe operation of aircraft and contribute to the enhancement of the precinct's amenity.

7.6.2 Desired Character

The Bennett Precinct is located to the southern extent of the Parafield Airport Estate and divided from the balance of the site by Elder Smith Road.

The precinct comprises the vernal pools environmental management zone and will continue to be a focus for actions associated with the management and interpretation of this area. Development is encouraged which is of a scale and type that is compatible with the precinct's relationship with the runway centrelines and does not detrimentally impact upon the environmental management zone.

7.6.3 Assessment Criteria

Development within the Bennett Precinct should:

- Generally, be in accordance with the Commercial precinct Concept Plan (Figure 7.5) and the land uses listed as Performance Assessed – Envisaged Development in the Categories of Development Table (Table 7-5).
- Align with applicable Design and Infrastructure Guidelines (as amended from time-to-time).



Figure 7.5: Bennett Precinct

BENNETT PRECINCT	
Performance Assessed – Envisaged Development	Restricted Development
Advertising	Industry
Ancillary Development where associated with a listed Envisaged Development	Waste transfer station
Recreation area	
Shop**	
Store**	
Temporary uses and structures where associated with a listed Envisaged Development	
Utilities and/or infrastructure	
Vehicle parking and/or storage	
Warehouse**	

Table 7-5: Bennett Precinct categories of development

** subject to airport safeguarding considerations

7.7 Enterprise Precinct

7.7.1 Desired Outcomes

The Desired Outcomes for the Enterprise Precinct are to provide:

- A range of retail, commercial, industrial, warehousing/logistics land uses to make the best use of land, facilities and services.
- Buildings, through design and siting, that are compatible with the continued safe operation of aircraft and contribute to the enhancement of the precinct's amenity.
- Provide a suitable interface between development within the precinct and the surrounding areas (residential, education and Future Aviation Zone).
- Siting of development in a manner that recognises the precinct's proximity to vernal pools management zone.

7.7.2 Desired Character

The Enterprise Precinct is located between Elder Smith Road in the south, the Runways Precinct to the east and north and the railway corridor to the west, taking access from Elder Smith Road. The southern portion of the precinct also comprises a number of vernal pools.

The Enterprise Precinct supports a range of land uses including commercial, industrial and logistics type activities of varying scale. It is anticipated that the precinct also enables the establishment of retail type uses as opportunities arise.

Capacity should be retained for a future freight rail spur parallel to the existing railway corridor. The need and timing of any future rail spur will be informed by demand.

Section 7.3.2 notes that capacity is retained for the development of a future aviation zone within the Runways Precinct. The exact location of the boundary of the future aviation zone in relation to the Enterprise Precinct is not determined.

As such, in circumstances where development occurs near the boundary between the Runways Precinct and Enterprise Precinct, the land uses contained in the Performance Assessed – Envisaged Development for the Enterprise Precinct will be considered. Particular attention will be paid to ensuring that land uses and development do not impact upon, or limit, future expansion of aviation operations.

7.7.3 Assessment Criteria

Development within the Enterprise Precinct should:

- Generally, be in accordance with the Enterprise precinct Concept Plan (Figure 7.6) and the land uses listed as Performance Assessed – Envisaged Development in the Categories of Development Table (Table 7-6).
- Align with applicable Design and Infrastructure Guidelines (as amended from time-to-time).



Figure 7.6: Enterprise Precinct

ENTERPRISE PRECINCT	
Performance Assessed- Envisaged Development	Restricted Development
Accommodation (for students involved in aviation education/training)	Special Industry
Advertising	Waste transfer station
Aircraft operations and parking	
Ancillary development where associated with a listed Envisaged Development	
Animal keeping in the form of short term dog kennelling	
Aviation education establishment and academy	
Aviation-related support industry	
Bulky goods outlet	
Child care centre	
Cold storage facilities	
Consulting room	

Table 7-6: Enterprise Precinct categories of development

ENTERPRISE PRECINCT	
Performance Assessed– Envisaged Development	Restricted Development
Data centre	
Earthworks and engineering works	
Freight and/or distribution centre	
General industry	
Indoor recreation facility	
Light industry	
Motor repair station	
Navigational aid	
Office	
Outdoor recreation and/or amusements	
Public service depot	
Quick Service restaurant	
Rail transport terminal and rail lines	
Remote piloted aircraft services	
Recreational area	
Research, innovation and/or incubation facility	
Restaurant	
Retail fuel outlet	
Road transport terminal	
Runway-related activities/facilities	
Service depot	
Service trade premises	
Shop	
Store	
Telecommunications and communications facility	
Temporary uses and structures where associated with a listed Envisaged Development	
Tourist accommodation	
Utilities and/or infrastructure	
Vehicle parking and/or storage	
Warehouse	
Weather and atmospheric testing facilities	
Sensitive Development	
Tertiary Education	

Table 7-6: Enterprise Precinct categories of development (continued)

7.8 Alignment with Surrounding Land Uses

Land uses surrounding Parafield Airport are varied. Notwithstanding the introduction of a new South Australian planning system in 2021, there have been limited changes to the zoning or nature of land uses surrounding the airport since 2017.

The primary land uses occurring on land within proximity of Parafield Airport are industrial, commercial, residential, recreational and educational in nature. These uses are occurring on land held across a range of employment, neighbourhood and recreational type zones. Figure 7.8 illustrates the use of land surrounding the airport.

Land to the immediate north-east (Salisbury South) and south-east (Para Hills West and Pooraka) is zoned Strategic Employment and Employment and used for industrial and commercial purposes. There remains a large area of vacant land to the immediate north-east of Parafield Airport, (fronting Kings Road and Main North Road) which is within a Retail Activity Centre Subzone. This Subzone is intended to accommodate large format retail and commercial activities. This land is subject to a number of airport safeguarding considerations.

Land to the south of Parafield Airport accommodates the Mawson Lakes golf course, University of South Australia and the Mawson Lakes City Centre.

The remaining land surrounding the airport is primarily zoned General Neighbourhood, Urban Neighbourhood and Housing Diversity Neighbourhood (residential-type zones) and includes the suburbs of Mawson Lakes, Green Fields, Parafield Gardens, Salisbury Downs, Salisbury East and Para Hills West.

PAL will continue to monitor off-airport development, including proposals to amend policy or rezone land, which affects ongoing operation of the airport. Specific issues for consideration relate to the location of new land uses in relation to aircraft flight paths and, along with siting, height and scale of development which may negatively impact airport operations now and into the future. Further information on airport safeguarding is provided in Section 12.

7.9 Consistency with State and Local Planning Framework

This Land Use Plan has, where feasible, been developed using terminology consistent with the Planning, Development and Infrastructure Act 2016 (SA) and complements the South Australian Planning and Design Code as it applies to land surrounding the Parafield Airport Estate.

The land uses listed in the categories of development tables for each precinct (Tables 7-2 to 7-7) are generally based on the definitions contained in the Planning and Design Code, with additional uses that are specific to Parafield Airport, for example aviation related support industry. PAL will apply these land uses and interpret all definitions as required for the operation and development of Parafield Airport.

PAL will continue to monitor off-airport development, including proposals to amend policy or rezone land, which affects ongoing operation of the airport.

Specific issues for consideration relate to the location of new land uses in relation to aircraft flight paths and, along with siting, height and scale of development which may negatively impact airport operations now and into the future.

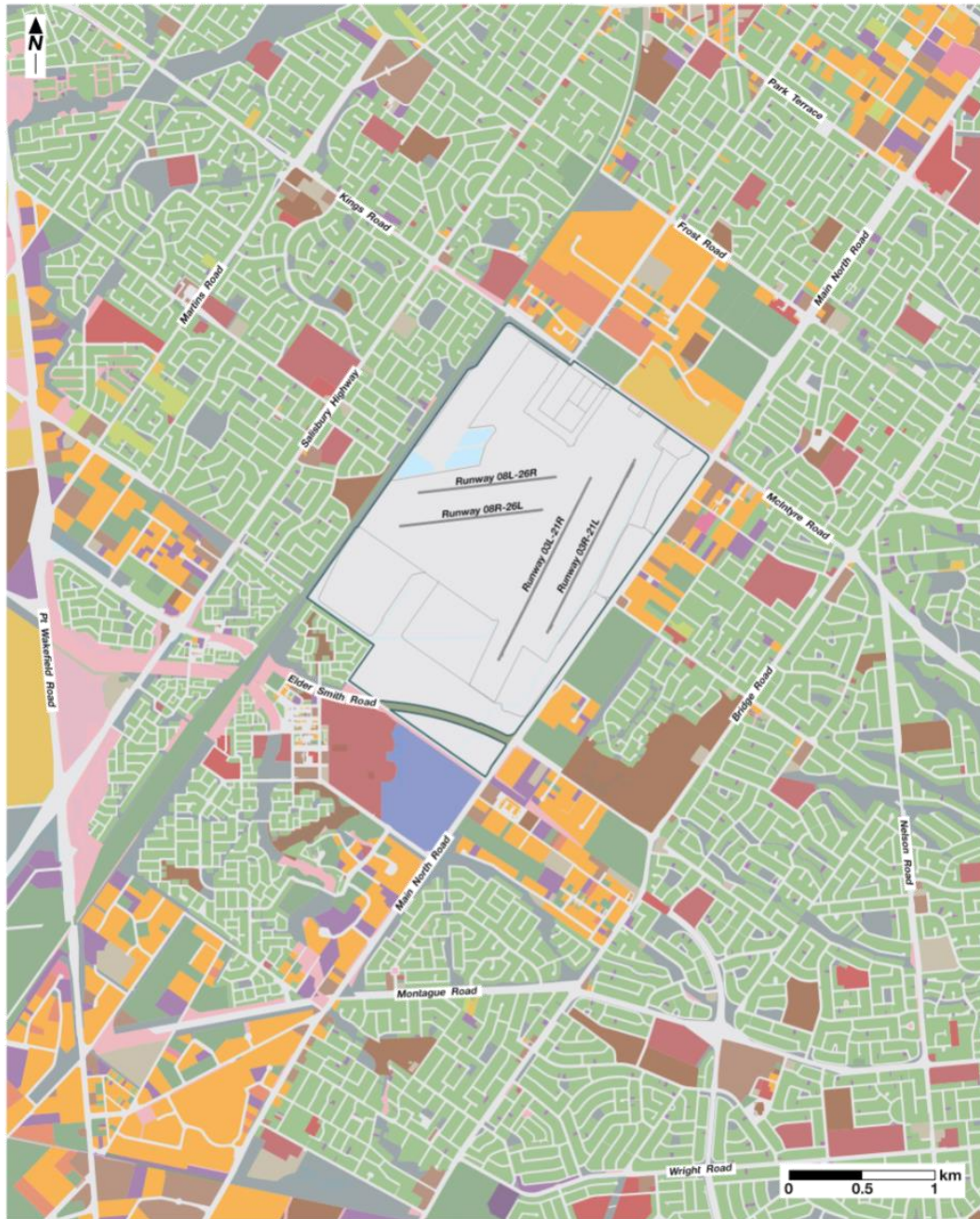


Figure 7.8: Land uses surrounding Parafield Airport: Source: Land Use Generalised 2022 – Data.SA

7.10 Sensitive Development

Section 71A of the Airports Act 1996 requires the Master Plan to identify any proposed sensitive developments. A sensitive development is defined as development, or redevelopment that increases capacity of the following:

- A residential dwelling
- A community care facility
- A pre-school
- A primary, secondary, tertiary or other educational institution
- A hospital.

Sensitive developments do not include the following:

- Aviation education facility
- Accommodation for students studying at an aviation education facility at the airport
- A facility with the primary purpose of providing emergency medical treatments which does not have in-patient facilities
- A facility with the primary purpose of providing in-house training to staff of an organisation conducting operations at the airport.

Sensitive developments are permitted under exceptional circumstances. The exceptional circumstances must be demonstrated before the Commonwealth Minister for Infrastructure agrees to a Major Development Plan being prepared for the proposed development.

This Master Plan 2024 identifies one potential future sensitive development within the Enterprise Precinct for tertiary education. While no specific site within the Enterprise Precinct has been identified for this land use, there is recognition that this precinct is in close proximity to the existing University of South Australia campus at Mawson Lakes, and there are limited opportunities available for the university to expand in its current location.

This is particularly relevant within the context of the planned amalgamation of the University of South Australia and University of Adelaide in the coming years. There are areas within this precinct which are either outside the Australian Noise Exposure Forecast (ANEF) contours or located within the lowest ANEF noise contours. Based on Australian Standard AS2021:2015 (Acoustics – Aircraft noise intrusion – Building siting and construction), development of an education establishment is acceptable in areas outside of the ANEF contours and conditionally acceptable in areas within the 20 to 25 ANEF contours, enabling the siting of an education establishment with certain design outcomes.

The potential future land use for an education establishment is aligned with the zoning and land uses anticipated on off-airport land to the immediate south. If a decision is made to proceed with a sensitive development, PAL must apply to the Minister, outlining the exceptional circumstances as per section 89A of the Airports Act 1996, and seek approval to prepare a draft Major Development Plan.

7.11
Changes from
Master Plan 2017

The land use plan described in this Master Plan 2024 has evolved from the land use plan contained in the Master Plan 2017, with the following changes:

- Updating the structure of precinct land use plans, categories of development tables, and procedural approach to bring the land use plan into alignment (where feasible) with the changes to the South Australian planning system made in 2021 (see Section 4)
- Inserting new Policy Areas within the Airport Business Precinct which delineate specific area and provide additional protection and expansion of aviation interests
- Renaming the Airport (Parafield) Zone to the Parafield Airport Estate
- Updating the approach within each precinct to reduce repetition and duplication
- Reflecting amendments made in the Environment Strategy (Section 14) related to the future management of the vernal pools located in the Bennett and Enterprise Precincts.

7.12
Pre-Existing Interests

There are several leases which existed prior to PAL taking over the management and operation of Parafield Airport in 1998. These pre-existing interests are listed in Table 7-7.

ORGANISATION	PURPOSE	LOCATION
Airservices Australia	Control Tower Site	Airport Business Precinct
Fun Trading	Tavern/hotel	Commercial Precinct
Bruce Hartwig Flying School	Flying School and Hangar	Airport Business Precinct
SAATAS Pty Ltd	Hangar	Airport Business Precinct
Bunnings Building Supplies	Hardware	Commercial Precinct
Maltara Holdings	Retail/bulky goods	Commercial Precinct

Table 7-7: Pre-Existing Interests

There are several existing easements over the Parafield Airport Estate which are discussed in Section 11. In any proposal for future development of land, PAL will act consistently with the obligations or interests that exist with pre-existing interests and service providers.

7.13 Development Assessment Process

7.13.1 Development Assessment

Under the Airports Act, control over land-use planning and development on the airport remains with the Commonwealth Minister for Infrastructure. PAL is required to make decisions on development proposals that are consistent with the approved Master Plan.

The development assessment process described in this Master Plan 2024 aligns with the current South Australian planning system (see Section 4).

Figure 7.9 indicates the development decision matrix for specific forms and types of development at Parafield Airport. The decision-making steps in this process include:

- The decision of PAL to lease land for particular forms of development
- The decision of airport regulators (such as the Department of Infrastructure, Transport, Regional Development, Communications and the Arts, Airservices Australia and the Civil Aviation Safety Authority) to accept development which is compatible with airport operations
- The decision of PAL as to the appropriateness (or otherwise) of the development against the approved Master Plan. This discretionary decision considers:
 - › The desired character, desired outcomes and assessment criteria for the relevant precinct
 - › The general consistency with the concept plans for the relevant precinct.
- Considering whether the proposed development is classified as a sensitive development as defined by the Airports Act
- Considering whether the proposed development triggers the requirement for a major development plan, as defined under the Airports Act, including developments which may have a significant impact on the community.

If a development proposal is not identified within the relevant Precinct as 'Performance Assessed – Envisaged' or 'Restricted', it will be processed as 'Performance Assessed - Merit' use. A Performance Assessment – Merit use application means that PAL will assess the proposal based on its merits. The assessment pathway for a Performance Assessment – Merit application is similar to that of Performance Assessed – Envisaged land uses, however, the merit proposal may be subject to an agency referral and public consultation process prior to a decision being made by PAL on whether to approve the application. This ensures that where a proposal has not been expressly identified as envisaged or restricted, appropriate consideration is given to the potential impacts. This is detailed in the development decision matrix at Figure 7.8.

Should an application be subject to the public notification process, PAL may invite written submissions by placing a notice of the proposed development on the PAL website and in a digital copy of a newspaper circulating within the region and provide advice to the members of the Parafield Airport Consultative Committee and the Parafield Airport Planning Coordination Forum with regards to the proposed development. Such a process will assist in informing key groups/affected persons of the proposed development and a period of 10 business days will be provided for the lodgement of written submissions. Submissions will be considered by PAL prior to any decision being made on the proposed development.

If a development proposal is identified as being restricted within the relevant precinct, and the proposal is considered by PAL to have merit, consideration of an application could trigger a Minor Variation to the Parafield Airport Master Plan under Section 84A of the Airports Act. An application for a Minor Variation to the Master Plan would be subject to a public comment period and consideration and decision by the Minister.

Development Decision Matrix

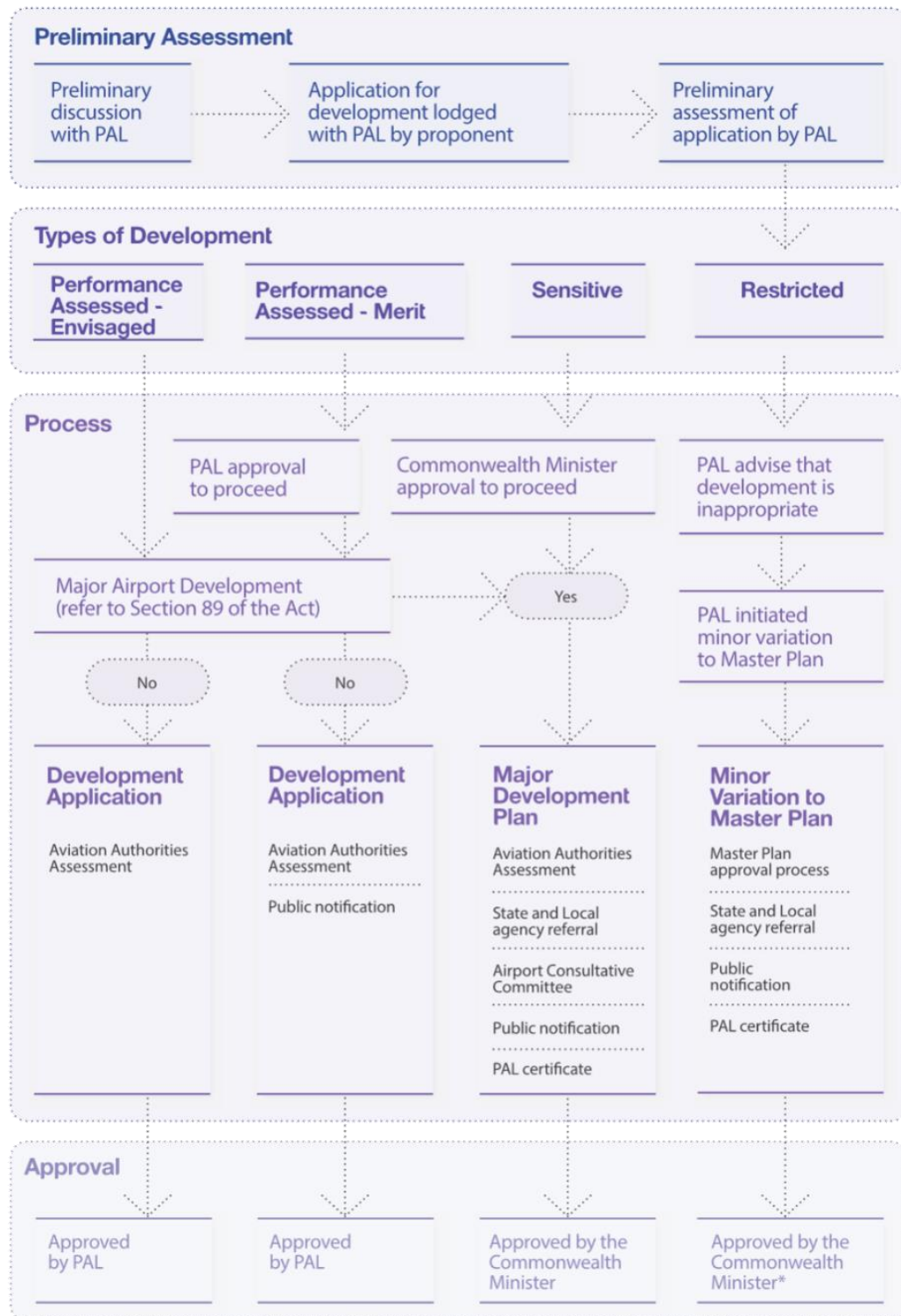


Figure 7.8: Parafield Airport development assessment matrix

7.14 Building Assessment Process

All development on airport land is subject to building approvals consistent with the provisions of the *Airports (Building Control) Regulations 1996*. This process is similar to the Building Rules Assessment process under the South Australian planning system.

Figure 7.9 provides an outline of the Development and Building Approvals process.

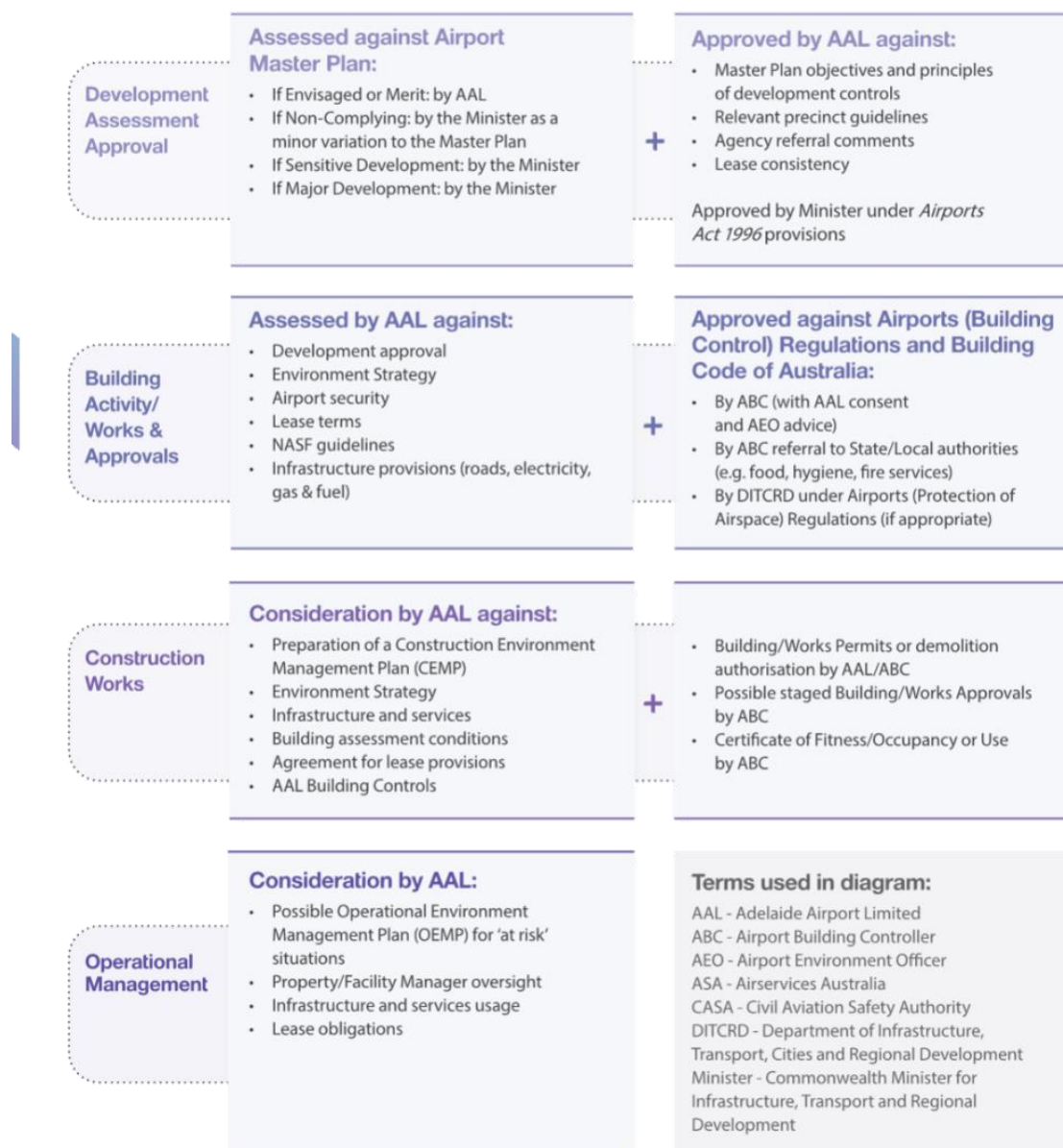


Figure 7.9: Development and building approvals process



8.1 Introduction

Fundamental to the successful operation of Parafield Airport is the ongoing development of the airfield to meet the forecast demand in the future. The airfield is the area of the airport used for aircraft operations. It includes the runways, taxiways, aprons and parking stands, as shown in Figure 8.1.

The number of annual aircraft movements forecast by 2043 is predicted to increase by 27 per cent based on actual aircraft movements in 2019, and nearly 55 per cent based on the movement forecast for 2023. Parafield Airport Limited (PAL) has considered these forecast increases and planned for the development of aviation infrastructure to enable the growth in aircraft movements to occur in a well-planned and efficient manner.

8.2 Overview

- The existing runway system provides sufficient capacity to handle the forecast volumes of air traffic up to and beyond the 20-year planning horizon of this Master Plan 2024
- The first eight years of the Master Plan, to 2031, will focus on expansion of airfield infrastructure to improve efficiency, working to a staged program of development
- Areas to the west of the existing apron area will be retained for further aircraft parking and provision of additional aviation related support industries, such as hangars
- Opportunities to improve helicopter operations and facilities are proposed over the 20-year planning horizon
- New technologies, such as electric aircraft, will require electrical services to be provided within apron areas for charging batteries.



90 PARAFIELD AIRPORT

8.3 Airfield Planning

Airfield infrastructure is planned and designed according to international and national standards. The Civil Aviation Safety Authority (CASA) is responsible for developing the detailed technical requirements that are necessary for the safety of aerodromes and air navigation of airports in Australia.

The Part 139 (Aerodromes) Manual of Standards of the Civil Aviation Safety Regulations 1998 sets out the standards for airfield infrastructure. These standards are established on reference codes that have a code number, which refers to the aircraft reference field (runway) length, and a code letter that refers to a grouping of aircraft types based on the aircraft wingspan and wheel track.

The main aircraft types that operate at Parafield Airport are Code A, such as the Diamond DA40, Cessna 172 and Diamond DA42 aircraft. The current infrastructure also supports Code B aircraft such as the Beechcraft Kingair and the Fairchild Swearingen Metroliner which regularly operate at Parafield Airport.

8.4 Recent Developments

Between 2017 and 2023, the following airfield infrastructure improvements have been undertaken:

- Surface spray treatment of Runway 03R/21L to extend its usable life
- Widening of Taxiway S from Code A to Code B compliance
- Southern apron expansion to accommodate parking for additional aircraft.



The existing runway system provides sufficient capacity to handle the forecast volumes of air traffic up to and beyond the 20-year planning horizon of this Master Plan 2024

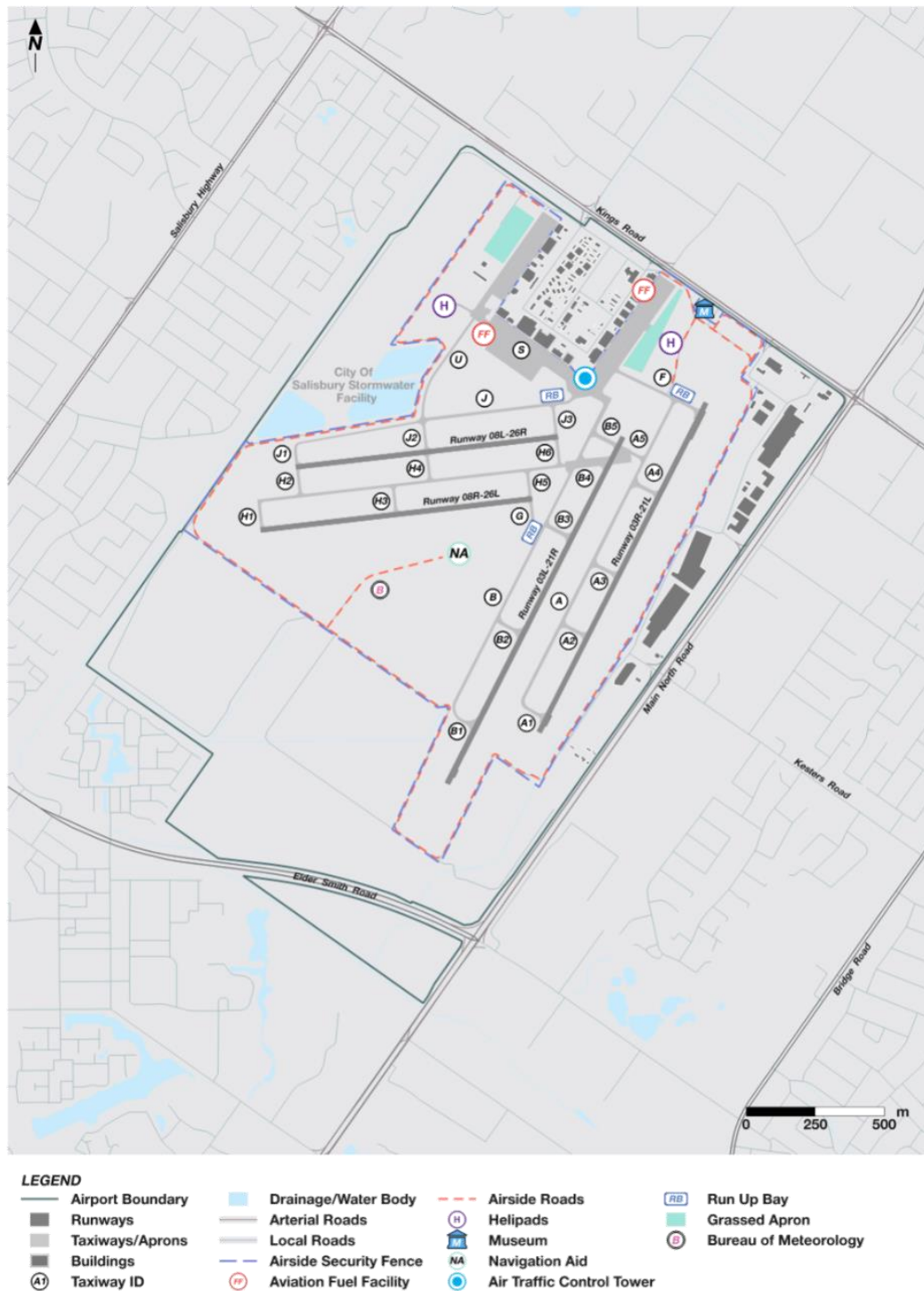


Figure 8.1: Existing airfield layout

8.5 Airfield Development Plan

8.5.1 Airfield Development Triggers

The need to construct new, extend or improve airfield infrastructure may be triggered for a number of reasons, including:

Runways

- Annual aircraft movements for long-term planning
- Introduction of new aircraft types
- Maintain safe and compliant infrastructure
- Changes to legislation and airfield infrastructure design standards

Taxiways

- Reducing taxiing distances, delays, fuel burn and emissions
- Introduction of a new aircraft types
- Maintain safe and compliant infrastructure
- Changes to legislation and airfield infrastructure design standards

Aprons and associated hangars

- Increasing demand for aircraft parking
- Introduction of a new aircraft types
- Maintain safe and compliant infrastructure
- Changes to legislation and airfield infrastructure design standards

PAL works closely with aircraft operators to make sure that the airfield infrastructure is fit for purpose. Planning for airfield infrastructure also requires close collaboration with CASA and Airservices Australia to ensure operational safety and efficiency.

The planned developments for airfield infrastructure over the 20-year planning period are shown in Figure 8.2 and described below.

8.5.2 Runways

Runways are the backbone of airport infrastructure. Parafield Airport has four runways, arranged in parallel pairs in two directions. Runway names are determined by the compass bearing of the runway direction, for example Runway 03 refers to a compass bearing of around 30 degrees. For parallel runway systems, the runway naming convention uses L for 'left' and R for 'right'.

The main runway direction is oriented north to south and consists of:

- Runway 03R/21L, which is 1279 metres long and 18 metres wide
- Runway 03L/21R, which is 1350 metres long and 18 metres wide.

The secondary direction is oriented east to west and consists of:

- Runway 08L/26R, which is 958 metres long and 18 metres wide
- Runway 08R/26L, which is 992 metres long and 18 metres wide.

All runways at Parafield are Code 2 runways, capable under operational variation to cater for up to Code 2B size aircraft. The aircraft pavements are generally unrated and nominally able to accommodate aircraft with a maximum take-off weight up to 5,700 kilograms. Heavier aircraft may operate, subject to an approved pavement concession.

The current runway infrastructure is suitable to accommodate both existing and forecast aircraft traffic over the next 20 years, with only maintenance-driven development proposed to extend the useable life of the runways. This includes:

- Surface spray treatment of runways 03L/21R, 08R/26L, 08L/26R
- Upgrade of runway lighting for Runway 03L/21R
- Re-sealing as required.

Previous Parafield Airport master plans, including Master Plan 2017, identified that long-term future demand may require Code 3C aircraft to be accommodated through the extension and widening of the existing main runway 03L/21R. Following updates to the Part 139 (Aerodromes) Manual of Standards in 2020, upgrades to cater for Code 3C aircraft would impact Taxiway B and the secondary runway system. Therefore, PAL continues to plan for the ability to adapt the airfield infrastructure to Code 3C aircraft, however this is anticipated to be outside of the 20-year planning period of this Master Plan.

8.5.3 Taxiways

Taxiways are provided for the safe and expeditious movement of aircraft between aprons, run-up bays and runways. Both parallel runway system configurations are provided with a network of parallel and short stub taxiways.

The existing taxiway system provides sufficient runway and apron access for arriving and departing aircraft to handle the forecast volumes of air traffic. The following proposed developments are either maintenance driven or provide opportunity to improve efficiency.

- Sealing of Taxiway A to maintain safety and improve efficiency (planning underway)

- Extension of Taxiway B to the end of Runway 03L/21R in order to improve safety and efficiency. Aircraft requiring the full length of the runway on either departure or arrival currently have to backtrack along the runway to get on or off, delaying other operations
- Granular re-sheeting or sealing of Taxiway J in order to maintain safety and improve efficiency
- Surface spray treatments and re-sealing as required to extend useable life.

8.5.4 Run-up Bays

Run-up bays are located adjacent to taxiways to enable aircraft engine run-up checks to be undertaken prior to departure, without obstructing taxiways and other aircraft ground traffic.

Parafield Airport has three designated engine ground run-up bays. The run-up bays are currently at capacity during peak periods, resulting in aircraft having to queue on the apron. The following upgrades are proposed:

- Expansion of run-up bay J
- Expansion of run-up bay B
- Construction of a new run-up bay at the end of Taxiway B. It is anticipated that the new run-up bay would be used primarily as a holding bay to allow aircraft to wait and pass, but would also be used for engine run-up testing when needed
- Surface spray treatments and re-sealing as required to extend useable life.

8.5.5 Aprons and Hangars

Apron parking areas and hangars 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 and Air Traffic Control tower, providing apron parking for approximately 120 aircraft up to Code B size. Designated grassed aircraft parking areas are also used for longer term parking and could be extended to provide additional hardstand aircraft parking capacity.

Any requirement for additional sealed apron parking will most likely be triggered by increases in aircraft traffic from the flying schools and can potentially be accommodated through expansion of the southern apron or in the expanded hangar and apron development area proposed adjacent to the existing western apron. The expanded western apron is also anticipated to cater for additional demand generated by other general aviation interests.

The forecast uptake and growth of electric aircraft (see Section 6) will require electrical services to be provided within apron areas for charging. Dependent on demand and the requirements of each aircraft and operator, power could be provided for each operator individually or alternatively within a common-use area designated for charging.

8.5.6 Helicopters

The current operations of helicopters at Parafield Airport are largely associated with pilot training and account for five per cent of total aircraft movements.

There are two designated helicopter landing facilities (helipads), referred to as Helipad East and Helipad West, as shown in Figure 8.1. Helipad West is more heavily used due to its proximity to parked helicopters on the southern and western aprons. It is also less constrained by runway operations compared to Helipad East, which requires helicopter departures and arrivals to be sequenced with aircraft using Runway 03L/21R. The grassed area north of Helipad West is also used on occasion for helicopter departures and arrivals, such as Black Hawk helicopters, which also operate from Helipad West.

The grassed area between Runway 08R/26L and Runway 03L/21R is currently used for helicopter autorotation and hover training.

The existing helicopter facilities have sufficient theoretical capacity to meet future demand. However, the preference for operations from Helipad West, limitations for operations from Helipad East and constraints with runway operations have led to consideration of alternative locations for helicopter facilities which allow for more efficient operations and to optimise existing infrastructure. The relocation of helicopter facilities will require consideration of airfield design standards, the impacts on other aircraft operations and potential aircraft noise exposure. Potential locations include:

- New Helipad South located between 08R/26L and 03L/21R. This creates greater separation between helipad activities and residential areas to the north-west and the existing and proposed future development within Airport Business Precinct
- Relocation of Helipad West adjacent to Taxiway J
- Maintaining an area between 08R/26L and 03L/21R for helicopter auto rotation and hover training in the short term, with proximity to the proposed new Helipad South. In the long term, consideration to be given to the establishment of training areas above non-duty runways towards the 08 and 03 ends of the runways

- Potential new helicopter parking and maintenance facilities within the Enterprise Precinct in the long term, adjacent to proposed new Helipad South
- Retain Helipad East for additional capacity.

8.5.7 Future Technologies

There have and will continue to be substantial developments in emerging and innovative aviation technologies, which include the use of sustainable and alternative aviation fuels, electric aircraft, drones for parcel delivery, and vertical take-off and landing (VTOL) aircraft which may be piloted or autonomous and used for a variety of purposes such as private air vehicle, air taxi, freight or health transportation of goods and/or people.

Technological advances in the VTOL sector have progressed in recent years and the market size is expected to grow in the coming years. The technology itself continues to be trialled successfully globally, however the regulatory frameworks and ground infrastructure required to support the technology are still in development stages and social acceptance of the technology is yet to be fully understood.

In November 2022, CASA issued Advisory Circular 139.V-01 v1.0 Guidelines for vertiports design, which provides initial guidance to industry to support the safe and efficient operation of VTOL aircraft operating with a pilot on board.

This has enabled PAL to commence planning for such a facility should the technology and demand be realised. One potential location for these facilities is the area between Runway 08R/26L and Runway 03L/21R within the Runways Precinct, adjacent to proposed future helicopter facilities, has been identified as a potential location noting the similarities between helicopters and VTOL aircraft (refer Figure 8.2).

PAL will continue to monitor emerging technologies. Adaptable staging and timing of infrastructure investment allows PAL to consider and respond to opportunities for incorporating innovative and sustainable options.

8.5.8 Development Plan

The 8-Year Development Plan and the 20-Year Development Plan are detailed in Table 8-1 and Table 8-2, respectively, and illustrated in Figure 8.2. The proposed changes will be implemented as triggers are approached defined by future growth and consultation with relevant authorities and airport users.



TYPE	POTENTIAL PROJECT	BENEFIT
Runways	Surface spray treatment of runways 03L/21R, 08R/26L and 08L/26R	Extend usable life of infrastructure
	Upgrade of runway lighting for runway 03L/21R	Maintain compliance with airfield standards
	Re-sealing of runways as required	Extend usable life of infrastructure
Taxiways	Sealing of Taxiway A	Improve airfield efficiency
	Surface spray treatments and re-sealing as required	Extend usable life of infrastructure
Run-Up Bays	Expansion of run-up bay J	Improve airfield efficiency
	Expansion of run-up bay B	Improve airfield efficiency
	Surface spray treatments and re-sealing as required	Extend usable life of infrastructure
Aprons	Installation of electrical services for charging of electric aircraft	Support transition to electric aircraft
	Expanded hangar and apron development area adjacent to the existing western apron	Increased aircraft parking capacity

Table 8-1: 8-Year Airfield Development Plan

TYPE	POTENTIAL PROJECT	BENEFIT
Runways	Re-sealing of runways as required	Extend usable life of infrastructure
Taxiways	Extension of Taxiway B	Improve airfield efficiency
	Granular re-sheeting or sealing of Taxiway J	Improve airfield efficiency
	Surface spray treatments and re-sealing as required	Extend usable life of infrastructure
Run-Up Bays	Construction of new run-up bay on Taxiway B	Improve airfield efficiency
Aprons	Expansion of southern apron	Increased aircraft parking capacity
	Expanded hangar and apron development area adjacent to the existing western apron	Increased aircraft parking capacity
Helicopters	Potential relocation of helipad facilities	Reduced operational constraints

Table 8-2: 20-Year Airfield Development Plan

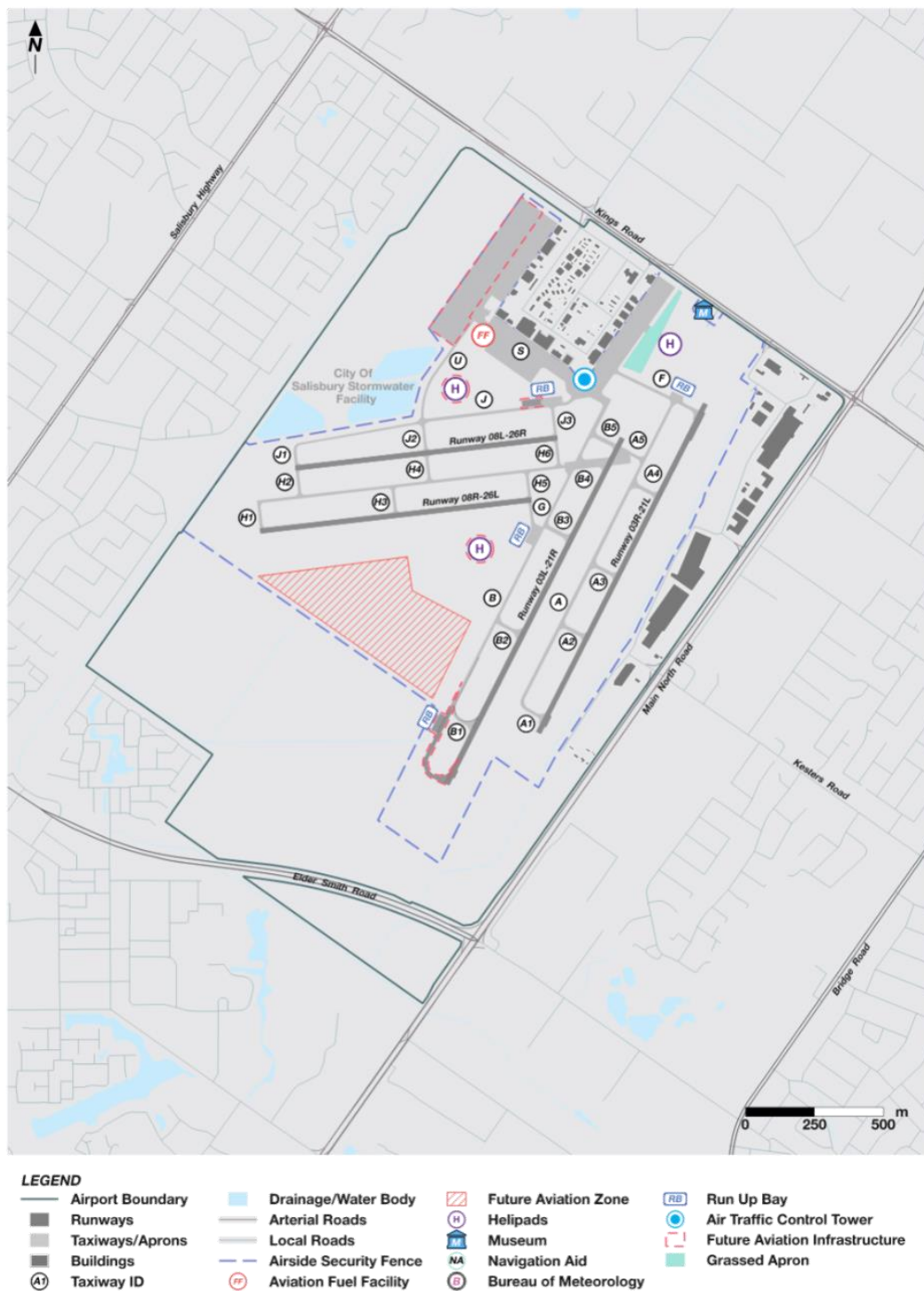


Figure 8.2: Planned airfield layout to 2043

8.6 Airfield Support Infrastructure

A range of aviation support infrastructure is provided to ensure safe air navigation and aircraft operation at Parafield Airport.

8.6.1 Airservices Australia

Airservices is Australia's air navigation service provider, responsible for providing Air Traffic Control, navigational aids and aviation rescue and firefighting services to various airports throughout Australia. Airservices has the following facilities at Parafield Airport.

8.6.1.1 Air Traffic Control Tower

The Air Traffic Control tower was opened in 1940 and is centrally located, providing line of sight for air traffic controllers to all of the runways and taxiways. No significant works or upgrades to this facility are envisaged as part of this Master Plan.

8.6.1.2 Navigational Aids

Airservices maintains a ground based Non-Direction Beacon (NDB) and GPS based approach, both of which provide location navigation for aircraft arrivals and departures.

Both approach types are rarely utilised by aircraft operators. The NDB is included in a broader Airservices program for decommissioning as new air navigation systems are rolled out across Australia. PAL will work with Airservices to understand the timing of potential decommissioning of the NDB and consider whether there is merit in advancing separate actions to accelerate this process.

8.6.2 Bureau of Meteorology

The Bureau of Meteorology has an Automatic Weather Station which provides automated weather information to pilots and air traffic controllers.

8.6.3 Runway Lighting

Night operations are facilitated on Runway 03L/21R which has low intensity runway lights. These lights are activated manually during Air Traffic Control tower hours and displayed continuously outside of tower hours.

8.6.4 Aerodrome Beacon

An aerodrome beacon is located on top of the Air Traffic Control tower to provide a visual cue for pilots to identify the location of the airport. The beacon is only available during tower hours. It is likely this will be removed during the planning period.

8.6.5 Aviation Fuel

The safe and reliable supply of aviation fuel, both conventional or emerging types, is critical to continued and future air services at Parafield Airport. There are two aviation refuellers located at Parafield Airport. Fuel is provided to aircraft by mobile refueling vehicles. Individual fuel storage facilities are also operated by aircraft operators and are located on airport.

8.6.6 Aircraft Maintenance

There are a range of aircraft maintenance facilities currently located at Parafield Airport, including:

- Aircraft parts and accessories
- Aeronautical manufacturer
- Electrical services
- Engine overhaul and testing
- Airframe maintenance and repair
- Avionics maintenance
- Propeller overhaul and testing
- Aircraft painting.

There remains opportunity for expansion of maintenance facilities to meet demand or cater for emerging technologies within both the Airport Business Precinct and the future aviation zone within the Enterprise Precinct.

8.6.7 Airfield Maintenance

Airfield maintenance facilities are essential to maintaining an airport. They are used to store materials for maintenance on plant and equipment, pavement repairs, airside vehicles, radio, communications and other electrical equipment. PAL's maintenance facility is located on Tiger Moth Lane alongside the Airport Management Centre.



Commercial
Development

9

9.1 Introduction

Parafield Airport is one of the largest private commercial land holdings within the northern Adelaide metropolitan area. Parafield Airport Limited (PAL) continues to identify and leverage opportunities that add value to the airport's traditional aviation focused business activities by maximising the development of airport land not required for aeronautical purposes. Such development will complement and enhance future airport operations, support the delivery of a wide range of services and facilities needed by airport users, and create employment opportunities, which will contribute to the local economy as well as the gross state product.

9.2 Overview

- Commercial development will continue within the Airport Business Precinct, including a childcare centre, the redevelopment of existing sites, and new developments occurring within the land adjacent to the railway line
- Industrial and commercial development will commence within the Enterprise Precinct
- Retail and commercial development will occur on the remainder of the developable land within the Commercial Precinct.



100 PARAFIELD AIRPORT

9.3 Recent Developments

Since Master Plan 2017 was approved, much of the commercial development that has occurred at Parafield Airport has been within the Commercial Precinct. Key commercial developments since 2017 (including developments recently approved) are detailed in Table 9-1 and shown in Figure 9.1.

DEVELOPMENT	DESCRIPTION
Airport Business Precinct	
Parafield Ambulance Station	New ambulance station constructed for SA Ambulance Service
Aerotech Hangar	Site redevelopment and construction of new hangar
Parafield Childcare Centre	Works underway to construct a new childcare centre (due for completion 2024)
Commercial Precinct	
HomeCo	Repurpose of the ex-Masters building. Current tenants include Officeworks, Supercheap Auto, Tradezone and Tool Kit Depot
Parafield Service Centre	Construction of a bulky goods retail centre anchored by Sydney Tools, RSEA Safety and KFC
	Construction of a bulky goods, service trade and indoor recreation centre
District Outlet Centre	Construction of a 15,000m ² indoor premium retail outlet centre with more than 50 brands.
Rivergum Homes Display Centre	Relocation of the Rivergum Homes Display Centre to its new location in 2018

Table 9-1: Recent commercial developments at Parafield Airport

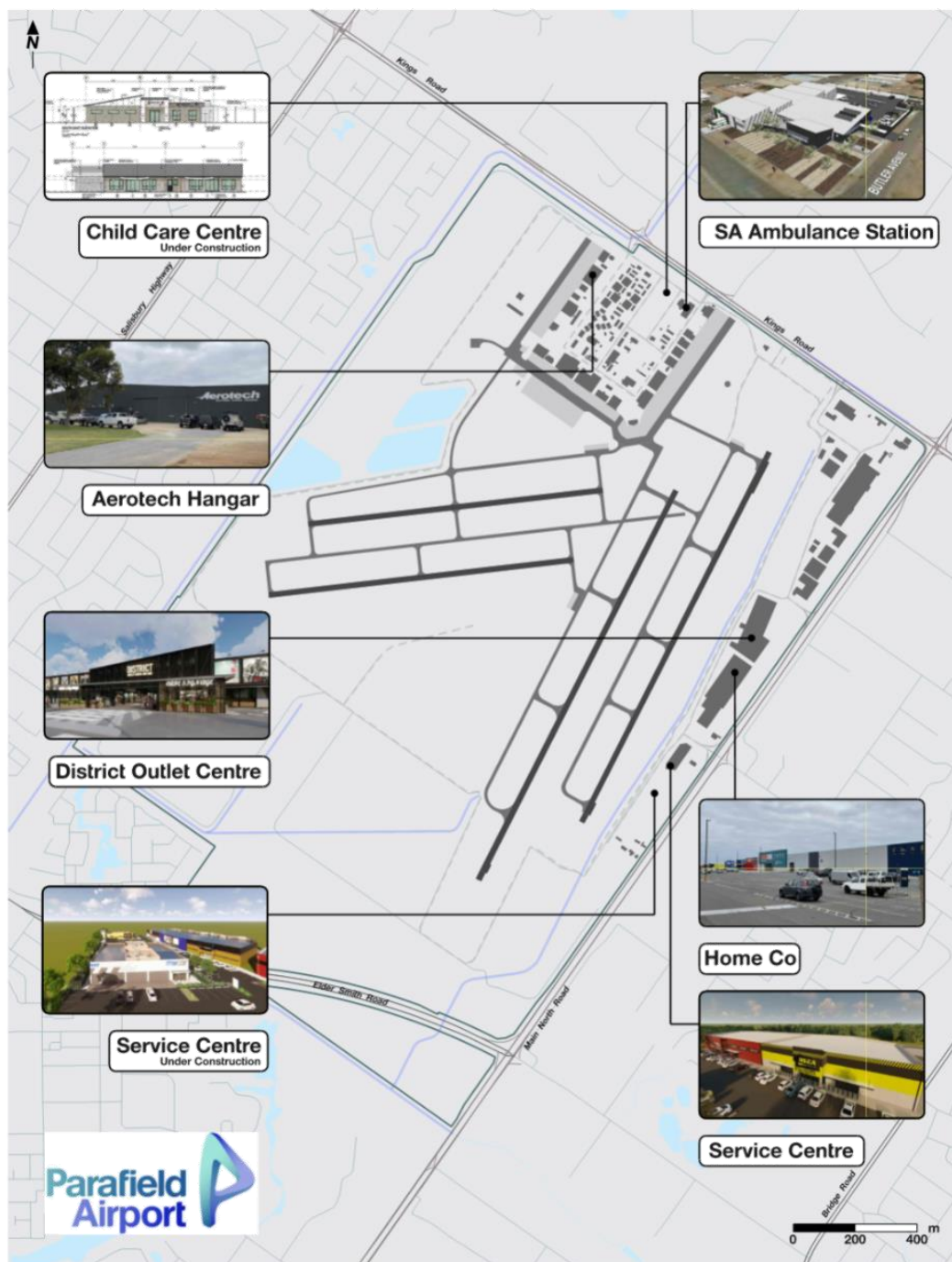


Figure 9.1: Recent commercial developments at Parafield Airport

9.4 Commercial Property Strategy

As discussed in Section 4, Parafield Airport is a substantial economic and employment generator in Northern Adelaide, with this region being recognised as a major growth corridor. The Land Supply Report for Greater Adelaide: Part 3 Employment Land (2021), published by Plan SA, identifies low availability of vacant land for industrial and commercial activities within the region that Parafield Airport is located.

Supporting the demand for development land in the Northern Adelaide region is the incremental completion of one of Adelaide's most important transport corridors, the North-South Corridor. Once completed, this corridor will be a 78-kilometre uninterrupted link between the northern and southern ends of metropolitan Adelaide.

The availability of large vacant landbanks at Parafield Airport, as well as the airport's geographical location and connectivity to major infrastructure, provide an opportunity to meet growing demand for industrial and commercial land in a manner that is aligned with both Adelaide and national trends. This includes demand for buildings with larger footprints and commercial offerings catering for specialised markets, such as defence and technology.

The Commercial Property Strategy presented in the Master Plan 2024 reflects the current planning for potential future commercial developments and economic predictions. The timing and scope of any future commercial developments at Parafield Airport are subject to a range of factors which are usually driven by market forces, including airport requirements, business viability, market demand and economic conditions. It is often challenging to predict the uptake and rollout of commercial developments as the different commercial segments often go in cycles which change rapidly depending on regional economic conditions.

Over the next eight years, it is anticipated:

- **Commercial development will continue within the Airport Business Precinct, including a childcare centre, the redevelopment of existing sites, and new developments occurring in the land adjacent to the railway line**
- **Industrial and commercial development will commence within the Enterprise Precinct**
- **Retail and commercial development will occur on the remainder of the developable land within the Commercial Precinct**

Over the 20-year horizon it is envisaged that the main focus for development will continue to be within the Airport Business and Enterprise Precincts.

Major industrial, freight and distribution developments noted in Master Plan 2017 for the Enterprise Precinct have not yet commenced but remain likely to occur over the 20-year horizon, subject to commercial demand. It is anticipated that Parafield Airport will continue to attract significant investment in industrial and commercial developments particularly as the supply of large scale, developable land with similar locational characteristics diminishes.

The envisaged industrial and commercial developments are consistent with the types of developments already located at the airport. Future commercial uses (as outlined in Section 7), including bulky goods retail, are complementary to the retail hierarchy surrounding the airport and the wider catchment areas. The development options planned for each of the precincts, encompassing the desired outcomes, desired character and assessment criteria, are detailed in Section 7.

The intentions for each precinct, as part of the Commercial Property Strategy, are discussed below.

9.4.1 Airport Business Precinct

Existing development within the Airport Business Precinct consists of hangars, aviation-related support industries, offices, ambulance station and flight training classrooms and student accommodation.

The amount of additional building area to be developed or upgraded in this precinct over the next eight years is estimated to be approximately 10,000 square metres, including a childcare centre and commencement of the development of the land adjacent to the railway line. Some existing under-utilised sites may also undergo re-development.

In the longer term, it is anticipated that up to 60,000 square metres of industrial, aviation-related and commercial developments could occur which may be driven by multiple large developments or a mix of smaller developments.

9.4.2 Commercial Precinct

Existing development within the Commercial Precinct consists of shops and bulky goods outlets, tavern, quick service restaurants and retail fuel outlet.

Over the next eight years it is expected that there could be expansion to existing bulky goods and large format retail developments or new developments, each up to 4,500 square metres building area and a new retail fuel outlet. The remainder of developable land is anticipated to be developed within the 20-year planning period of this Master Plan.

9.4.3 Bennett Precinct

The Bennett Precinct contains vernal pools located in the north-west portion of the precinct in a management zone designated by PAL (approximately 130,000 square metres). With suitable management, the zone could provide compatible activities to future development within the Bennett Precinct, including walking trails. Any ancillary promotional, research and commercial activities within the Bennett Precinct will be suitably buffered from the vernal pool localities and will be required to be compatible with the continued safe operation of aircraft.

9.4.4 Enterprise Precinct

The Enterprise Precinct is currently undeveloped and offers approximately 350,000 square metres of land that could be developed.

Over time, PAL has considered a variety of different development opportunities for this land however due to economic conditions at the time these developments have not proceeded. Subject to market demands, this area has great potential for commercial and industrial development however, the timing will be subject to market demands, economic factors and the initial development being of sufficient scale to justify the large investment in services and infrastructure required to commence a new commercial precinct.

It is anticipated that future development within a large proportion of the precinct will focus on industrial activity and a range of other uses such as commercial and office development, education, freight distribution, warehousing and storage and other technological industry, consistent with the aim of establishing an industrial park. An area to the north is set aside for aviation-related operations and support industries such as future helicopter operations and facilities and potential vertical take-off and landing facilities (see Section 7.7 and 8.5.7).

It is anticipated that two large industrial developments could occur in the next eight years. Further industrial and aviation-related developments would occur over the longer term, with the majority of the available land envisaged to be developed within the 20-year planning period of this Master Plan.

The Enterprise Precinct also contains an environmental management zone for the vernal pools of approximately 70,000 square metres. Any commercial activities within the Enterprise Precinct will be sited in a manner that ideally integrates the key areas of the vernal pools into the wider precinct amenities.



Parafield Airport is a substantial economic and employment generator in Northern Adelaide, with this region being recognised as a major growth corridor.

9.5 8-Year Commercial Development Plan

Table 9-2 details potential key developments within each precinct over the first eight years of the planning period of this Master Plan 2024. It includes details regarding the type of development, scale and associated development triggers. The timing of development is influenced by demand and economic circumstances and is therefore subject to variation. Other developments could proceed in each precinct and will be consistent with the planning processes and procedural matters detailed for each precinct in Section 7.

DEVELOPMENT TYPE	APPROXIMATE SCALE (Building area sqm)	DEVELOPMENT TRIGGER
Airport Business Precinct		
Childcare centre	1,000 sqm	Subject to approvals
Commercial	9,000 sqm	Subject to approvals and commercial demand
Enterprise Precinct		
Industrial (two)	50,000 sqm total	Subject to approvals and commercial demand
Commercial	500 sqm	Subject to approvals and commercial demand
Commercial Precinct		
Large format retail (two)	20,000 sqm each	Subject to approvals and commercial demand
Retail fuel outlet	400 sqm	Subject to approvals

Table 9-2: Potential 8-year commercial development plan

9.6 20-Year Commercial Development Plan

Table 9-3 details potential key developments within each precinct over the longer term of this Master Plan 2024. It includes details regarding the type of development, scale and associated development triggers. The timing of development is influenced by demand and economic circumstances and is therefore subject to variation.

DEVELOPMENT TYPE	APPROXIMATE SCALE (Building area sqm)	DEVELOPMENT TRIGGER
Airport Business Precinct		
Commercial	20,000 sqm	Subject to approvals and commercial demand
Industrial	20,000 sqm	Subject to approvals and commercial demand
Aviation-related	10,000 sqm	Subject to approvals and commercial demand
Enterprise Precinct		
Industrial (three)	200,000 sqm total	Subject to approvals and commercial demand
Freight/ logistics/ warehousing	50,000 sqm total	Subject to approvals and commercial demand
Commercial	45,000 sqm total	Subject to approvals and commercial demand
Commercial Precinct		
Commercial	5,000 sqm	Subject to approvals and commercial demand

Table 9-3: Potential 20-year commercial development plan



Ground Transport Plan

10

10.1 Introduction

Ground transport planning is essential to the development of Parafield Airport to ensure effective, safe and efficient access and connectivity for all users of the airport. Ground transport consists of roads for staff, visitors, public transport and cycleways.

Parafield Airport is located approximately 18 kilometres north of Adelaide Central Business District (CBD) and is well connected to the metropolitan road and rail networks, with three major arterial roads bordering the airport and providing transport links to metropolitan and regional areas and an adjoining rail corridor which caters for the northern metropolitan passenger line to Gawler along with the separate freight line connecting Adelaide with Darwin, Perth, Melbourne and Sydney. Kings Road to the north has direct connectivity to Port Wakefield Road and the Northern Connector, which is one of Adelaide's most important freight and transport corridors, while Elder Smith Road to the south provides connection to Salisbury Highway which also plays a significant role in providing strategic connections for the airport to the wider transport network including Port Adelaide. Both Kings Road and Elder Smith Road are designated B-double (truck) routes. To the east, Main North Road provides access to the CBD and the north-eastern metropolitan areas of Adelaide and is also a major freight route, forming part of the road train network. Connectivity to the Port of Adelaide is via Salisbury Highway and the Port River Expressway.

Figure 10.1 shows the road and rail network surrounding the Parafield Airport site and Figure 10.2 shows the location of the airport and its relationship to the CBD and wider metropolitan Adelaide road network.

Each day there are approximately 29,000 vehicle movements in and out of the airport, and by 2043 this is expected to reach approximately 66,000 daily vehicle movements. As Parafield Airport grows, it is critical that adequate consideration is given to future ground transport demands within, and adjacent to, the airport.

10.2 Overview

- Parafield Airport is well connected to metropolitan road and rail networks
- The Commonwealth and South Australian governments are continuing to invest in improvements to external infrastructure, including the construction of the River Torrens to Darlington portion of the North-South Corridor which will complete the corridor and provide efficient access for both visitors and freight
- Parafield Airport will continue to invest in new and improved ground transport facilities to support increased traffic demand as development continues.

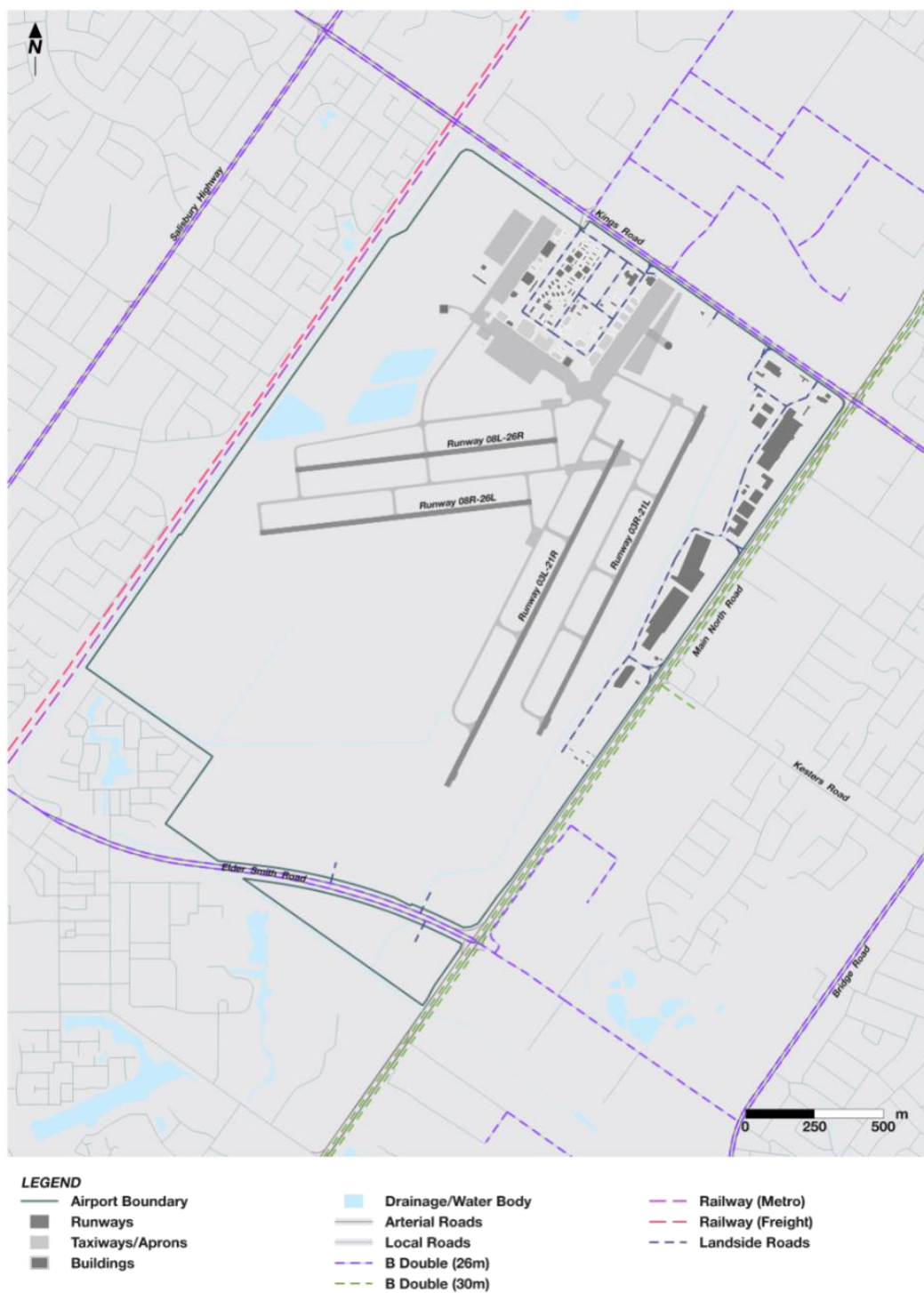


Figure 10.1: Existing external road and rail network surrounding Parafield Airport

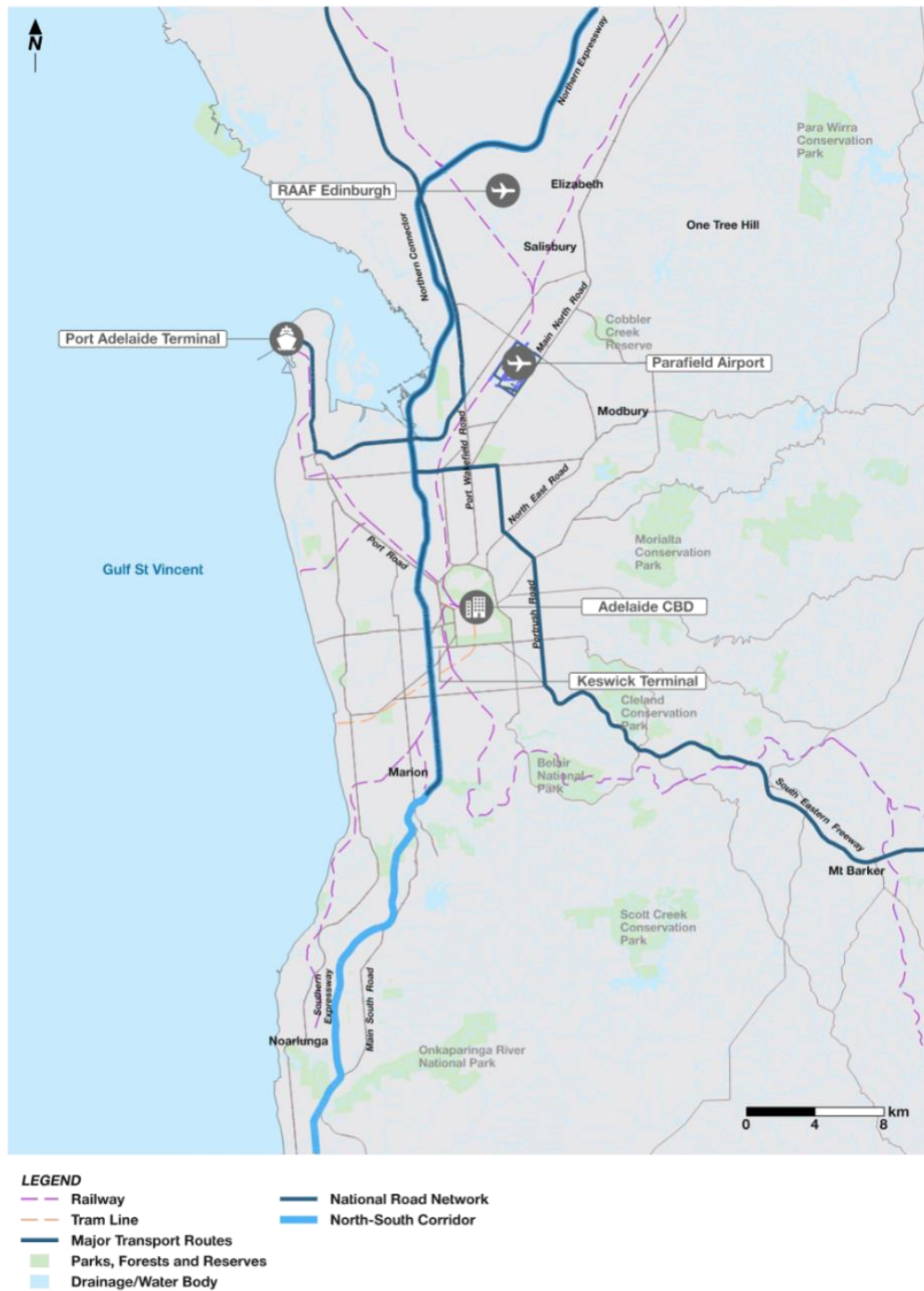


Figure 10.2: Wider metropolitan Adelaide road context

10.3 Responsibilities

Parafield Airport Limited (PAL) engages directly with the South Australian and local governments, as well as through the Parafield Airport Planning Coordination Forum (described in Section 5), to ensure that the future demands of the airport's operations and development are reflected in strategic network planning.

The key organisations and agencies involved in ground transport planning around Parafield Airport are:

- South Australia's Department for Infrastructure and Transport (DIT), which sets policy and strategic direction transport throughout the State; plans, constructs and maintains major road and rail infrastructure; and provides infrastructure planning for public transport systems
- The South Australian Public Transport Authority (SAPTA), which provides advice to the State government regarding the strategic direction of public transport initiatives and operational and customer services
- The City of Salisbury, which is the local government authority responsible for the planning, construction and maintenance of local roads adjacent to and surrounding the airport.
- PAL, which is responsible for the planning, construction and maintenance of roads within the airport site
- The Commonwealth Minister for Infrastructure, Transport, Regional Development and Local Government, who may provide funding to the South Australian government for major transport infrastructure projects (such as the North-South Corridor) and is responsible for approving the Ground Transport Plan as part of this Master Plan and any subsequent Major Development Plan (where required) for road network construction within the airport site.

10.3.1 Infrastructure Deed between State and Parafield Airport Limited

An agreement between the South Australian Government and PAL was entered into in 2020 which sets out principles and a framework for ground transport infrastructure works within, at the airport boundary and outside of the airport boundary, to ensure that ease of access to and from Parafield Airport is provided, as growth in aviation activity, commercial development and/or network activity is realised. The agreement details funding responsibility under various scenarios and trigger levels.

10.3.2 Deed for Signals at Elder Smith Road between State and Parafield Airport Limited

An agreement between the South Australian Government and PAL was entered into in 2006 for the future signalisation of the existing Elder Smith Road intersection, should traffic volumes to and from the Enterprise Precinct trigger the requirement.

10.4 Airports Act 1996 Requirements

The *Airports Act 1996* requires a Master Plan to include a plan for a ground transport system on the landside of the airport that details the:

- Road network plan
- Facilities for moving people (employees, passengers and other airport users) and freight at the airport
- 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
- Arrangements for working with the state or local authorities or other bodies responsible for the road network and the public transport system
- Capacity of the ground transport system at the airport to support operations and other activities at the airport
- Likely effect of proposed developments identified in the Master Plan on the ground transport system and traffic flows at, and surrounding, the airport.

10.5 State Planning

10.5.1 Planning Framework

The South Australian Government is responsible for setting policy and strategic direction for transport throughout South Australia, as well as planning and constructing major road and rail infrastructure, infrastructure planning for public transport services for the Adelaide metropolitan region, and regulating taxi, rideshare and chauffeur operations. In 2019, the State government established the South Australian Public Transport Authority (SAPTA), an independent body responsible for providing the strategic direction of initiatives, operational and customer services for public transport for the Adelaide metropolitan region.

Infrastructure SA, an independent statutory body, is responsible for developing a 20-year State Infrastructure Strategy and a Statement of Capital Intentions identifying major infrastructure projects to be undertaken in the state as a priority within a five-year period, as well as other strategies, statements or plans relating to infrastructure in South Australia.

The Australian and South Australian governments are jointly funding \$15.4 billion for the remaining sections of the North-South Corridor, completing the non-stop motorway between Gawler and Old Noarlunga. The project is expected to be completed in 2031. The North-South Corridor is one of Adelaide's most important transport corridors. Its proximity and connection to Parafield Airport has the potential to improve accessibility and travel times for commuters accessing the airport.

10.5.2 State Transport Strategies

This Ground Transport Plan considers and incorporates State transport strategies which affect Parafield Airport.

10.5.2.1 The 30-Year Plan for Greater Adelaide (2017)

The 30-Year Plan provides directions for urban and regional development for business, industry, infrastructure provision, utility supply and government agencies. The 30-Year Plan provides a framework for how Adelaide can grow to become a more liveable, competitive and sustainable city. It guides the long-term growth of the city and its surrounds over the next 30 years. The South Australian Government is actively updating the 30-Year Plan as detailed in section 4.3.1.3.

10.6 Airport Transport Planning

10.5.2.2 The 20-Year State Infrastructure Strategy (2020)

The 20-Year State Infrastructure Strategy aims to set the longer-term priorities and direction for infrastructure investment across a number of key sectors, including transport, to support economic growth and enhance the liveability of South Australia. Priorities for transport within the strategy include, but are not limited to:

- Improved connectivity and accessibility to key economic precincts
- Increased mode shift to public transport
- Strategic approach to promotion of active transport options
- Improved safety of the road network
- Improved efficiency of freight
- Development of a future mobility strategy to enable the benefits of innovation to be realised.

In preparation for the subsequent 20-Year State Infrastructure Strategy, a Discussion Paper was prepared by Infrastructure SA in 2023 to gather stakeholder and community feedback. PAL are supportive of a Strategy which recognises the importance of sustainable and efficient transport infrastructure for aviation related facilities and freight and logistics operations.

As PAL continues to use its land to grow and modify the activities occurring on the airport, it is important that careful consideration be given to transportation requirements now and into the future to capture both opportunities and potential impacts.

The key considerations for the Parafield Airport Ground Transport Plan are:

- Effective, safe, sustainable and efficient connectivity for all users of the airport
- Catering for existing and planned aviation and commercial developments and associated employment and visitor traffic
- Achieve appropriate level of service during peak periods, based on performance measures such as degree of saturation of movements at intersections, queue lengths and delays
- Maintain over-dimensional (heavy vehicle) access to facilitate development and growth within the airport
- Segregate, as much as practicable, commercial and domestic vehicles
- Provide access alternatives
- Maximise the efficient use of existing infrastructure
- Cost effective infrastructure investment
- Development of flexible and adaptable infrastructure to cater for future technologies and innovations
- Provide a safe and accessible active transport network within the airport, connecting to the wider active transport network and public transport
- Minimise impacts to surrounding areas through design
- Preserve the nature and function of the road network.

10.7 Recent Developments

Between 2017 and 2023, the following improvements have been implemented by PAL to the ground transport network:

- Extension of Nobby Buckley Drive south of Kesters Road
- Extension of Nobby Buckley Drive north of Kesters Road to Freda Thompson Place, including construction of a roundabout.

The following improvements have also been undertaken on the external network adjacent to the airport by DIT:

- Widening of Main North Road including a dedicated bicycle lane
- Main North Road and Kings Road intersection upgrade

10.8 Forecasting

Future forecasts of vehicle traffic and parking demands are primarily based on the projected development of the airport site. Forecasting uses a range of data inputs and assumptions. These include State government forecasts for traffic volumes on the external network, traffic counts, commercial development predictions and aviation forecasts.

10.8.1 Future Demand

Further commercial development within the airport site will be the primary driver for an increase in vehicle traffic to and from the airport. Daily vehicle traffic volumes are forecast to increase from approximately 29,000 vehicle movements per day in 2023 to 39,000 vehicle movements by 2031 and 66,000 vehicle movements by 2043 (refer Figure 10.3). These forecasts are indicative due to their dependency on development of the airport site.

10.8.2 Modes of Travel

The majority of access to the airport is by private motor vehicle. PAL continues to monitor how people travel to and from the airport – including trends in the potential uptake of public transport or emerging transport technologies such as autonomous vehicles – in order to plan for and provide appropriate infrastructure.

PAL supports opportunities for an increase in public transport and active travel modes (refer Sections 10.11 and 10.12 below) however acknowledge that private motor vehicles will likely continue to be the highest mode share and it is expected that the overall mode share will not shift significantly within the planning period.

10.8.3 Future Technologies

There have been, and will continue to be, substantial developments in emerging and innovative transport technologies, which include electric vehicles, autonomous vehicles, vertical take-off and landing (VTOL) aircraft for on-demand air taxi services, regional air mobility and/or freight delivery and the use of drones for deliveries.

While these technological advances have the potential to improve access and connectivity, they may also create challenges for ground transport systems and other infrastructure associated with airports. The views on the impacts of transport technologies vary significantly, nationally and globally, and will likely require government intervention or policy to adapt as these technologies are realised.

A number of technological advances are in their infancy and are being trialled across Australia. Planning for VTOL and the use of drones requires careful consideration of aircraft operations and airspace requirements.

There has been significant growth in the uptake of electric vehicles (EV) in Australia in recent years and this is forecast to continue aligned with the Commonwealth Government's National Electric Vehicle Strategy. With increasing demand there will be a requirement for infrastructure to support electric charging and the development of a future EV strategy for Parafield Airport.

PAL will continue to monitor emerging technologies. Adaptable staging and timing of infrastructure investment allows PAL to consider and respond to opportunities for incorporating innovative and sustainable access options.

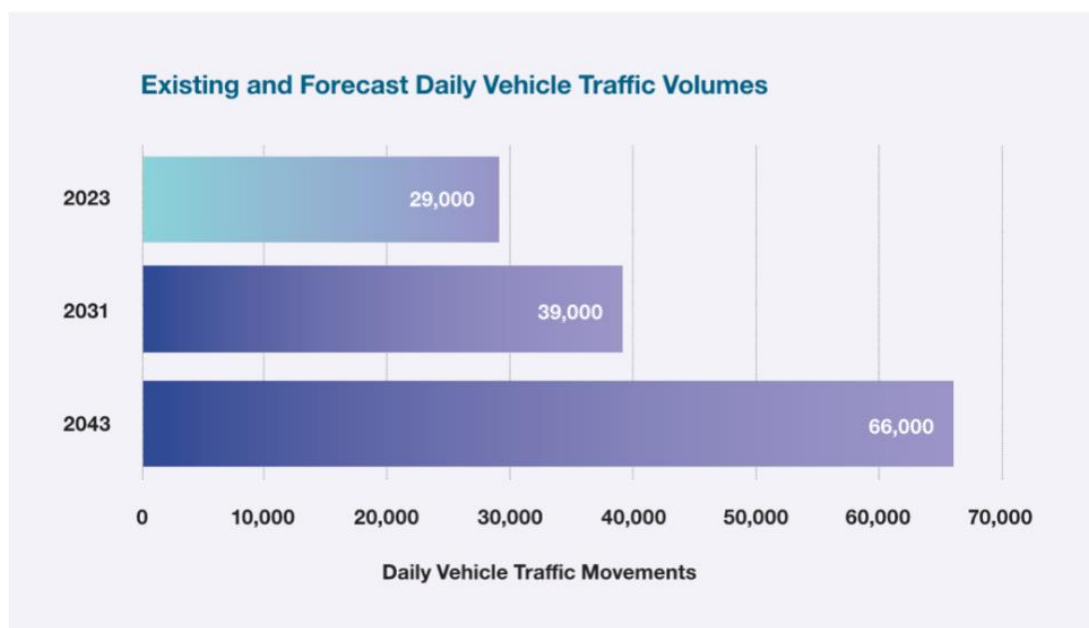


Figure 10.3: Existing and forecast daily vehicle traffic volumes at Parafield Airport

10.9 Precinct Planning

PAL is responsible for all roads within the boundary of the airport. This includes both landside (publicly accessible) and airside (restricted access) roads. Figure 10.4 shows Parafield Airport's internal road network and access points to the external state and local government road networks.

10.9.1 Modelling

Assessment of requirements for the road network within the airport site and at the boundary were assessed using Aimsun microsimulation modelling in 2011 and updated forecasts and plans have been reviewed against the assumptions within the forecast model to confirm that it remains valid, with the external network expected to have sufficient capacity for the future demand at the airport.

Proposed new boundary intersections at the Airport Business Precinct and Enterprise Precinct were assessed using a SIDRA software model for the present day and 2036 growth period. The 2036 growth period is adopted by DIT for its road network planning and represents the period on the external road network for which predicted growth volumes have been prepared. This model assesses the performance of intersections using several key metrics such as degree of saturation, 95th percentile average vehicle delays and queuing distances.

10.9.2 Next Steps

The ground transport concepts outlined in this Master Plan will undergo further detailed modelling and refinement as triggers for development are reached to confirm final alignment, location, dependencies, layout of new intersections, as well as upgrades to existing infrastructure and therefore concepts may change.

Further consultation with the State and local governments will take place to understand any wider network impacts.

10.9.3 Road Network

Figure 10.5 and Figure 10.6 show the eight-year and 20-year Ground Transport Plan for Parafield Airport. The specific planning for each precinct is described below.



116 PARAFIELD AIRPORT

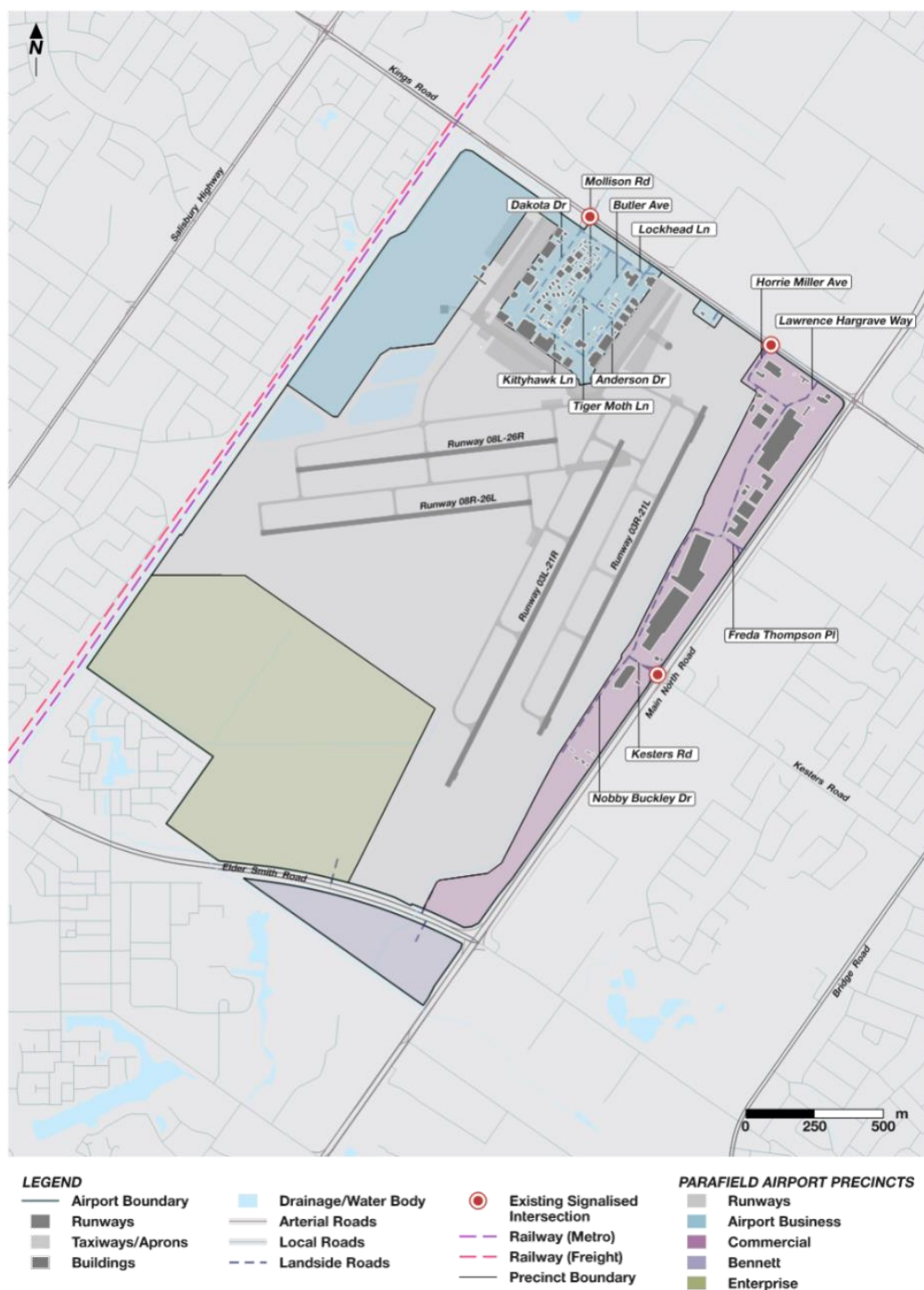


Figure 10.4: Parafield Airport's existing internal road network

10.9.3.1 Airport Business Precinct

The Airport Business Precinct is accessed via the signalised intersection of Dakota Drive with Kings Road and unsignalised intersection of Anderson Drive with Kings Road. These intersections provide connectivity to an internal rectangular grid of roads comprising Anderson Drive, Kitty Hawk Lane, Dakota Drive and Lockheed Lane which form the outer ring, and Mollison Road, Tiger Moth Lane and Butler Avenue within. All internal roads provide one lane in each direction. No formal access is currently provided to the undeveloped section of the Airport Business Precinct to the west.

The access points and roads currently serving the precinct are suited to existing and future traffic loads from development activity within the eastern portion of the precinct which will not change the nature or function of the roads. The internal road reserve to Dakota Drive allows for a future dual carriageway, separated by a median, to be provided if required.

Access to the western section of the precinct is proposed via a new intersection with Kings Road to provide adequate access capacity for the site while minimising impacts on Kings Road. The access will also provide an opportunity for separation of the anticipated heavy vehicles, which would be accessing this area, from the light vehicles which dominate volumes within the eastern section of the precinct, and ensure adequate separation between intersections within the Airport, thus improving safety and minimising conflict. This would need to be coordinated with traffic on the wider traffic network and any proposal by DIT to grade separate Kings Road at the railway intersection. The internal road network to the west will likely be staged with development and be suitable for B-double vehicles.

10.9.3.2 Commercial Precinct

The Commercial Precinct extends from the north-east corner of the airport to the south-east corner with frontage to Main North Road, Kings Road and Elder Smith Road. It provides a range of commercial, service, trade and large-scale retail facilities, and supporting shops and services. Access to the precinct is provided along Main North Road and Kings Road via both signalised and unsignalised intersections. An access point is also provided along Elder Smith Road for future expansion of the road network. The internal road network is designed to provide customer access to the car parking areas at the front of these facilities, with back-of-house operations and deliveries to the rear, creating separation between heavy and light vehicles.

There is sufficient capacity within the internal and external road network to cater for planned development growth within the Commercial Precinct. Potential extensions to Nobby Buckley Drive in each direction may be required to provide access for future development in these areas.

10.9.3.3 Enterprise Precinct

The Enterprise Precinct is largely undeveloped. An access point is provided from Elder Smith Road from which the internal B-double-capable road network will be determined, as required, to support development and traffic demand. To improve capacity and provisions for right-turning vehicles to and from the precinct in future, the existing Elder Smith Road intersection may be signalised aligned with an agreement with DIT in 2006. A secondary access point may also be desirable to the west of the main entrance to assist in distributing domestic vehicle traffic within the precinct and provide an emergency entry and exit for heavy vehicles.

PAL is supportive of an extension of Elder Smith Road to Port Wakefield Road, which would provide for improved connectivity between the airport and major transport networks to the north, east and south of Adelaide.

10.9.3.4 Bennett Precinct

The Bennett Precinct is located at the southern end of the airport to the south of Elder Smith Road and provides opportunities for low intensity activities. Service access is currently from Elder Smith Road via a 'left in, left out only' on the southern carriageway and is anticipated to be adequate for the future uses envisaged for this precinct. Informal access is also available from the northbound carriageway on Main North Road.

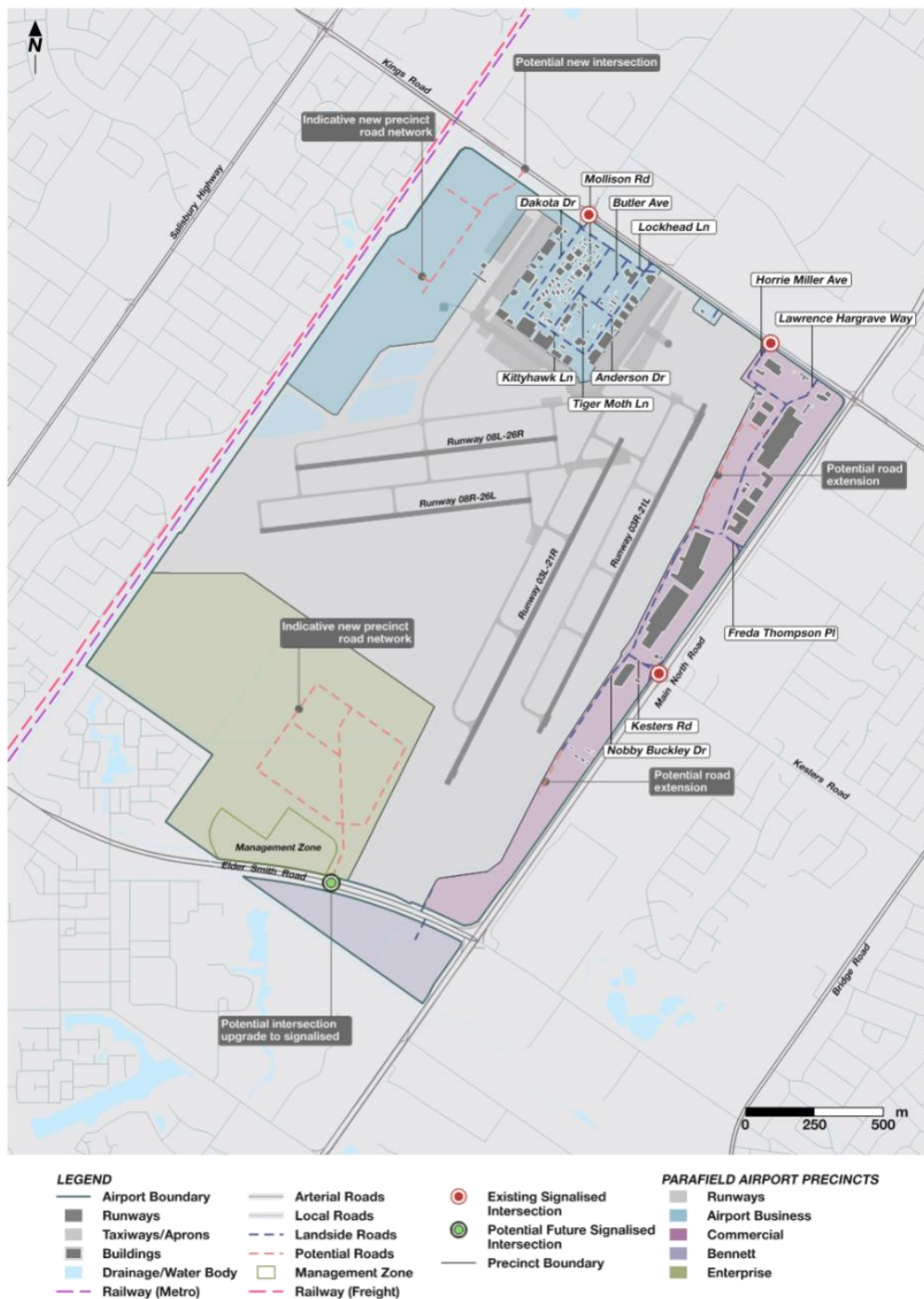


Figure 10.5: Parafield Airport 8-year Ground Transport Plan

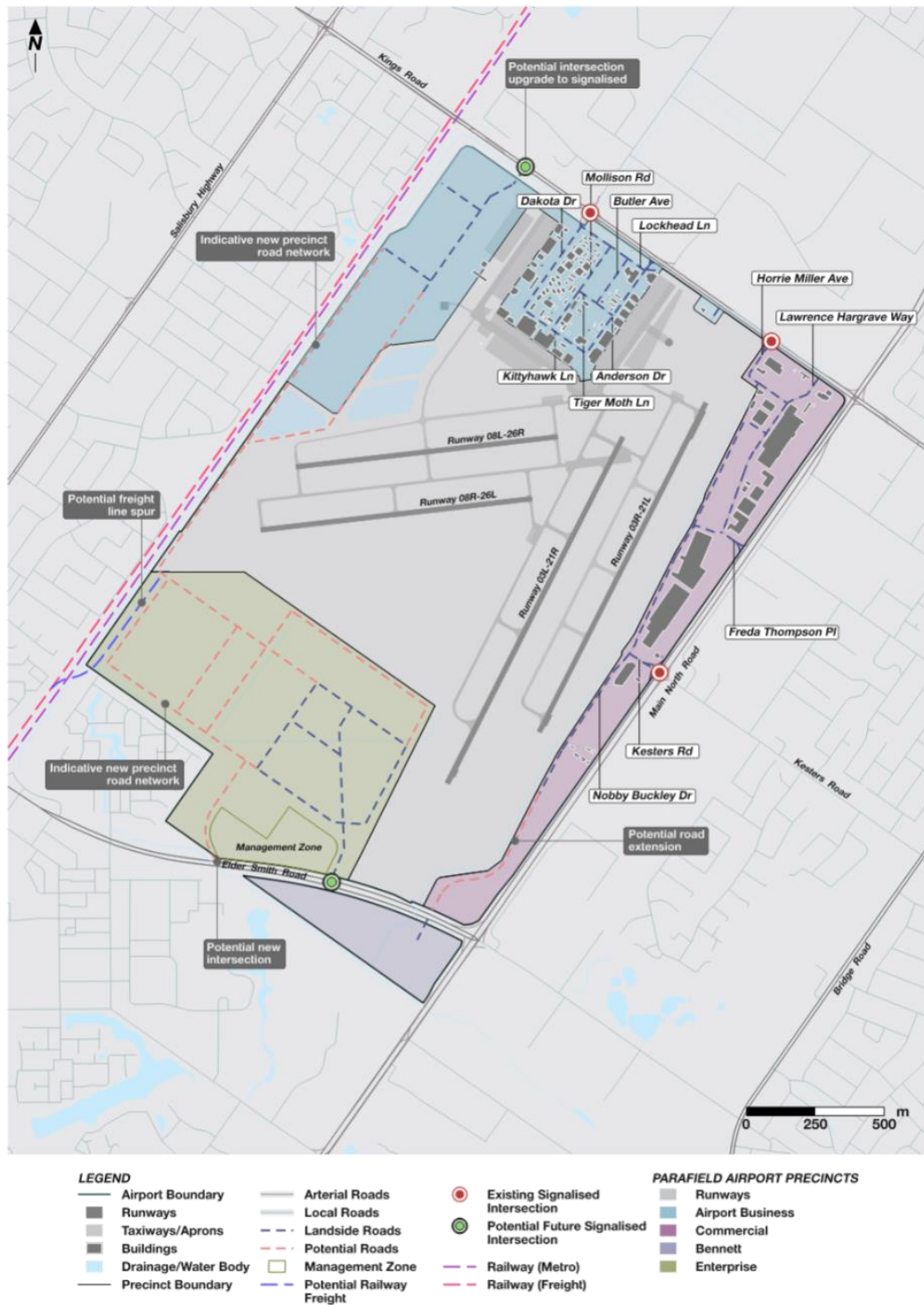


Figure 10.6: Parafield Airport 20-year Ground Transport Plan

10.10 Freight Rail

The rail corridor that forms the western boundary of the airport site is part of the Kalgoorlie to Serviceton and Parkes Corridor and is owned by Australian Rail Track Corporation. It provides freight connectivity to Perth, Darwin, Sydney and Melbourne.

A future freight railway spur link may be considered for the Enterprise Precinct to provide additional opportunities for the movement of freight and products into, or out of, the precinct, as illustrated in Figure 10-6. However, as the freight rail line is located to the west of the high-frequency passenger rail line, any rail spur will need to be considered carefully so as not to cause excessive delays or introduce collision risks to both rail freight and commuter rail lines. Impacts on the existing open channel stormwater drain and shared path would also need to be considered.

10.11 Public Transport

Public transport to the airport is primarily provided by passenger rail services along the Gawler rail line which is located adjacent to the western airport boundary and various bus services passing the airport along their routes, as shown in Figure 10.7. Both are operated by Adelaide Metro.

The bus service Route 225 passes along the southern and eastern boundaries via Elder Smith Road and Main North Road, and bus service Route 228 passes along the eastern boundary via Main North Road. Bus stops are located only on Main North Road. There is no bus service located along Kings Road.

PAL encourages improved bus connectivity to the airport to provide greater opportunities for the public to use public transport, including but not limited to:

- Inclusion of Route 228 bus stops within Commercial Precinct
- Inclusion of Route 225 bus stops within the Enterprise Precinct as it is developed
- Bus connectivity along Kings Road providing for access to Airport Business Precinct.

The rail corridor provides for the passenger rail service from Adelaide Railway Station to Gawler Railway Station. There are four rail stations on this line in the vicinity of the airport. Mawson Lakes Railway Station provides a key interchange between rail, bus and car travel. Greenfields Station, Parafield Gardens Station and Parafield Station are directly adjacent to the airport. Parafield Station has a park and ride facility that has potential for expansion which will need to be considered as part of the South Australian Government's Kings Road overpass project. The Gawler rail service currently operates every fifteen minutes in peak periods during weekdays and every half hour in non-peak periods.

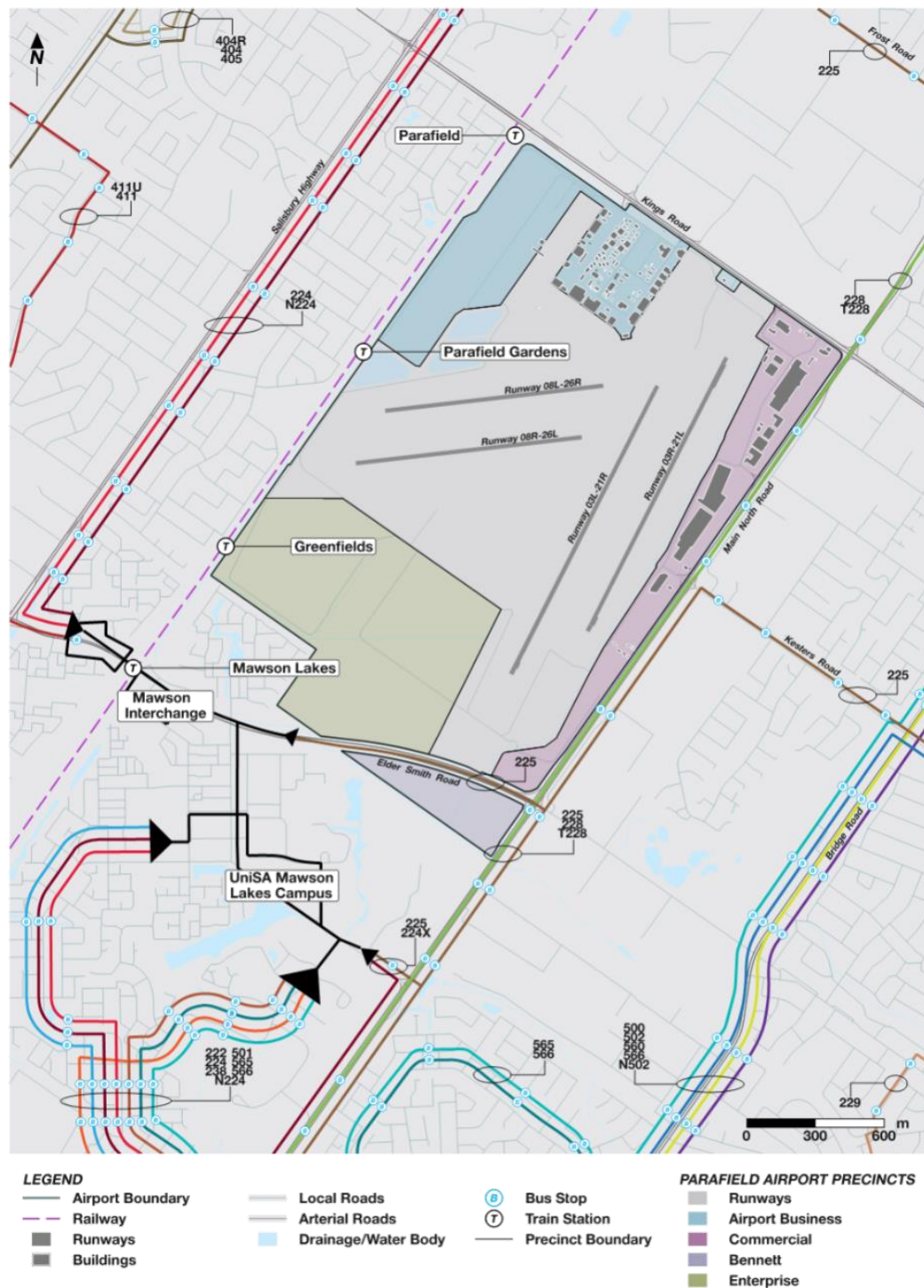


Figure 10.7: Bus and rail routes and stops within and surrounding Parafield Airport

10.12 Active Travel

There are a series of cycling and shared paths (bicycle and pedestrian) within, around and connecting to the Parafield Airport site. Cycleways consist of off-road shared paths and on-road bicycle paths. There are on-road bicycle lanes, in both directions, along Main North Road and Elder Smith Road and an off-road shared path along the western boundary of the airport site and a portion of the northern boundary to Dakota Drive.

There is opportunity to extend the off-road shared path along the northern boundary of the airport site, both within the airport boundary and adjacent to it within the Kings Road verge. Similarly, there may be opportunity to further extend the path adjacent to Main North Road which would provide for a safe, well-lit environment for pedestrians and cyclists while providing access to food and retail in the vicinity. To the south of the airport, an off-road shared path within the Bennett Precinct would allow for connection to the existing path to the west and The Paddocks (community area currently being redeveloped by the City of Salisbury) to the south of the airport. PAL will continue to consult and work with relevant authorities to further explore and develop a suitable shared path network, with consideration of opportunities both within the airport and within State and local government road reserves which not only improves and promotes active travel to and from the airport but contributes to the broader network and community.

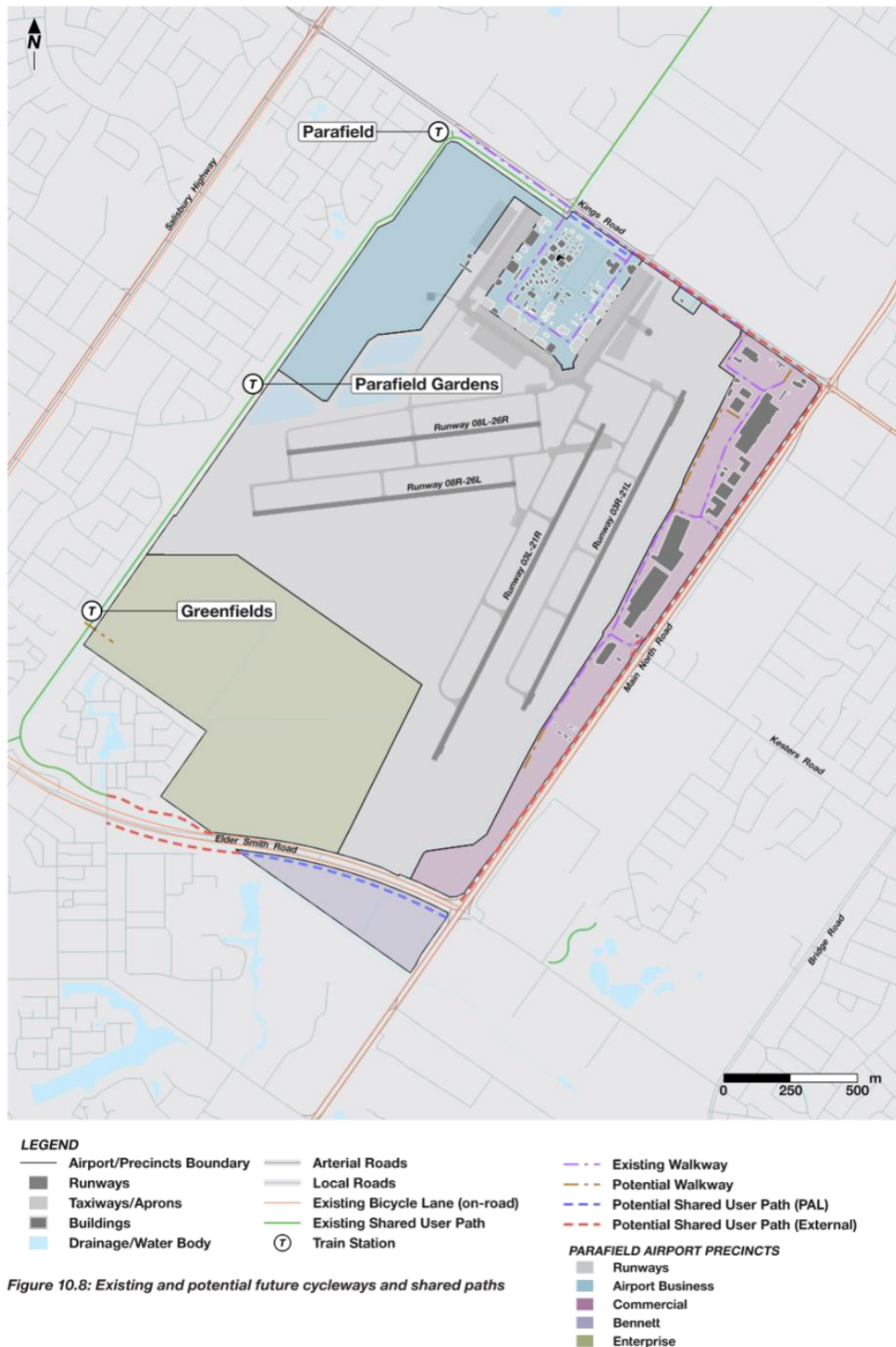
The primary pedestrian network servicing Parafield Airport is focused on the developed areas of the Airport Business Precinct and Commercial Precincts as illustrated in Figure 10-8. Proposed walkways within the Airport Business Precinct aim to improve connectivity to other existing or proposed paths. Within the Commercial Precinct walkways are proposed to extend in line with future development. For yet to be developed areas of the airport, such as the Enterprise Precinct and Airport Business Precinct (west), walkways and connectivity will be a key consideration of the precinct planning and development including connectivity to public transport.

The existing and potential future cycleways and shared paths are shown in Figure 10.8.

10.13 Car Parks

Vehicle parking within the Airport Business Precinct is provided within most individual business and commercial sites. Kerbside parking is also provided along Andersen Drive and Kitty Hawk Lane. Demand for parking from aviation staff and business customers has grown in recent years and additional car parking facilities are anticipated to be required in the short to medium term.

The Commercial Precinct requires a high degree of formalised parking. This is currently provided for within existing retail and commercial developments and will continue to be required for new developments. The road network within the Commercial Precinct does not permit kerbside parking to ensure clear and safe two-way flows of traffic are maintained.



10.14 Development Plan

The implementation plan for key ground transport upgrades proposed within the next 8 years and 20 years is based on current forecasts. The requirement and timing for ground transport developments will be informed by one or more of the following triggers, therefore the actual timing of developments may vary:

- New commercial development
- Capacity constraints resulting in delays, congestion
- External roadworks
- Improved customer experience
- Improved safety
- Change in mode share
- New technologies and innovation
- Viability of the proposed investment.

The 8-Year Development Plan and the 20-Year Development Plan are detailed in Table 10-1 and Table 10-2, respectively.

PAL will continue to consult with relevant authorities as triggers are approached and further design and modelling is undertaken.

TYPE	POTENTIAL PROJECT	BENEFITS
Roads	Airport Business Precinct – Modifications to Kings Road intersection to signalised	Increased capacity for forecast volumes
	Airport Business Precinct - New internal road network aligned with proposed development	Access to new developments
	Commercial Precinct – Extension of Nobby Buckley Drive (south) to provide access for potential new commercial development	Access to new developments Redistribution of traffic on the internal and external network
	Enterprise Precinct – New intersection on Elder Smith Road	Increased capacity for forecast volumes Potential separation of heavy vehicle access and egress from light vehicles
	Enterprise Precinct – New internal road network aligned with proposed development	Access to new developments
	Possible link between the Airport Business Precinct and Enterprise Precinct	Reduced traffic volumes on external road network More direct access for tenants that may use both precincts
Rail	Potential freight rail spur into Enterprise Precinct dependent on requirements and uses of future development	Reduced traffic volumes on external road network

Table 10-1: 8-Year Ground Transport Development Plan

TYPE	POTENTIAL PROJECT	BENEFITS
Walkways and Cycleways	New walkways aligned with road extensions and new road networks within precincts	Reduced reliance on vehicular modes
	Extension of existing shared path adjacent to Elder Smith Road to connect into Enterprise Precinct	Enables off-road link to Main North Road cycle network
	New shared path within Bennett Precinct adjacent to Elder Smith Road	Enables off-road link to Main North Road cycle network
Car Parks	Airport Business Precinct - Additional car parking aligned with demand	Increased capacity for forecast volumes

Table 10-1: 8-Year Ground Transport Development Plan (continued)

TYPE	POTENTIAL PROJECT	BENEFITS
Roads	Airport Business Precinct – New intersection on Kings Road	Increased capacity for forecast volumes Separation of heavy vehicles and light vehicles which dominate traffic within the eastern portion of Airport Business Precinct
	Airport Business Precinct - New internal road network aligned with proposed development	Access to new developments
	Commercial Precinct – Extension of Nobby Buckley Drive (north and south) to provide access for potential new commercial development	Access to new developments
	Enterprise Precinct – Signalisation of existing intersection on Elder Smith Road	Increased capacity for forecast volumes Appropriate heavy vehicle access and egress
	Enterprise Precinct – New internal road network aligned with proposed development	Access to new developments
Walkways and Cycleways	New walkways aligned with road extensions and new road networks within precincts	Reduced reliance on vehicular modes
	Extension of shared path on Kings Road (portion within the airport site)	Enables link to Main North Road cycle network
Car Parks	Airport Business Precinct - Additional car parking aligned with demand	Increased capacity for forecast volumes

Table 10-2: 20-Year Ground Transport Development Plan



Services
Infrastructure

11

11.1 Introduction

Services infrastructure is a key component of Parafield Airport's operations both now and into the future. It comprises the power, water, sewer, telecommunications and stormwater networks that service aviation and non-aviation related developments across the airport.

The reliability, efficiency and sustainability of these networks and supply arrangements are the key objectives for Parafield Airport Limited (PAL) when planning for services infrastructure. The timing of new and upgraded services is influenced by demand and planning for services infrastructure needs to be adaptable to meet the needs of all of the aviation and commercial activities within the airport site. PAL works closely with external utilities providers to ensure these essential services are available to support the operation and growth of the airport.

11.2 Overview

Services infrastructure at Parafield Airport will continue to expand to meet increases in demand across the airport.

Augmentation of the existing utility networks will likely include:

- New services infrastructure to the Enterprise Precinct and western area of the Airport Business Precinct
- Upgrades to existing infrastructure within the developed portion of the Airport Business Precinct to meet changing demands and support new technologies, such as electric aircraft.



128 PARAFIELD AIRPORT

11.3 Recent Developments

Improvements to the services infrastructure that have been implemented since Master Plan 2017 include:

- Installation of electrical smart meters,
- Upgrades to fire water mains through Airport Business Precinct (underway)

11.4 Electrical Network

PAL owns and operates a high-voltage embedded (private) electricity network within the Airport Business Precinct, which is supplied by a SA Power Networks (SAPN) owned and operated intake station and distributed internally by a network managed by PAL. The Commercial Precinct is supplied by SAPN infrastructure which provides power direct to the individual business and allotments. Figure 11.1 shows the existing high-voltage electrical network.

To support future growth and development, Parafield Airport's embedded electricity network will continue to be expanded and augmented, underpinned by PAL's objectives to:

- Optimise and maintain electricity infrastructure to ensure continuity of supply, meet development needs and allow for innovative technologies
- Support carbon-reduction goals in energy infrastructure and framework management decisions
- Ensure regulatory compliance
- Maintain commercial viability of the embedded electricity networks
- Drive continuous improvement.

The development of the Enterprise Precinct and western portion of the Airport Business Precinct will require a new SAPN high-voltage feed from which an embedded network will service new developments. PAL will continue to work closely with SAPN to ensure that growth can be supported in line with the objectives of PAL and support the development of a 20-Year State Infrastructure Strategy, by Infrastructure SA, which addresses the importance of the reliable and timely provision of services infrastructure to enable the objectives to be achieved and the ability for PAL to respond to opportunities to introduce new, sustainable and innovative technologies to the State, such as electric vertical take-off and landing (eVTOL) aircraft.

In an ongoing effort to minimise energy consumption, PAL will look to:

- Upgrade existing lighting to LED fittings
- Identify and implement cost-effective energy reduction projects
- Expand the preventative maintenance program in alignment with development
- Educate employees and tenants on energy efficiency practices
- Identify opportunities to increase renewable-energy generation onsite.

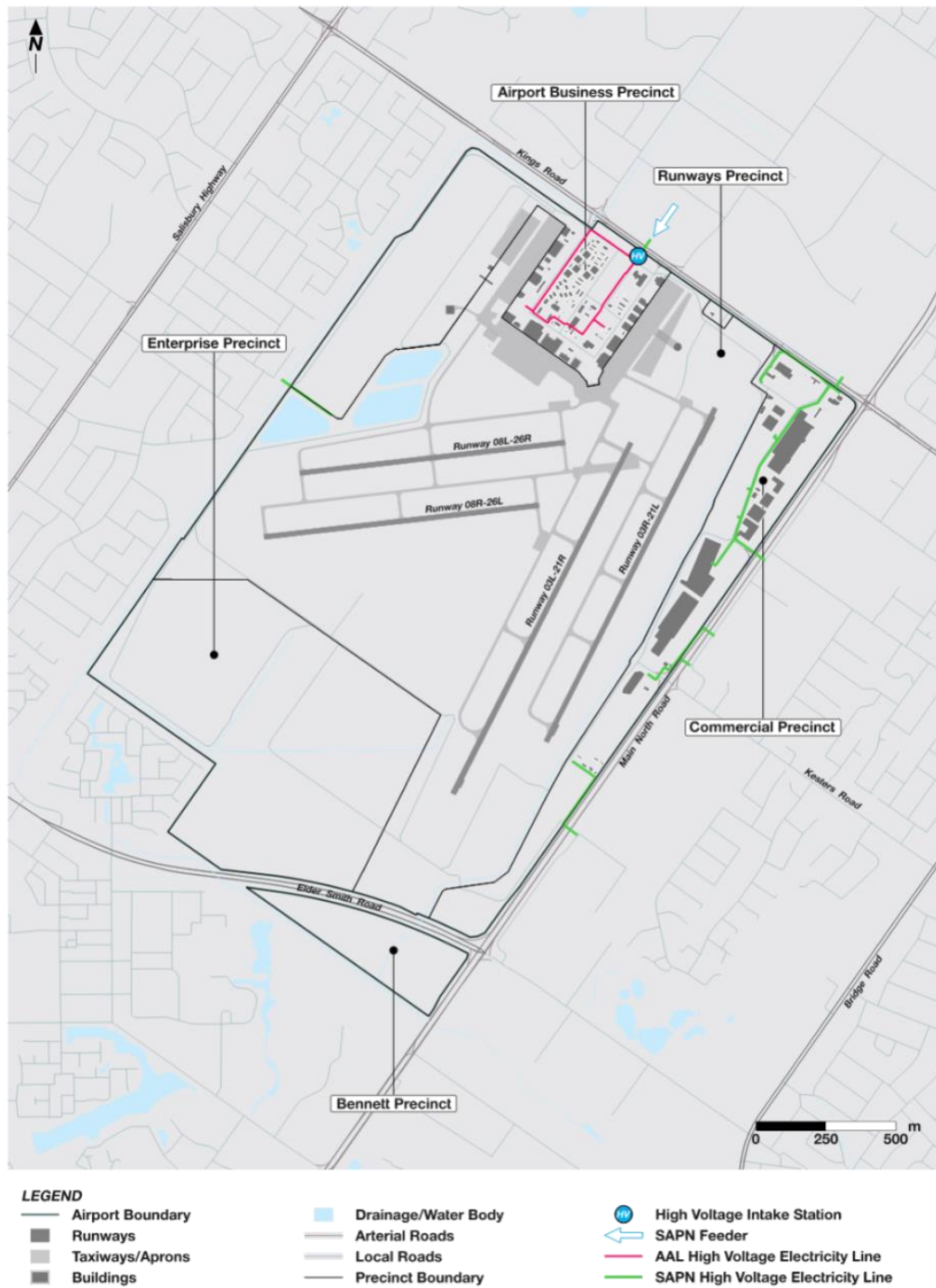


Figure 11.1: Existing electrical network

11.5 Water

11.5.1 Potable Water and Fire Water

The existing potable water and fire water supply to the Airport Business Precinct is obtained from SA Water mains along Kings Road at three locations and then distributed internally through a network of combined potable water and fire water pipes which are owned and maintained by PAL, extending through to the Enterprise Precinct. The Commercial Precinct is serviced by SA Water with direct connections off Main North Road and Kings Road for individual allotments and an internal main which passes within Lawrence Hargrave Way. Refer to Figure 11.2 for details of the existing water network.

A proposed upgrade to the fire protection services within the Airport Business Precinct in the short term will see a new pipe and hydrant network installed, separating the fire water supply from the potable water network. The development of the western portion of the Airport Business Precinct will require either an extension from the new pipe network or a new SA Water feed from which a Parafield Airport network will service new developments, as will be required to service the Enterprise Precinct. PAL will continue to work closely with SA Water to ensure that growth can be supported.

11.5.2 Wastewater

The Airport Business Precinct wastewater system is comprised of a PAL owned and maintained gravity drainage system which discharges into a sewer pumping station and sewer rising main located south of the precinct which passes below the existing airfield, connecting to SA Water infrastructure located within the Enterprise Precinct. The Commercial Precinct is serviced by SA Water with direct connections off Main North Road for individual allotments and an internal main which passes within Lawrence Hargrave Way. Refer to Figure 11.2 for details of the existing wastewater network.

New wastewater infrastructure will be required to support the development envisaged within the Enterprise Precinct and western portion of the Airport Business Precinct with potential additional connections to the SA Water network and/or expansion of existing infrastructure. PAL will continue to work with SA Water to investigate efficiencies that can be made in the existing and future wastewater network.

11.5.3 Recycled Water

A Stormwater Harvesting Facility is located within the Runways Precinct which is owned and operated by the City of Salisbury 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. City of Salisbury reclaimed water pipework is located along the southern, western, and northern boundary of the airport site, partially within the airport in some locations as illustrated in Figure 11.2.

The Bolivar Wastewater Treatment Plant is located approximately five kilometres north-west of the airport and is owned and operated by SA Water. It services the suburb of Mawson Lakes, directly adjacent to the airport.

Parafield Airport currently has no reclaimed water systems serving the site with the exception of one allotment within the Airport Business Precinct. PAL is committed to reducing its reliance on potable water sources through the expansion of non-potable water alternatives, use of rainwater tanks, use of water saving devices within new developments and use of drought-tolerant plants for landscaping to aid the reduction of water usage across the airport site. Arrangements are possible, under partnership with the City of Salisbury and SA Water, for future airport developments to increase use of recycled water from the City of Salisbury Stormwater Harvesting Facility or from the SA Water Bolivar Treatment Plant.

11.6 Gas

A natural gas supply is located within the Commercial Precinct of the airport, as shown in Figure 11.2, and is owned by Envestra. There is also a natural gas supply to the Airport Business Precinct, owned and operated by Australian Gas Networks. As PAL works towards decarbonisation across the airport, it is envisaged that there will be a transition away from natural gas towards more sustainable alternatives.

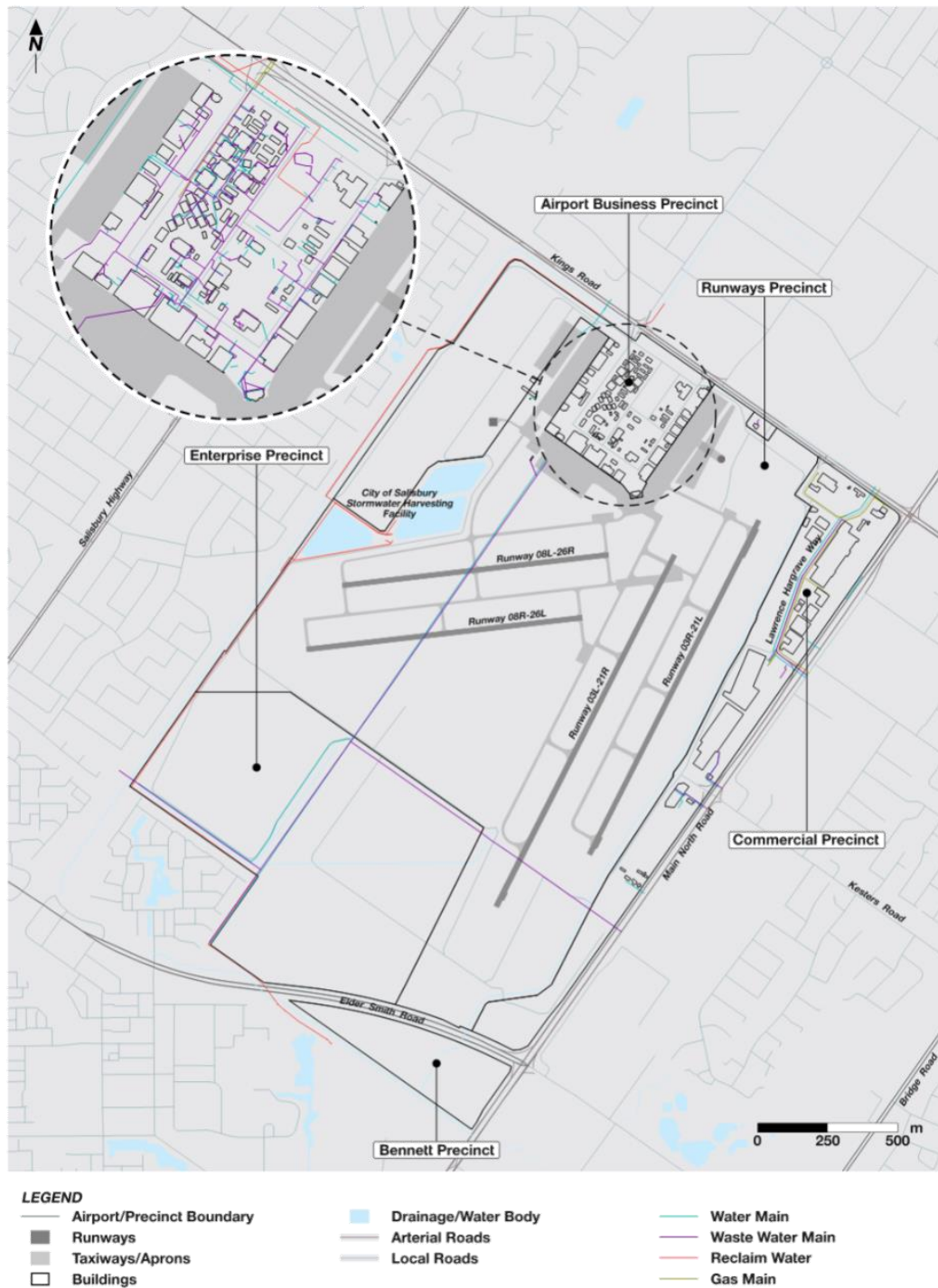


Figure 11.2: Existing water and gas networks at Parafield Airport

11.7 Stormwater Drainage

Parafield Airport is located within the Dry and Cobbler Creeks Catchment of metropolitan Adelaide within the Torrens River basin. All stormwater generated from the airport site discharges to networks which bound the site and drain to the Port River estuary, including:

- Airport West Drain is located outside the western perimeter of the airport boundary and a portion of the northern perimeter adjacent to Kings Road and joins the Bennett Road Drain leading into Dry Creek. It is under the control of the City of Salisbury.
- Airport East Drain is located within the airport boundary through an easement with the City of Salisbury. The first northern section of the drain is piped underground within the Commercial Precinct before connecting into an open unlined drain adjacent to the precinct and flowing into the Bennett Road Drain. It is under the control of the City of Salisbury and has been designed to receive excess stormwater events along Main North Road which are directed through a number of passages on airport land to flow into the City's drain through established drainage systems and along roadways.
- Bennett Road Drain is located adjacent to the southern boundary of the airport and receives flows from the Airport East Drain and areas beyond the airport, before draining into Dry Creek. It is under the control of the City of Salisbury.
- Airport Internal Drain is a series of Parafield Airport owned and maintained open channel and piped drains that are located within the airport to take water run-off to the City of Salisbury drainage system, both abutting the airport or within prescribed Council drainage easements. Stormwater from within the Airport Business Precinct is collected via an underground pit and pipe drainage network into a series of large diameter pipes (>1,000mm) to the south of the precinct before discharging into one of the open channel airport drains which flows into the Airport West Drain.

Parafield Airport's stormwater infrastructure includes grated drains that trap large debris to prevent it from entering the external drainage network.

Figure 11.3 shows major stormwater catchments for metropolitan Adelaide in the vicinity of Parafield Airport and Figure 11.4 shows the major drainage systems.

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 the City of Salisbury (for its drainage channels) and PAL (for the airport's internal system of drains).

To inform stormwater design for future precinct and allotment developments, updated flood modelling for the airport site will be undertaken in the short-term including the preparation of a Stormwater Management Plan which will detail water sensitive urban design measures and water quality targets which are to be achieved. The effects of climate change on stormwater runoff and the performance of drainage systems will also be assessed with consideration of sea level rise, catchment changes and increased rainfall patterns. PAL will consult with relevant authorities through the preparation of the Stormwater Management Plan.

The management of stormwater quality is discussed in Section 14.10.

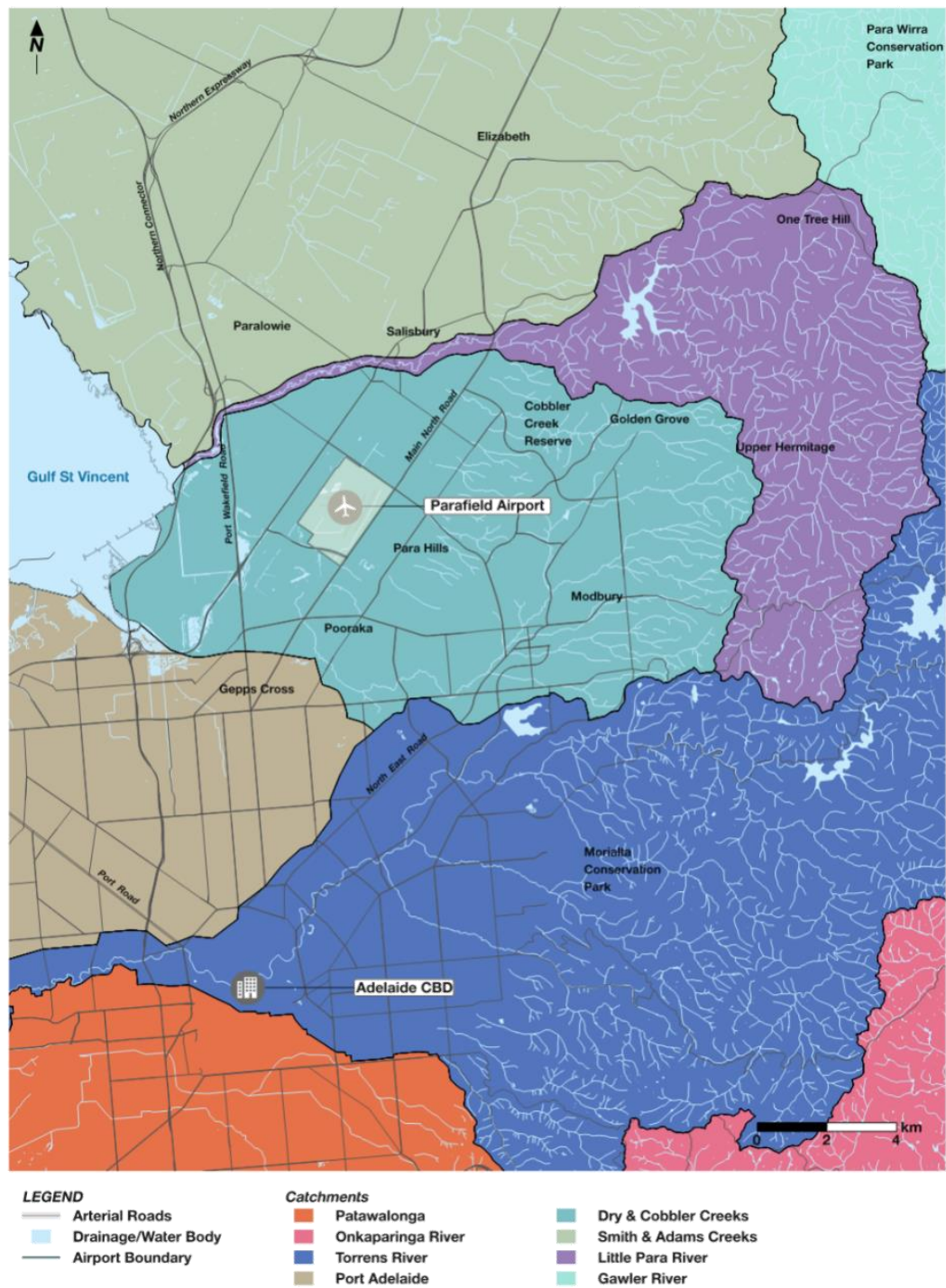


Figure 11.3: Major Adelaide stormwater catchments in the vicinity of Parafield Airport



11.8 Telecommunications

Telecommunications infrastructure within the airport site is owned and managed by PAL and various telecommunications providers. PAL will continue to facilitate improvements and expansion of the telecommunications infrastructure to meet customer needs and in response to changes in the communication industry.

11.9 Easements

There are several existing easements and licence agreements for authority owned infrastructure within the airport site which are shown in Figure 11.5. In any proposal for future development on airport land, PAL will act consistently with the obligations or interests that exist with service providers.



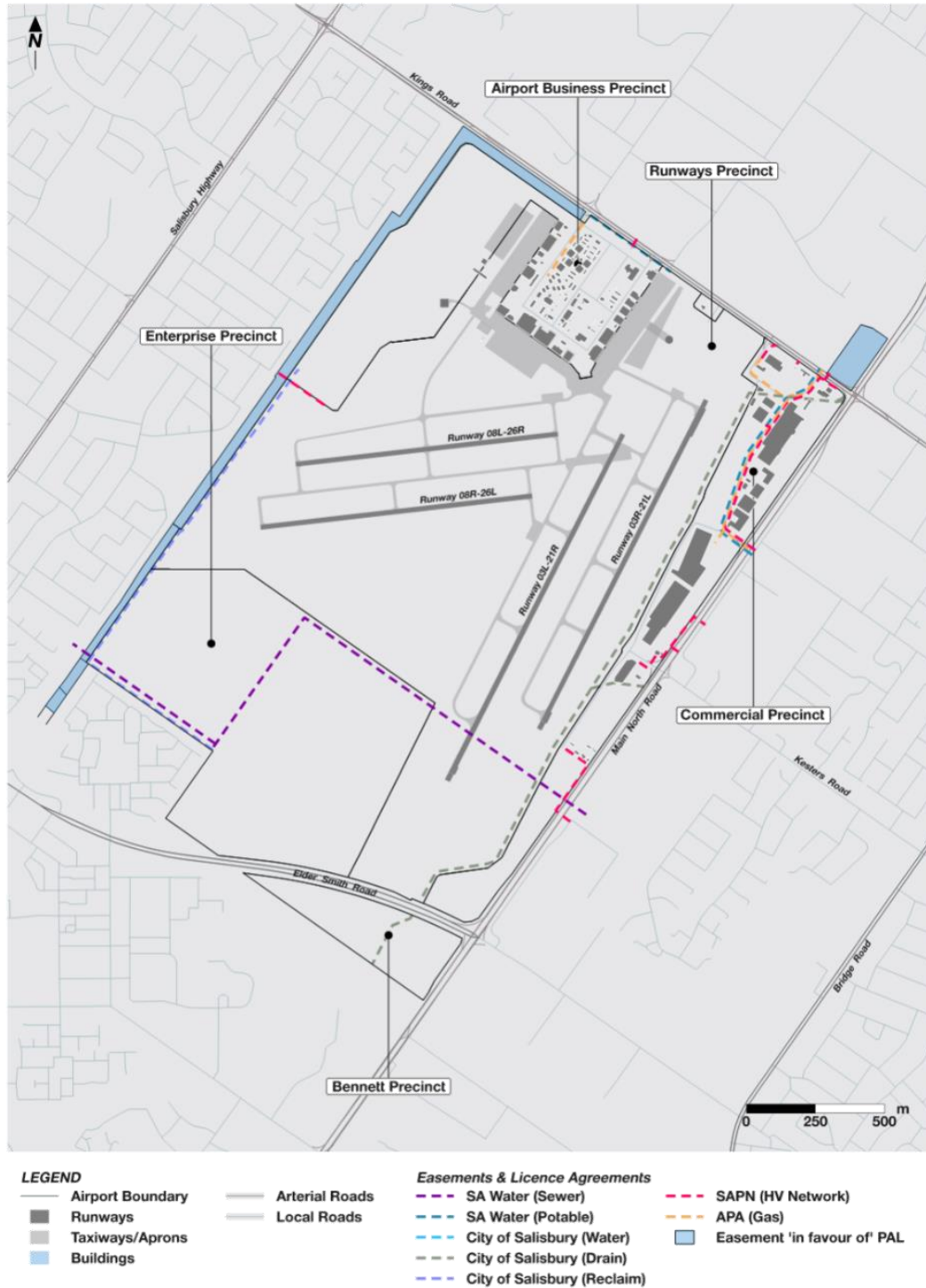
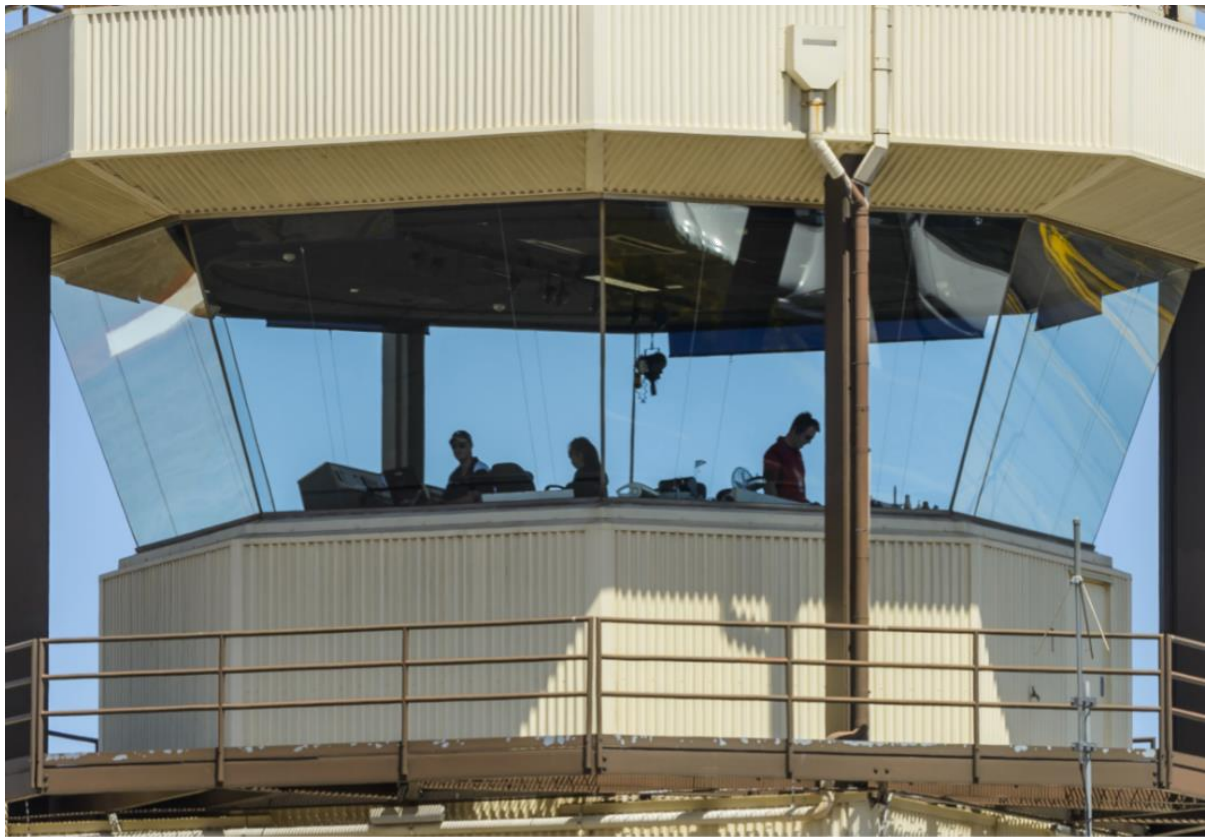


Figure 11.5: Existing easements and licence agreements at Parafield Airport





Safeguarding
the Airport

12

12.1 Introduction

The safety of aircraft operations and the capacity of the airport to operate and respond to growing demand can be directly impacted by inappropriate land use and activities that occur on land surrounding the airport.

Long-term protection and safeguarding of Parafield Airport are critical to ensuring the continuation of aviation operations and aircraft safety. The safeguarding of the airport, which refers to measures taken to minimise inappropriate land uses and activities, is the shared responsibility of Parafield Airport Limited (PAL) and all levels of government.

The Commonwealth government has enacted regulations to protect airspace around airports through the Airports (Protection of Airspace) Regulations 1996. Separately, a series of guidelines have been developed as part of the National Airports Safeguarding Framework (NASF) to enhance the current and future safety, viability and long-term growth of aviation operations at Australian airports. These guidelines have been developed by the Commonwealth in conjunction with the relevant state and territory planning ministers and cover a range of safeguarding matters. Implementation of the guidelines is facilitated by the relevant state and territory planning authorities as part of state planning systems.

12.2 National Airports Safeguarding Framework

The current and future viability and safety of aviation operations at Parafield Airport can be impacted by inappropriate developments occurring in areas beyond the airport boundary. The safeguarding measures applied by PAL in its planning include the NASF guidance documents which are listed in Table 12-1.

NASF Guideline	Description
Guideline A	Measures for Managing Impacts of Aircraft Noise
Guideline B	Managing the Risk of Building Generated Windshear and Turbulence at Airports
Guideline C	Managing the Risk of Wildlife Strikes in the Vicinity of Airports
Guideline D	Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation
Guideline E	Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports
Guideline F	Managing the Risk of Intrusions into the Protected Airspace of Airports
Guideline G	Protecting Aviation Facilities – Communication, Navigation and Surveillance (CNS)
Guideline H	Protecting Strategically Important Helicopter Landing Sites (HLS)
Guideline I	Managing the Risk in Public Safety Areas at the Ends of Runways

Table 12-1: National Airports Safeguarding Framework Guidelines

12.3 South Australian Government Planning Policy

The responsibility for land use planning off-airport lies with both state and local government. In May 2012, the South Australian Government agreed to the NASF and committed to implementing the outcomes of the NASF.

As described in Section 4, the South Australian planning system, through the *Planning, Development and Infrastructure Act 2016* and resulting Planning and Design Code provides a framework for addressing some elements of the NASF guidelines in relation to off-airport development.

There are three aviation related overlays, described below, within the Planning and Design Code which make reference to airport safeguarding measures. As detailed in Section 4.3, the State Planning System does not relate to development occurring on-airport and it is important to note that these Overlays may be subject to change from time-to-time. The information contained herein is current as of the date that this Master Plan is submitted for approval by the Minister.

12.3.1 Building Near Airfields Overlay

The desired outcome of the Building Near Airfields Overlay is to:

'Maintain the operational and safety requirements of certified commercial and military airfields, airports, airstrips and helicopter landing sites through management of non-residential lighting, turbulence and activities that may attract or result in the congregation of wildlife.'

The Assessment Criteria provide general guidance regarding:

- Outdoor, non-residential lighting within vicinity of an airport
- Minimising development that has the likelihood to attract or cause the congregation of wildlife within three-kilometres of an airport
- Limiting the height of new buildings within a defined area to mitigate the risk of building induced windshear and turbulence.

The Building Near Airfields Overlay does not trigger a referral of the development application to PAL for review, comment or direction.

12.3.2 Aircraft Noise Exposure Overlay

The desired outcome of the Aircraft Noise Exposure Overlay is as follows:

'Development sensitive to aircraft noise is designed and located to manage noise intrusion to reduce land use conflict and protect human health.'

The corresponding spatial representation of this overlay is currently based on the Australian Noise Exposure Forecast (ANEF) published in the Parafield Airport Master Plan 2017. The overlay includes assessment criteria providing guidance regarding:

- The siting of new buildings accommodating sensitive receivers, or additions to existing buildings, on land subject to particular ANEF values
- The creation of new allotments intended to accommodate sensitive receivers within areas subject to particular ANEF values.

This Overlay seeks to restrict the division or development of land within the ANEF 30 contour or greater.

The Aircraft Noise Exposure Overlay does not trigger a referral of the development application to PAL for review, comment or direction.

PAL will work with the South Australian Department for Trade and Innovation (Plan SA) and relevant stakeholders, including the City of Salisbury, to seek an update to the Overlay to reflect the new 2043 ANEF (see Section 13).

12.3.3 Airport Building Heights (Regulated) Overlay

The desired outcome of the Airport Building Heights (Regulated) Overlay is:

'Management of potential impacts of buildings and generated emission to maintain operational and safety requirements of registered and certified commercial and military airfields, airports, airstrips and helicopter landing sites.'

The assessment criteria provide general guidance regarding:

- Limiting the siting and height of buildings of in relation to airspace, declared to maintain safety and aircraft operations
- Minimising the potential impact generated by emission velocities from exhaust stacks.

Development proposals which exceed building height limitations or result in emissions exceeding pre-determined velocities around airports will trigger a referral to PAL and the relevant Commonwealth government agencies for assessment and direction. This is discussed further in Sections 12.5 and 12.9.

The protected airspace surfaces for Parafield Airport may be updated from time to time to reflect new, or changes to, flight procedures. In the event of the protected airspace surfaces being updated, PAL Airport will work with the SA Department for Trade and Innovation to seek a corresponding update to the Airport Building Heights (Regulated) Overlay

12.4 Aircraft Noise

Inappropriate development around airports can result in unnecessary constraints on airport operations and negative impacts on community amenity resulting from the effects of aircraft noise. These impacts need to be managed in a balanced and transparent way.

NASF Guideline A: Measures for Managing Impacts of Aircraft Noise provides advice on the use of a complimentary suite of noise metrics, including the ANEF system and frequency-based noise metrics, to inform strategic planning and provide communities with comprehensive and understandable information about aircraft noise.

PAL has prepared an ANEF for Parafield Airport every five years since 1999, with the Federal Airports Corporation developing the ANEF prior to the airport's privatisation. A new ANEF has been prepared as part of this Master Plan and was technically endorsed by Airservices Australia in December 2023. (see Appendix B).

The most effective way to manage development in areas forecast to be exposed to high levels of aircraft noise is to implement appropriate land use planning controls and acoustic standards.

The ANEF is a land use planning tool to inform noise-sensitive land uses around the airport. It provides guidance to both state and local government authorities in making planning and development decisions. The ANEF is prepared in consultation with state and local government authorities.

The ANEF underpins *Australian Standard AS 2021:2015 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction*. This Standard provides guidance on the siting and construction of new buildings within forecast aircraft noise exposure zones and on the acoustical adequacy of existing buildings in areas near airports. In order to minimise the potential for future occupants to experience adverse noise impacts, AS 2021:2015 recommends dwellings located between ANEF 20 and 25 incorporate noise control measures and achieve prescribed decibel levels within bedrooms.

New building developments within the Parafield Airport site are designed to minimise aircraft noise intrusion and achieve compliance with this Standard.

Off airport, the ANEF is applied through the Aircraft Noise Exposure Overlay within the South Australian Planning and Design Code, as described in Section

12.3. The planning controls contained in the Code restrict developments that accommodate activities sensitive to aircraft noise, additions to existing residential dwellings, as well as land divisions, in areas having an ANEF value of 30 or more.

In addition to the Planning and Design Code, the South Australian planning system includes the use of Ministerial Building Standards. These Standards identify additional requirements on matters such as the design, construction, quality and amenity of buildings to be considered as part of the building consent process undertaken by the local government authorities. *Ministerial Building Standard MBS010 – Construction requirements for the control of external sound* provides guidance on what building design and building measures are required to mitigate noise intrusion where a building is within the ANEF.

NASF Guideline A also recommends the use of additional metrics to communicate aircraft noise exposure to the community. Section 13 of this Master Plan provides a detailed assessment of aircraft noise exposure associated with Parafield Airport, including number-above contours as recommended in Guideline A.

12.5 Windshear and Turbulence

Building generated windshear and/or turbulence can become a safety issue for aircraft operations when structures are situated close to airport runways. When a significant obstacle is located in the path of a crosswind to an operational runway, the wind will be diverted around and over the obstacle causing the crosswind to vary in speed along the runway. The greatest risk from windshear and turbulence is on landing and take-off, when an aircraft's speed is low and the pilot's ability to respond to the varying wind speed is limited.

NASF Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports presents a layered approach to the siting and design of buildings near runways to assist land use planners and airport operators to reduce the risk of building generated windshear and turbulence.

Guideline B provides technical criteria to assess buildings against the potential to generate windshear or turbulence and offers design techniques to mitigate these effects. It also provides options for modifying existing buildings.

The windshear assessment areas for Parafield Airport are shown in Figure 12.1.

The South Australian Planning and Design Code includes general guidance for limiting the height of new buildings within a defined area to mitigate the risk of building induced windshear and turbulence. It is however recognised that this does not fully reflect the principles contained in Guideline B. There is no referral trigger within the overlay for PAL to review, comment or provide direction on the development application. PAL will continue to encourage the State Government to ensure that the Guideline is incorporated into the assessment process for off-airport developments in areas which could potentially affect runways or flight paths.

PAL seeks to mitigate the potential impact of windshear and turbulence on airport land. Windshear and turbulence assessments, based on Guideline B criteria, are undertaken for key development activities within Parafield Airport and close to the airport runways in accordance with Guideline B.



PRELIMINARY DRAFT MASTER PLAN 2024 143

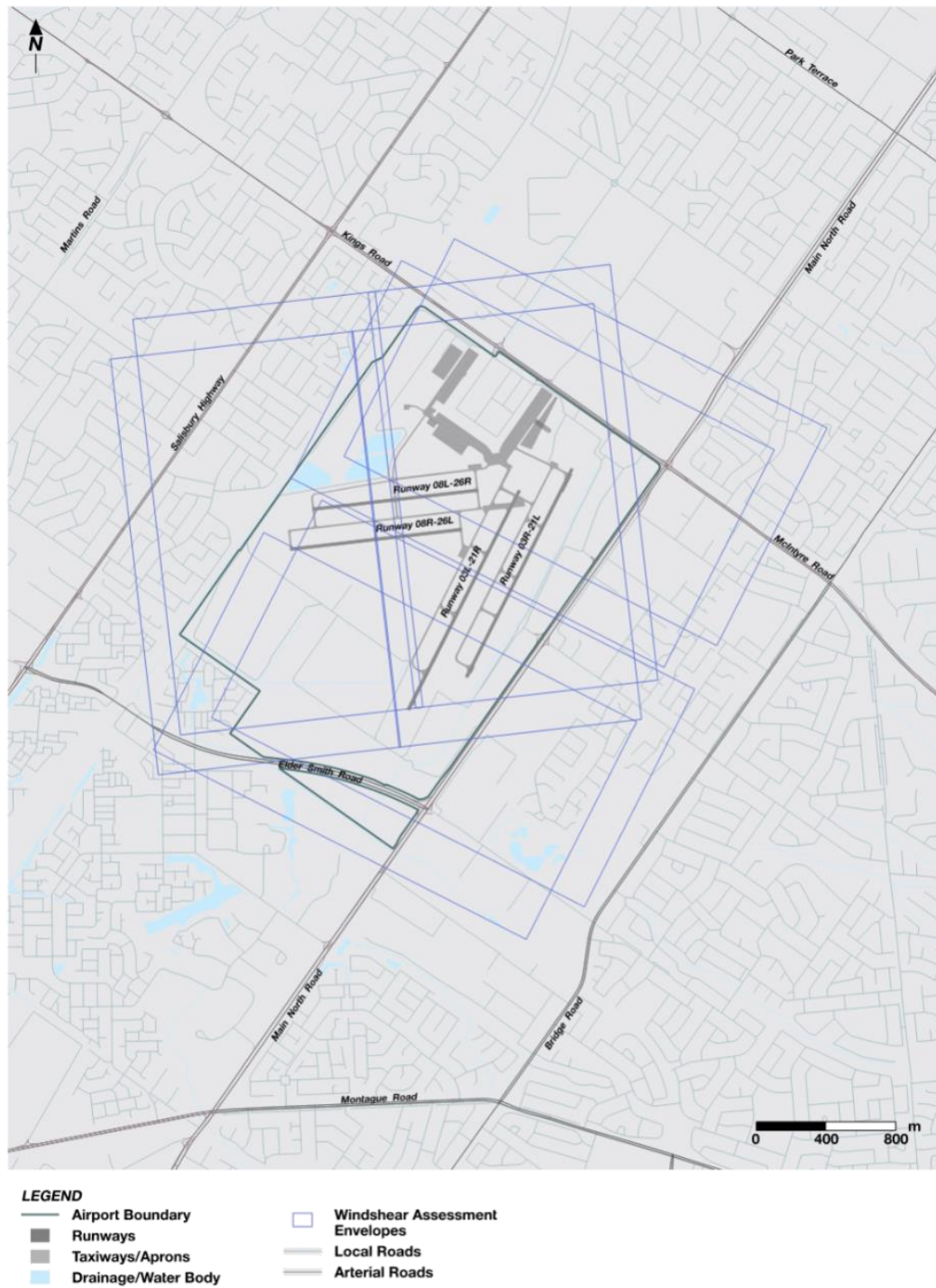


Figure 12.1: Windshear and turbulence assessment envelopes for Parafield Airport

12.6 Wildlife Strike

Wildlife strikes and/or avoidance can cause major damage to aircraft and can compromise aircraft safety. While the Civil Aviation Safety Authority (CASA) has well established safety requirements for wildlife management within the airport, wildlife hazards also occur beyond the airport boundary.

NASF Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports provides advice to help protect against wildlife hazards originating off-airport.

Guideline C does this by recognising that land use planning decisions and the way in which existing land use is managed in the vicinity of airports can significantly influence the risk of wildlife hazards.

As the airport operator, PAL is required to manage the risk of wildlife strike in accordance with Part 139 of the *Civil Aviation Safety Act 1998* and corresponding Part 139 (Aerodromes) Manual of Standards.

PAL has a Wildlife Hazard Management Plan that details the monitoring, assessment, reporting and control measures for managing the risk of wildlife strike. Habitat mapping, aimed at identifying potential risks, and landscaping guidance directed at minimising potential risks, are currently focussed primarily on development activities occurring on-airport.

Many airports, including Parafield, are surrounded by areas that are attractive to wildlife, especially birds. The main risks are that wildlife could cross the flight path of aircraft or migrate onto the airport.

Bird and animal strikes are classified as an air safety incident and must be reported to the Australian Transport Safety Bureau.

Figure 12.2 identifies the wildlife buffer zones for Parafield Airport, based on the criteria in Guideline C. Buffer zones are split into three categories: Area A (three-kilometre radius from the airport), Area B (eight-kilometre radius) and Area C (13-kilometre radius). The Guideline provides guidance on the types of land uses that present a risk of attracting wildlife and triggers (based on the buffer zones) for adopting active measures to mitigate that risk.

Guideline C also outlines the need for development activities and rezoning proposals within 13-kilometres of airports to be appropriately monitored and for airport operators to work with local and state government authorities to ensure that land is appropriately used and developed within the vicinity of the airport.

For developments and activities within Parafield Airport, PAL assesses the potential for wildlife hazards as part of the airport's approval process. Any new development, and ongoing operational arrangements on the airport, must seek to minimise the risk of wildlife strikes through reducing birdlife attraction. Such measures include building design (to avoid nesting opportunities), landscaping species selection, water-detention and retention strategies and waste management practices.

For off-airport developments, the Building Near Airfields Overlay is applied as part of the State Government's Planning and Design Code and it includes general guidance for minimising development that has the likelihood to attract or cause the congregation of wildlife within three-kilometres (Area A) of an airport. There is no referral trigger within the overlay for PAL to review, comment or provide direction on the development application.

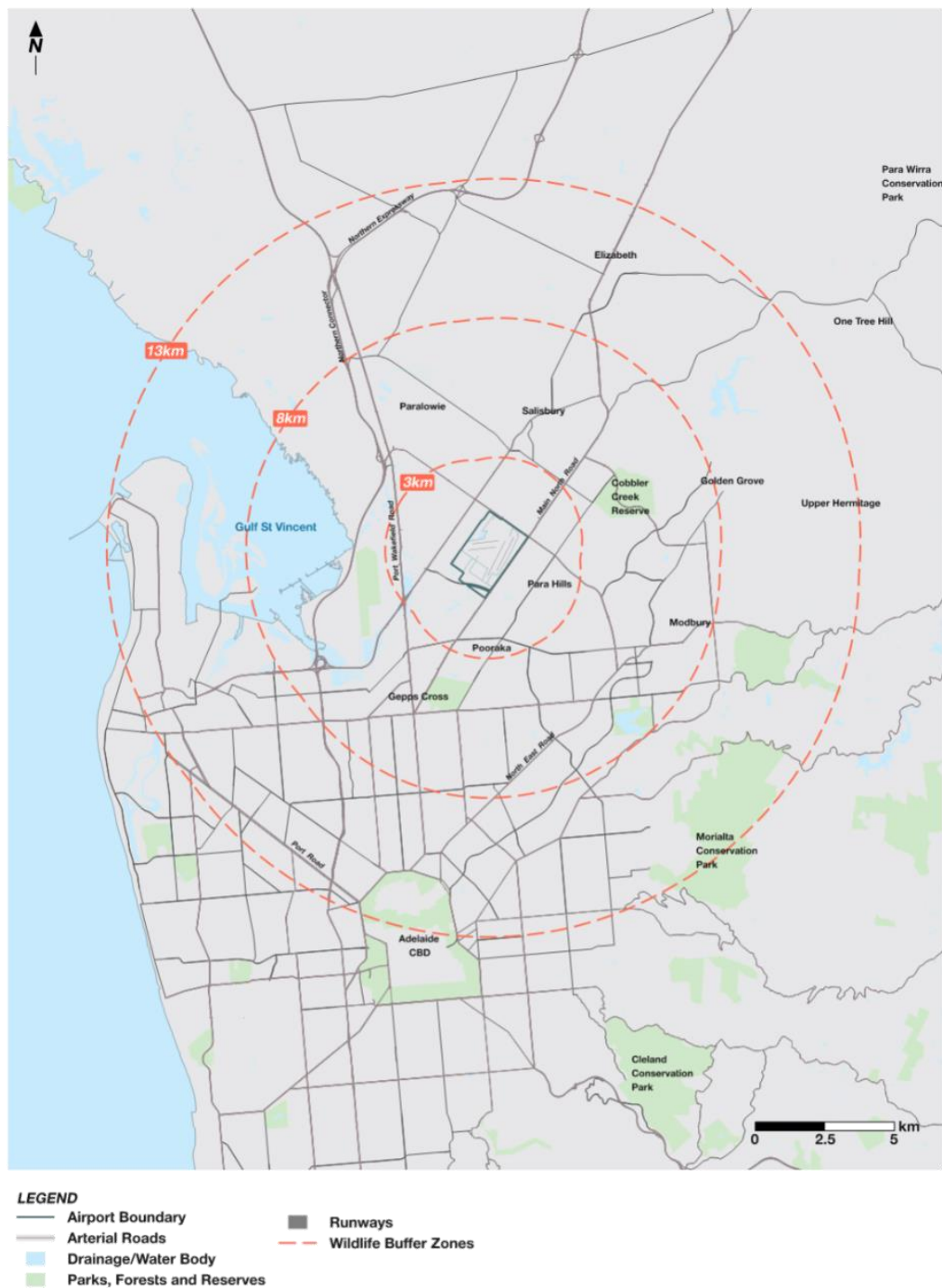


Figure 12.2: Wildlife buffer zones for Parafield Airport

12.7 Wind Turbines

Wind turbines can constitute a risk to low-flying aviation operations such as agricultural pilots. Additionally, temporary, and permanent wind monitoring towers can be erected in anticipation of, or in association with, wind farms and can also be hazardous to aviation, particularly given low visibility. These structures can also affect the performance of communications, navigation and surveillance equipment operated by Airservices.

NASG Guideline D: Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation provides advice on the siting and safety management of these and similar structures.

The risk of wind turbines as a physical obstacle to air navigation around Parafield Airport is controlled under the Airports (Protection of Airspace) Regulations 1996 (see Section 12.9).

Wind turbines are not considered a significant risk to the operations of Parafield Airport given the highly urbanised nature of the areas surrounding the airport.

12.8 Lighting at the Airport and Surrounding Areas

Pilots are reliant on the specific patterns of aeronautical ground lights during inclement weather and outside daylight hours. These aeronautical ground lights, such as runway lights and approach lights, play a vital role in enabling pilots to align their aircraft with the runway in use. They also enable the pilot to land the aircraft at the appropriate part of the runway. It is therefore important that lighting in the vicinity of airports is not configured or is of a pattern that pilots could either be distracted or mistake such lighting as being from the airport.

NASG Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports recognises the potential hazard of inappropriate lighting by specifying performance standards for lighting installations on and in proximity to airports.

This Guideline applies to areas within a six-kilometre radius of Parafield Airport, including on-airport developments. Developers and designers of lighting are required to comply with the Guideline to ensure ground lighting does not interfere with pilot vision on approach to the runways for landing. Advice is available in Chapter 9 of the Part 139 (Aerodromes) Manual of Standards of the Civil Aviation Safety Regulations 1998. CASA has authority under Regulation 94 of the Civil Aviation Regulations 1988 to request interfering lights to be extinguished or modified.

Figure 12.3 shows a plan of the lighting control zones around Parafield Airport.

For developments and activities within Parafield Airport, PAL assesses lighting as part of the airport's development approvals process.

For off-airport developments, the Building Near Airfields Overlay is applied as part of the South Australian Planning and Design Code (see Section 12.3) and includes general guidance for the need for non-residential outdoor lighting to be designed in a manner that does not pose a hazard to aircraft operations. There is no referral trigger within the overlay for PAL to review, comment or provide direction on development applications.

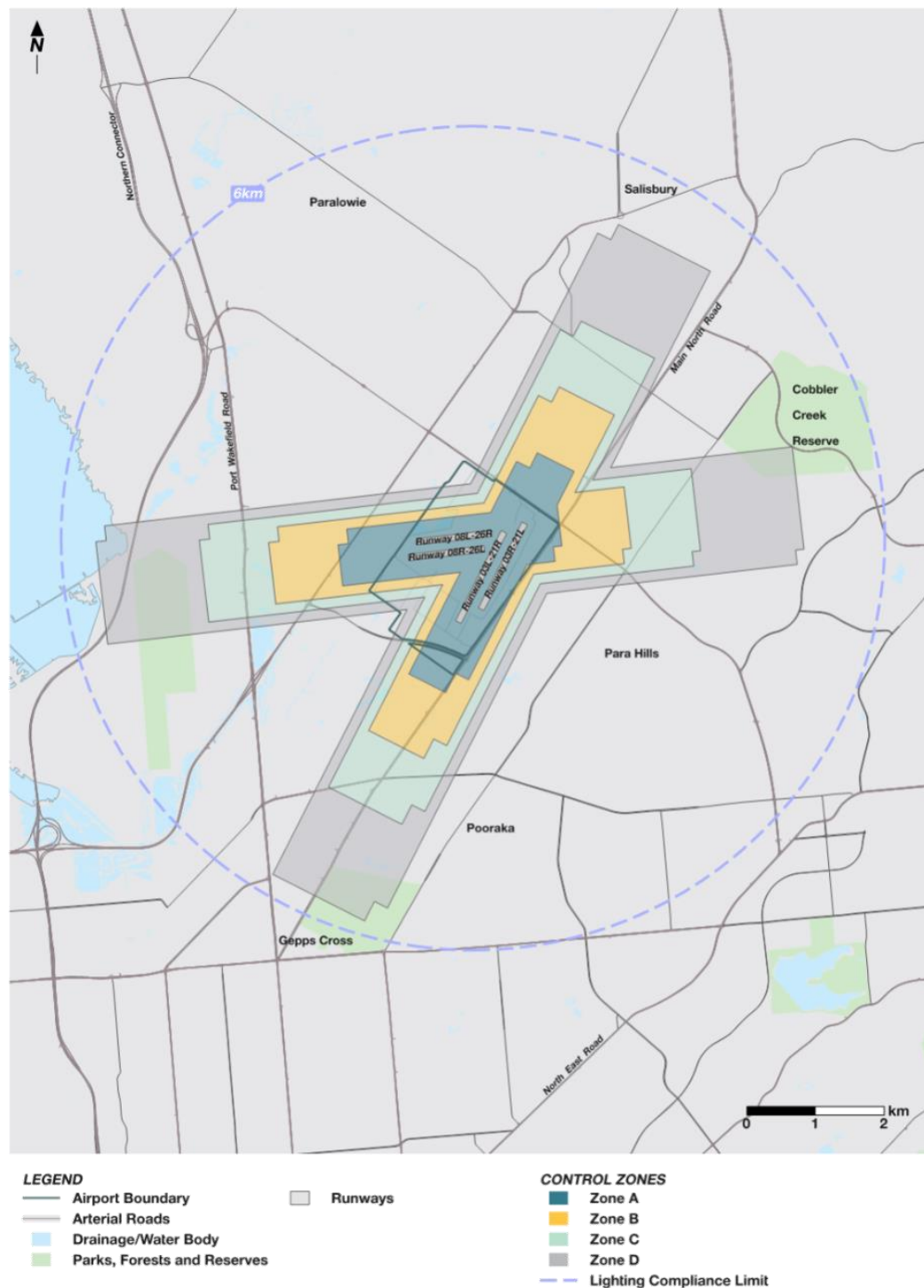


Figure 12.3: Lighting control zones for Parafield Airport

12.9 Protected Airspace

The operational airspace of airports is the volume of airspace above a set of imaginary surfaces, the design of which is determined by criteria established by the International Civil Aviation Organization (ICAO). These surfaces are established with the intent of protecting aircraft from obstacles or activities that could be a threat to safety, such as tall buildings and cranes.

NASF Guideline F: Managing the Risk of Intrusions into the Protected Operational Airspace of Airports provides key advice to planners and decision makers about working within and around protected airspace and how the airspace can be better integrated into local planning processes.

Guideline F considers the critical nature of obstacles, whether natural or constructed, and highlights the serious impact that intrusions can have on the operational efficiency and safe aircraft operations.

It is generally appreciated that tall structures can impact upon airport operations, however this is often only considered for structures that are located a short distance away from the airport and within the immediate approach and take-off areas. While this is of primary concern, it is equally true that objects up to 15-kilometres from the airport and unrelated to the runway alignment can impact upon aircraft approaching or departing an airport, particularly in poor weather conditions or in instances of engine failure.

12.9.1 Prescribed Airspace

ICAO standards have been adopted which define two sets of invisible surfaces above the ground around Parafield Airport. The airspace above these surfaces forms the airport's prescribed airspace. These two surfaces are:

- Obstacle Limitation Surface,
- Procedures for Air Navigation Services – Aircraft Operations,

which are described below.

12.9.1.1 Obstacle Limitation Surface

The Obstacle Limitation Surface (OLS) is a series of surfaces 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. The OLS defines protection

requirements for the initial and final stages of a flight. During these manoeuvres, appropriate visibility must be maintained by 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 is to be kept free of obstacles that may endanger aircraft in visual operations or during the visual stages of instrument flight procedures. 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 considered.

As the OLS is relevant only to visual operations, in exceptional circumstances it may be sufficient to ensure that an obstacle is conspicuous to pilots by appropriate obstacle marking and lighting as nominated by the CASA.

However, if an obstacle is located in the approach and take-off areas, pilots will be forced to make adjustments to their normal take-off and landing to ensure obstacle clearance. Correspondingly, this may restrict the operation of a runway by reducing the available length. The most stringent requirements apply on the extended centreline of a runway in the approach and take-off areas that extend 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 that 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 approach to landing.

Figure 12.4 displays the OLS plan for Parafield Airport. The OLS extends to a 15-kilometre radius surrounding the airport.

12.9.1.2 Procedures for Air Navigation Services – Aircraft Operations

A second group of criteria is used to determine the volumes and dimensions of airspace required to protect the safety of aircraft operating under instrument flight rules, whereby pilots rely solely on aircraft navigation instruments. Airspace protection for these operations cannot allow for the introduction of long-term penetrations.

The relevant criteria are established by the ICAO and are published in a document titled Procedures for Air Navigation Services – Operations (PANS-OPS). The surfaces determined in accordance with the criteria in the PANS-OPS publication are called PANS-OPS surfaces.

The PANS-OPS surfaces are used in the construction of take-off, landing and approach procedures. These procedures enable aircraft to navigate solely by reference to aircraft instruments and are designed to protect aircraft from colliding with obstacles. Minimum safe altitudes are established for each segment of an instrument procedure.

The minimum obstacle clearance requirement is 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 makes visual contact with the ground at or before reaching this minimum descent altitude. If the lowest safe altitude for an instrument procedure must be raised to account for new buildings or other structures, there may be direct impact on airport usability. The higher this altitude needs to be, the less likely it becomes that a pilot will be able to land during low visibility conditions.

Figure 12.5 and Figure 12.6 display the PANS-OPS chart for Parafield Airport.

12.9.2 Airports Act 1996 & Airports (Protection of Airspace) Regulations 1996

The Commonwealth Minister for Infrastructure, Transport, Regional Development and Local Government protects the airspace surrounding airports in accordance with the directions provided in the *Airports Act 1996* (Airports Act) and associated Airports (Protection of Airspace) Regulations 1996 (APA Regulations). This legislation prescribes airspace around the airports for protection from activities that could pose a hazard to air navigation. These are referred to as 'controlled activities' and include:

- Buildings or other structures that may intrude into prescribed airspace, including construction cranes
- An activity that results in artificial or reflected light that exceeds acceptable light intensities or is capable of blinding or confusing pilots
- An activity that results in air turbulence
- An activity that results in the emission of smoke, dust, or other particulate matter
- An activity that results in the emission of steam of gas.

The APA Regulations provide a framework for the assessment and approval of controlled activities. Details of proposed controlled activities are required to be provided to PAL for assessment. Any proposed

activity that would result in an airspace infringement is referred to Airservices and CASA for assessment before being submitted to the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) for approval or refusal.

Infringements of the PANS-OPS surfaces may only be approved by the DITRDCA if the activity is short-term (less than three months) and does not pose an unacceptable effect on the safety or existing or future aircraft operations.

Infringements of the OLS that are of a short-term nature (less than three months), such as cranes, can be approved by PAL following assessment by Airservices and CASA.

In addition, Part 139 of the *Civil Aviation Safety Regulations 1998* also applies. These Regulations and the supporting Part 139 (Aerodromes) Manual of Standards set the standards for the establishment of the OLS at an airport, the requirement for airport operators to monitor and maintain prescribed airspace free of obstacles and regulate the development of instrument procedure designs by CASA and approved entities, including Airservices.

12.9.3 Amendments to Prescribed Airspace

Changes to visual or instrument flight path procedures may require amendment of the OLS or PANS-OPS surfaces at Parafield Airport. There are no changes to the OLS or PANS-OPS surfaces attributed to this Master Plan 2024. Amendments may be made during the period of this Master Plan as circumstance dictates. This would result in changes to the surfaces shown in Figures 12.4 to 12.6.

12.9.4 Development Assessment

For off-airport activities, the Airport Building Heights (Regulated) Overlay is applied as part of the State Government's Planning and Design Code. This overlay includes general guidance regarding limiting the siting and height of buildings in relation to airspace as well as minimising the potential impact generated by emission velocities from exhaust stacks. Development proposals which exceed building height limitations or result in emissions exceeding pre-determined velocities around Parafield airport will trigger a referral to PAL and the Commonwealth for assessment and direction.

There are areas around Parafield Airport where development of land will likely infringe the prescribed airspace. PAL works with development proponents to ensure buildings are below airspace surfaces by providing the applicable height limitations. This information is supplementary to that presented within the South Australian planning system.

Conditions may be imposed on a controlled activity approval. When required, PAL arranges the publication of a Notice to Airmen (NOTAM) to notify aircraft operators of airspace obstacles.

All Airservices designed flight procedures must be protected against future infrastructure developments. Airservices must be notified about any building developments, including the use of associated construction equipment, to ensure that they will not pose a hazard to aircraft operations and that all Airservices designed procedures are safe for aircraft operations. The height of buildings, or the other developments, must not penetrate the visual segment



PRELIMINARY DRAFT MASTER PLAN 2024 151



surfaces associated with approaches to the runways.

Figure 12.4: Obstacle Limitation Surfaces (OLS) plan for Parafield Airport

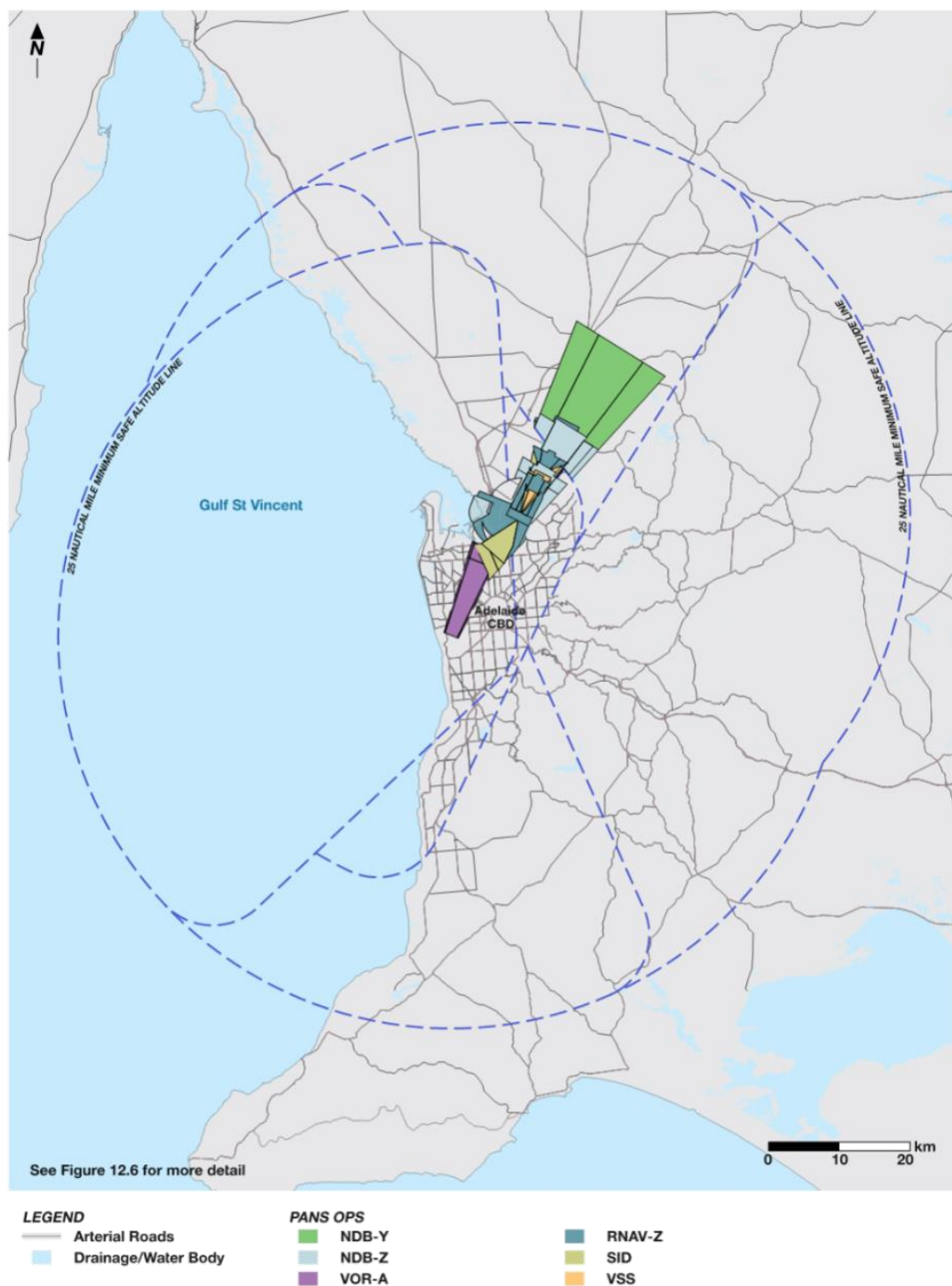


Figure 12.5: Procedures for Air Navigation Services Aircraft Operations (PANS-OPS) surfaces

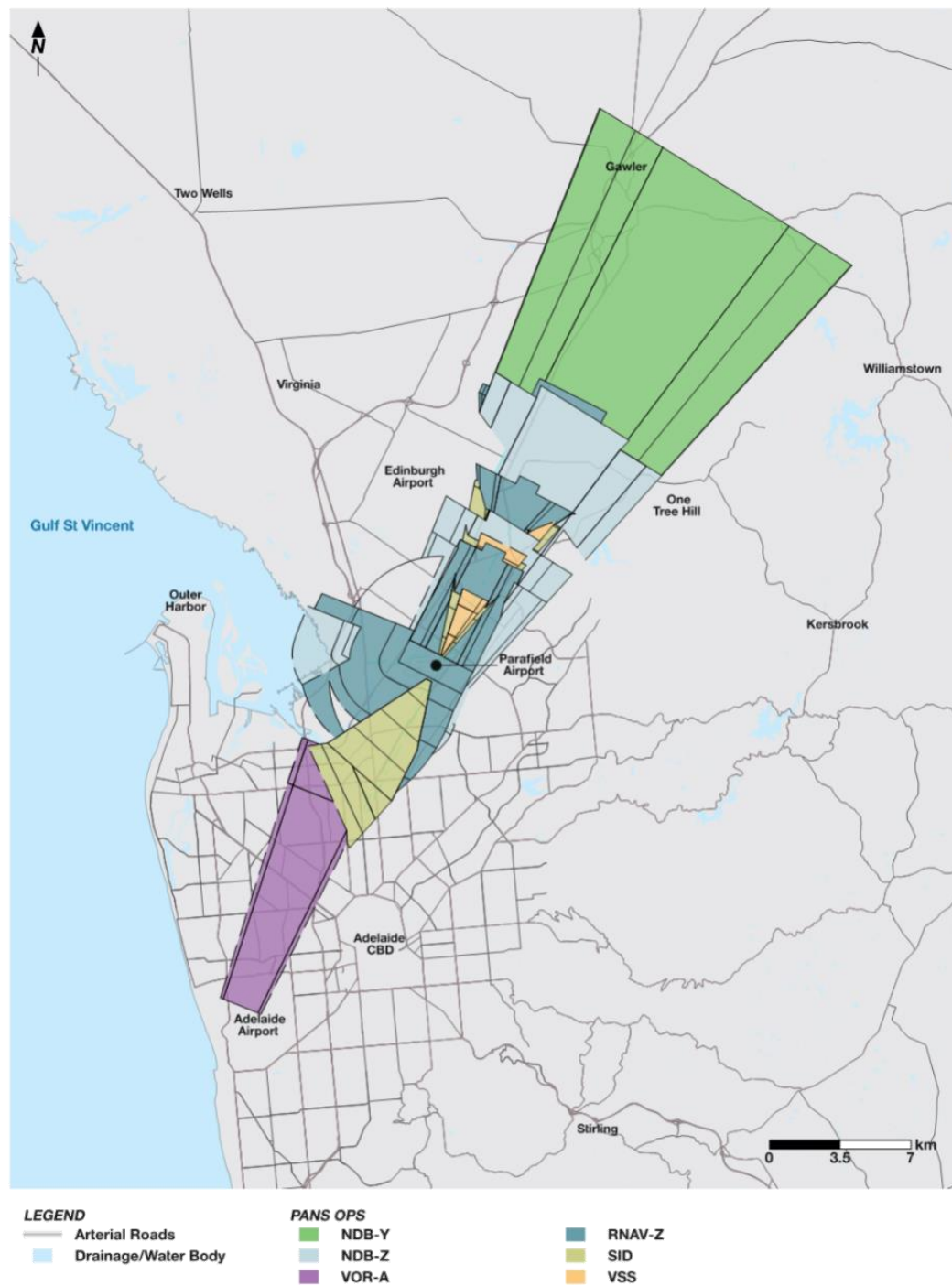


Figure 12.6: Procedures for Air Navigation Services Aircraft Operations (PANS-OPS) surfaces inset

12.10 Protecting Communications, Navigation and Surveillance Facilities

Communications, navigation and surveillance (CNS) facilities are critical to the safe and efficient operation of aircraft. This equipment enables pilots to communicate with air traffic control, navigate while between airports and conduct instrument approaches. While such facilities are generally associated with airports, some are located off-site and can be significant distances from airports, or not associated with airports. Inappropriate development in the vicinity of these facilities can compromise their effectiveness.

Guideline G: Protecting Aviation Facilities – Communication, Navigation and Surveillance (CNS) provides guidance to assist land use planners at all levels of government when considering a particular development proposal or developing strategic planning frameworks and accompanying strategic land use plans. This Guideline also describes circumstances when consultation should occur with Airservices, CASA or the Department of Defence.

There are various CNS systems operating around Australia. Airservices uses radar, radio and satellite communications for the safe and efficient management of aircraft movements on, around and enroute between airports.

There are also additional systems for monitoring wind and other weather parameters used by the Bureau of Meteorology to provide up-to-the minute data for pilots and air traffic controllers to safely make decisions about flight routing, runway selection and landing procedures.

Guideline G prescribes Building Restricted Areas (BRAs) of varying size around each type of CNS facility. The purpose of BRAs is to trigger an assessment by Airservices of potential impacts on CNS facilities from proposed developments. BRAs are not intended to prohibit development, except where it would lead to an adverse impact on a facility.

CASA is responsible for enforcing safety requirements under the *Civil Aviation Act 1988* and the *Air Navigation Act 1920*. Section 21 of the *Civil Aviation Act 1988* enables CASA to take enforcement action where development is, or may be, causing active or passive interference to a communications, navigation or surveillance facility.

When developing near CNS facilities on the airport site, PAL considers Guideline G and works with Airservices to understand and minimise any impacts when necessary.

12.11 Strategic Helicopter Facilities

The protection of strategically important helicopter landing sites, such as those associated with hospitals, from the adverse impacts of development has become a critical issue in recent years.

NASF Guideline H: Protecting Strategically Important Helicopter Landing Sites applies to helicopter sites located off-airport and seeks to provide a consistent national approach for land use planning in the vicinity of these facilities.

State and territory governments are responsible for identifying helicopter landing sites that are considered to be of strategic importance or are to be protected in the interest of public safety.

The Airport Building Heights (Regulated) Overlay is applied as part of the South Australian Planning and Design Code. This Overlay includes general guidance regarding limiting the siting and height of buildings of in relation to airspace so as to maintain operational and safety requirements of registered and certified commercial and military airfields, airports, airstrips and helicopter landing sites. There are currently no helicopter landing sites identified within this overlay.

12.12 Public Safety Areas

Public Safety Areas (PSAs) are designated areas of land at the end of runways within which certain planning restrictions may apply. While air crashes are rare events, the majority occur in the vicinity of airports during take-off and landing.

NASF Guideline I: Managing the Risk in Public Safety Areas at the Ends of Runways and defines PSA's using risk-assessment models to determine acceptable levels of risk for given land uses. The risk considered is that of an aircraft crash which affects public safety.

The purpose of these areas is to limit the number of people living, working or congregating in the defined PSA, and limit or remove the storage of hazardous materials in the defined area. This occurs over time through the introduction of land use controls.

The Guideline was formally adopted by the Standing Committee on Transport and Infrastructure in 2018 to guide state and territory governments in the implementation of PSAs at the end of runways. The introduction of outcomes from Guideline I is the responsibility of the South Australian Government. PAL remains committed to working with the State government to determine the best way of introducing PSAs into the state's planning system.

For development occurring on the airport site, PSAs are considered by PAL in the approval process.



Aircraft Noise

13

13.1 Introduction

The *Airports Act 1996* requires the Parafield Airport Master Plan 2024 to specify the following noise related matters:

- An Australian Noise Exposure Forecast (ANEF)
- Flight paths for the airport
- Parafield Airport's plans, developed following consultation with the operators that use the airport and relevant local government authorities, for managing aircraft noise in areas forecast to be subject to exposure above significant ANEF levels.

Aircraft noise is an unavoidable impact of aircraft operations.

Additional information is provided to ensure stakeholders are informed about aircraft noise management.

13.2 Overview

- Parafield Airport has a 'Fly Friendly' program that is voluntarily entered into by aircraft operators to manage aircraft noise exposure around the airport
- A new Australian Noise Exposure Forecast, which informs land use planning in the vicinity of the airport, has been technically endorsed by Airservices Australia
- Parafield Airport Limited (PAL) has a broad range of programs in place to manage aircraft noise exposure around the airport. These include:
 - Working with Airservices, the air traffic navigation service provider, to implement aircraft noise management activities
 - Working with aircraft operators to observe the 'Fly Friendly' program
 - Noise abatement procedures
 - Management of engine ground running activities
 - Consulting and engaging with the local community
 - Working closely with Commonwealth, South Australian and local governments
 - Consulting with and educating aircraft operators who use the airport
 - Investing in airport infrastructure to support new-generation quieter aircraft, such as electric and hybrid aircraft.



158 PARAFIELD AIRPORT

13.3
Aircraft Noise Management

13.3.1 Roles and Responsibilities

Roles and responsibilities regarding aircraft noise management are shared across a range of organisations, as shown in Table 13-1.

ORGANISATION	RESPONSIBILITY
Aircraft Operators	Aircraft operators purchase particular types of aircraft which are suitable for the type of operations they wish to fly or are currently flying.
Aircraft Noise Ombudsman	The Aircraft Noise Ombudsman oversees the handling of aircraft-noise enquiries and complaints by Airservices Australia and the Commonwealth Department of Defence.
Airservices Australia	Airservices Australia manages the airspace around Australia to maintain control over the movement of aircraft into, and out of, airports in Australia. Airservices also designs and manages the flight paths and manages aircraft noise complaints and enquiries through its Noise Complaints and Information Service (NCIS).
Civil Aviation Safety Authority (CASA)	CASA is responsible for regulation and ensuring safe operation of civil aviation in Australia. CASA is responsible for approving the use of new aircraft types in Australia.
International Civil Aviation Organization (ICAO)	ICAO is responsible for setting noise standards for manufacturers of new aircraft and developing policy on aircraft noise management.
Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA)	The DITRDCA develops and enforces the policy and regulatory framework for airports and the aviation industry and administers the <i>Airports Act 1996</i> .
South Australian Government	The State Government is responsible for developing land-use planning frameworks, implemented by local governments, to protect the airport from inappropriate (noise-sensitive) developments in the vicinity of the airport.
Local Government	Local government authorities are responsible for the consideration and approval of developments in proximity to the airport, including residential dwellings.
Parafield Airport Limited (PAL)	PAL is responsible for providing and maintaining aviation infrastructure at a high standard for aircraft movements and operations at the airport. PAL does not control aircraft noise. However, through direct engagement and through the Parafield Airport Consultative Committee and the Technical Working Group sub-committee, it implements aircraft noise management activities. PAL actively manages ground-based noise at the airport.
Parafield Airport Technical Working Group	The Parafield Technical Working Group sub-committee discusses aircraft-noise management and improvement opportunities.

Table 13-1: Responsibilities for Aircraft Noise Management

13.3.2 Aircraft Noise Mitigation

There is a broad range of programs in place to manage aircraft noise at Parafield Airport. These include:

- The Fly Friendly program
- Noise abatement procedures
- Consulting and engaging with the local community
- Working with the Commonwealth, South Australian and local governments to ensure a consistent approach, management and implementation of noise-mitigation measures
- Consulting with and educating aircraft operators that use the airport
- Investing in airport infrastructure to support efficient operations and new technology
- Supporting quieter aircraft technology.

13.3.2.1 Fly Friendly Program

PAL encourages all aircraft operators to adopt the Fly Friendly program. This program is voluntarily entered into by aircraft operators in order to manage aircraft noise exposure around the airport.

The Fly Friendly program is upheld by all flight training providers where possible. PAL ensures that any new flight training provider is briefed on the Fly Friendly program, and makes regular contact with all flight training providers to remind them of the program requirements.

The Fly Friendly program is periodically reviewed by the Parafield Airport Technical Working Group (see Section 5.4.2).

The current Fly Friendly program operating procedures are:

When safe to do so and/or under direction of Air Traffic Control, aircraft operators are to:

- **Climb to operating heights as soon as possible**
- **Maintain operating height**
- **Reduce engine power as soon as possible**
- **Follow the promulgated flight paths**
- **Avoid residential areas if and where practicable**
- **Do not fly wide circuits – keep as narrow as possible**
- **Use low-powered descent approaches from the training area to reduce noise.**

The latest version of the Fly Friendly program is available from the Parafield Airport website, parafieldairport.com.au.

13.3.2.2 Noise Abatement Procedures

To reduce the impacts of aircraft noise on the community, noise abatement procedures are implemented at many airports around Australia, including Parafield Airport. The use of noise abatement procedures, which include preferred runway use and preferred flight paths, are applied by Airservices Air Traffic Control subject to weather conditions and aircraft requirements. (Adelaide's seasonal wind patterns primarily influence the use of runways as aircraft take-off and land into wind for safety and performance reasons).

The noise abatement procedures for Parafield Airport set out the preferred runway use during specific period of the day.

Circuit training, which is repetitive touch down and take-off operations, is a vital part of the pilot training. Circuit training operations are currently permitted as outlined in Table 13-2.

DAY	TIME
Monday to Friday	7.00 am to 11.00 pm. It has been agreed that circuit training will, where possible, cease by 10.00 pm on weekdays, subject to operational requirements.
Saturday	7.00 am to 9.00 pm
Sunday	8.30 am to 9.00 pm (implemented mid-2011, previously 8.00 am)
Christmas Day	No circuit training
New Year's Day	No circuit training (implemented mid-2011)
Anzac Day	No circuit training before 9.00 am (implemented April 2013)
Remembrance Day	Avoid operations where possible over the Salisbury RSL between 10.55 am to 11.05 am (implemented August 2016)

Table 13-2: Permitted Circuit Operations Hours (January 2023)

The Parafield Airport Air Traffic Control tower is generally operational from 7.00 am to 7.00 pm Monday to Friday and 8.00 am to 6.00 pm Saturday and Sunday. Outside of Air Traffic Control tower operating hours, the preferred runway is 03L/21R (oriented north to south), depending on the prevailing wind conditions.

For circuit operations outside of daylight hours, circuits from runway 03L/21R are conducted to the west of the airport (left-hand circuits from runway 03L and right-hand circuits from runway 21R).

Parafield Airport's noise abatement procedures are published by Airservices and can be found in the En Route Supplement Australia pilot guide, available at airservicesaustralia.com/aip. Airservices conducts regular reviews to check the effectiveness of noise abatement procedures and to consider improvements.

13.3.2.3 Consultation with Local Communities

PAL continues to engage with local communities surrounding the airport through a range of committee and forums.

The Parafield Airport Consultative Committee, which includes local community representatives, is a forum where issues relating to the operations of the airport and potential effects on the local community can be raised. This includes topics such as aircraft ground-based noise, aviation developments and operational updates. Master planning (including the review of the ANEF) and aircraft flight path improvements or changes are also discussed, including presentations from local operators and Airservices.

Airservices has developed online systems to provide information to the community about nearby aircraft operations. WebTrak, available at airservicesaustralia.com/webtrak, provides information about individual flights for the past three months and allows users to submit aircraft noise enquiries and complaints. Aircraft operations for Parafield Airport can be viewed through the Adelaide area portal (noting that some operations for Parafield may not be displayed on WebTrak due to the technology on board the particular aircraft or the nature of the flight).

Aircraft in Your Neighbourhood, available at aircraftnoise.airservicesaustralia.com, provides information about runway use and flight paths for Parafield Airport specific to a person's selected location, including frequency of flights by hour of day and aircraft altitude.

13.3.2.4 Consultation with Commonwealth, State and Local governments

Representatives of the Commonwealth, South Australian and local governments participate in the Parafield Airport Consultative Committee and the Adelaide and Parafield Airport Planning Coordination Forum.

These regular meetings consider off-airport land-use planning including land use development suitability, aircraft noise and airspace protection.

In 2021, South Australia completed its modernisation of the state's planning system and implemented a single, comprehensive planning scheme, called the Planning and Design Code. The introduction of the Aircraft Noise Exposure Overlay within the Planning and Design Code, and corresponding spatial representation of the ANEF, has resulted in the implementation of policy which specifically addresses development of noise sensitive developments on land surrounding Parafield Airport that is subject to the 30 ANEF contour and greater.

13.3.2.5 Consultation with Aircraft Operators and Airservices Australia

PAL conducts regular consultative meetings with aircraft operators and Airservices to review the operation and efficiency of the airport and airfield infrastructure and discuss opportunities for aircraft noise improvements. Aircraft operators, including flying schools, are represented on the Parafield Airport Consultative Committee and the Parafield Airport Technical Working Group. Airservices participates in consultative meetings and reports on aircraft noise complaint trends and any investigations associated with the complaints.

13.3.2.6 Investing in Airport Infrastructure

PAL has a clear vision to develop Parafield Airport as an aviation training centre of excellence and a vibrant economic hub, recognised for its positive influence on the community and economy. As a major component of Australia's aviation training infrastructure, PAL has continued to develop aviation facilities that support efficient operations.

PAL has implemented an Engine Ground Running Procedure and guideline for the ground running (testing) of aircraft engines. Further information of the management of ground-based noise is provided in Section 14.

13.3.2.7 Supporting Quieter Aircraft Technology

Technological advancements in aircraft technology have reduced aircraft fuel consumption, air pollution, and noise emissions significantly over the past 30 years and is expected to continue into the future. Technology is also expected to evolve to change how pilot training is conducted.

Changes in the next 20 years could include the use of sustainable biofuel, electric-powered aircraft, the introduction of air taxis and growth in aircraft drones.

The aircraft industry has been designing and building quieter aircraft that now operate in Australia. This reduces aircraft noise exposure for residents under flight paths. PAL will continue to consult with the aircraft industry and operators with a mutual goal to encourage the uptake of quieter aircraft technology. The use of electric aircraft at Parafield Airport is discussed in Section 6.5.4.

13.4 Understanding Aircraft Noise

Under the Airports Act, PAL is not responsible for the noise generated from aircraft while landing, taking-off or taxiing. However, PAL does recognise the need for the airport to assist in managing aircraft noise for the surrounding communities by working closely with the aircraft operators (the generators of the noise) and Airservices (the airspace manager). The most effective means for reducing the impact of aircraft noise is through the effective long-term planning of land use for areas adjacent to the airport site. Other means include a combination of land use with alternative runway allocations and/or adopted flight path procedures, restrictions of aircraft movements by aircraft type, and the implementation of aircraft operational procedures aimed at achieving desired noise-abatement objectives.

The current trend in renewing aircraft fleets also has the advantage that newer aircraft types are generally quieter than existing or older aircraft. The Airports Act requires a Master Plan to include forecasts of noise levels resulting from the operation of the airport. The Commonwealth government has specified the use of the Aviation Environmental Design Tool software which produces the Australian Noise Exposure Forecast (ANEF) for an airport. The ANEF is applied by state and local government authorities to determine the suitability of land-use and proposed developments around an airport.

To inform the community of current and future noise exposure, Number-Above contours are prepared to identify the frequency of aircraft noise events above specified decibel thresholds.

13.4.1 Describing Aircraft Noise

Aircraft noise is generated both by the aircraft's engines and by air passing over its airframe. Different models and sizes of aircraft produce different types and loudness of noise. These characteristics depend on the type of engine (propeller or jet), aerodynamic noise (affected by how modern the aerodynamic design is) and how the aircraft is flying (its speed and weight characteristics; how it takes off and lands).

Aircraft noise is different to other forms of noise in that it occurs sporadically and from an elevated source. Other forms of noise such as background urban transport noise occur more frequently, with morning and evening peaks and at ground level.

Although aircraft noise is sporadic, it can occur at regular or frequent intervals, depending on the type of aircraft operations.

The noise from aircraft increases closer to airports when aircraft descend prior to landing. At low levels, aircraft noise can be very loud but only for a short period of time. This makes traditional methods of measuring and reporting aircraft noise (such as average sound levels) unsuitable.

To address this, aircraft noise is measured and analysed in terms of frequency of occurrence, peak noise levels during an overflight, loudness levels, and duration of the noise event. These characteristics are integrated over longer periods of time to describe the aircraft noise exposure at locations around airports.

13.4.2 Noise Plots

The Commonwealth government has adopted a system for modelling current and forecast aircraft noise exposure around airports.

There are a range of different types of plots that display noise exposure, including:

- **ANEI (Australian Noise Exposure Index)**

An ANEI is a plot of defined noise exposure based on the *actual* historical operations of the airport and uses an analysis of actual aircraft types and movements over a 12-month period (usually a calendar year). An ANEI is primarily used to establish a base case from which an ANEF 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 exposure over time and is used to inform land-use planning in areas surrounding the airport. An ANEF is required to be endorsed by Airservices for technical accuracy. An airport can only have one endorsed ANEF at any one time.

- **Number-Above contours**

Number-Above modelling is a frequency-based metric that provides maps of areas that are likely to experience a predicted number of average daily noise events above a specified decibel level from aircraft flying overhead.

13.5 The Australian Noise Exposure Forecast (ANEF) System

The ANEF system is the aircraft noise exposure forecasting system currently adopted in Australia. The aircraft Noise Exposure Forecast (NEF) modelling was developed in the United States of America in the late 1960s and recognised internationally. It was modified in Australia to the ANEF in 1982.

The ANEF system provides a scientific measure of noise exposure from aircraft operations around airports. It provides guidance for land-use planning near the airport. Table 13-3 shows the land-use compatibility as recommended by Australian Standard AS2021:2015 (Acoustics – Aircraft noise intrusion – Building, siting and construction) in relation to the specific ANEF contours.

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 over a year and take into account the existing and forecast Air Traffic Control procedures at the airport because they nominate preferred runways and preferred flight paths for noise-abatement purposes.

The following factors are considered in calculating the ANEF:

- The intensity, duration, tonal content and spectrum of audible frequencies of the noise of aircraft take-offs and landings (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 take-offs and landing movements in both daytime (7.00am to 7.00pm) and night-time (7.00pm to 7.00am) hours
- The topography of the area surrounding the airport.

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)	20-25 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		

Table 13-3: AS2021 Table of Building Site Acceptability Based on 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: 2015 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 use. 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: 2015)
- 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 12-1 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: 2015
- 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 aircraft-noise reduction determined according to Clause 3.2 in AS2021: 2015. For residences, schools etc., the effect of aircraft noise on outdoor areas associated with the building should be considered.
- In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations

13.5.1 Calculation of the Australian Noise Exposure Forecast

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 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 take into account all known annoying aspects in the temporal, frequency spectrum and spatial domains. The EPNL 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 ANEFs 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 a typical 24-hour day. These calculated values do not take account of any background noise levels such as road or rail activities which, particularly in ground transport corridors, could be much higher than aircraft noise.

13.5.2 Noise Threshold Levels

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.

In the area outside the 20 ANEF contour, noise exposure may still be of concern for some individuals. The actual location of the 20 ANEF contour is difficult to accurately define. This is because variations in actual flight paths, operating techniques of pilots, meteorological conditions and topography all have a largely unpredictable effect on the position of the 20 ANEF contour for any given day. Aircraft noise elicits a wide range of individual responses and the reasons for the differences between individuals are largely socially based and complex to quantify. Research has indicated that community response to noise exposure is more predictable than an individual's response.

13.6 Noise Modelling

Modelling of aircraft noise exposure for Master Plan 2024 was carried out using the Aviation Environmental Design Tool (AEDT Version 3c) developed by the United States Federal Aviation Administration (FAA). This internationally recognised, computer-based noise simulation software calculates contours from an analysis of the contribution that 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 noise exposure that different aircraft fleets and/or operational procedures have on the surrounding environs. The AEDT contains a database of current civil passenger and military aircraft along with their performance and typical noise characteristics.

13.6.1 Changes in Noise Modelling Software

The previous ANEF for Parafield Airport was modelled using the United States Federal Aviation Administration's (FAA) Integrated Noise Model (INM Version 7.0d). The INM software has since been replaced by the AEDT.

While the underlying calculation of noise exposure in the AEDT remains similar to INM, the AEDT improves the accuracy of noise modelling through updated aircraft performance and noise data, inclusion of helicopter taxiing operations, more precise modelling of lateral attenuation (noise to the side) for aircraft with fuselage mounted engines, and a new method for airport-specific weather data (temperature, atmospheric pressure, relative humidity, and wind) that reflects the best available science. As a result, even with the same inputs the ANEF contours will differ slightly between the INM and AEDT models.

13.6.2 Methodology

Aircraft noise exposure for Parafield Airport was modelled for two scenarios:

- 2022 actual movements (ANEI)
- 2043 forecast (ANEF)

The ANEF year of 2043 was selected as it reflects the 20-year planning horizon of this Master Plan 2024. A 20-year ANEF is also the standard ANEF forecast period. Longer-term future forecasts would have a number of variables that cannot be easily assessed at this stage, such as the future uptake of electric/hybrid aircraft (discussed in Section 6.5.4) and vertical take-off and landing (VTOL) aircraft (discussed in Section 8.5.7).

13.6.3 Flight Movements

The forecast number of flights operating from Parafield Airport in the future is discussed in Section 6. The noise modelling for Parafield Airport is based on the forecast for 2043 of 329,068 fixed wing movements and 13,278 helicopter movements.

13.6.4 Aircraft 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 flying schools, airlines and industry sources regarding future purchases and any expected retirement of aircraft in the 20-year period.

The aircraft fleet mix used for modelling is shown in Table 13-5. This forecast is generally reflective of the current fleet mix. The forecast movements comprise 95.7 per cent propeller aircraft, 0.5 per cent small jet aircraft, and 3.8 per cent helicopters. The predominant aircraft type is the Diamond DA40, which is a four-seat single-engine propeller aircraft that is used extensively for pilot training activities.

13.6.5 Runway Utilisation

Parafield Airport has a total of four runways, comprising two sets of parallel runways. During Air Traffic Control tower operating hours, Airservices air traffic controllers stipulate which runway direction is the operational runway. This is typically determined by the direction of the wind, as aircraft predominantly take off and land into the prevailing wind, but may also be influenced by operational or other requirements such as taxiing distance, destinations, runway availability and maintenance.

Runway direction at Parafield Airport for fixed wing aircraft is shown in Table 13-4. The forecast runway use for the ANEF has been determined through analysis of wind gust speed and direction data for the period 2013 to 2023 and application of Air Traffic Control operating rules and procedures.

RUNWAY DIRECTION	ANEF 2043	2022 ANEI	MASTER PLAN 2017
03	32.8%	32.8%	32.1%
21	54.4%	54.4%	63.0%
08	3.8%	3.8%	0.7%
26	9.0%	9.0%	4.2%

Table 13-4: Parafield Airport runway use comparison

13.6.6 Flight Paths

The Airports Act requires a Master Plan to include the current and future flight paths for an airport.

Aircraft generally fly along flight paths following navigational procedures which have been designed to guide the aircraft between waypoints either away from, or towards, an airport, and circuit paths that provide an orderly flow for take-offs and landings. The flight paths used are determined by the runway, the destination of the flight, and pilot or Air Traffic Control operational requirements.

The flight paths used for the Parafield Airport noise modelling were developed through a detailed analysis of radar flight track data provided by Airservices, which show the actual tracks that aircraft have flown. There is always some variation in the actual tracks flown by aircraft. To account for this variation, flight paths are illustrated as an indication of the spread of flight tracks. The flight path use is concentrated in the centre, where most aircraft are expected to fly.

There have been no changes to published flight paths since Master Plan 2017.

AEDT CODE	COMMON AIRCRAFT TYPES	ANNUAL MOVEMENTS 2043
Small turbo-propeller (non-jet) aircraft		
BE30	Beechcraft King Air 200	53
BEC58P	Beechcraft Baron, Cessna 337	1,625
C441	Cessna 441	11
CNA172	Cessna 172, Cessna 175	34,176
CNA182	Cessna 182	2,739
CNA20T	Cessna 206	1,237
COMSEP	Cirrus SR22	267
DA40	Diamond DA40	240,263
GASEPF	Cessna 152, Piper PA28/28R/PA38, Diamond DA20	15,671
GASEPV	Tobago, Cessna 210, Air Tractor AT-802, Vans RV6/RV7, Beechcraft Bonanza	7,379
PA30	Piper PA-30, Diamond DA42	21,550
PA31	Piper PA31 Chieftain	106
PA42	Cessna 208	143
T42	Beechcraft Baron, Fletcher FU-24	2,170
Small jet aircraft		
LEAR35	Learjet 35 Business Jet	1,500
MU3001	Cessna Citation V560	32
T37B	Marchetti S-211	77
Helicopters		
B206B3	Bell 206	578
B427	Eurocopter EC35, Airbus H135	198
B429	Sikorsky H-60, Kawasaki BK117	114
EC130	Eurocopter AS50/AS55/EC130, Aerospatiale Gazelle	941
R22	Robinson R22	8
R44	Robinson R44	5,754
SC300C	Hughes 269A	5,408
TOTAL		342,000

Table 13-5: 2043 forecast movements by aircraft type

13.6.6.1 Arrivals and Departures

Flight paths are three-dimensional corridors designed to separate arriving aircraft from departing aircraft. Flight paths are designed for pilots operating by either visual flight rules (where the pilot is guided by visual references on the ground) or instrument flight rules (where the pilot is guided by on-board and on-ground navigation systems). Aircraft will fly differently within the shown flight paths for a range of reasons, such as aircraft type and speed, pilot skills, and whether the pilot is flying under visual or instrument flight rules.

Parafield Airport has arrival procedures for specific on-board navigation aids and ground-based aids located at the airport. There is a Very High Frequency Omni-directional Range (VOR) procedure that utilises an on-ground short-range radio navigation aid which emits radio signals for pilots to determine their position. Runway 21R has an arrival procedure based on the Non-Directional Beacon (NDB), which is a radio-based aid located at the airport, as well as a Required Navigation Procedure (RNP) that utilises on-board global navigation satellite systems to provide guidance to pilots. The VOR, NDB and RNP procedures are not available to be used for training purposes.

The general location of Parafield Airport's arrival and departure flight paths are provided in Figures 13.1 to 13.9.

13.6.6.2 Circuits

The circuit path is a flight path pattern that ensures the orderly take-off and landing flow of aircraft operations at an airport. Circuit path parameters are based on CASA guidelines which dictate the circuit shape, location and proximity to the runway.

Figures 13.10 to 13.12 show the typical circuit paths for fixed wing aircraft and helicopters operating at Parafield Airport.

Circuit training, which is repetitive touchdown and take-off operations, is an essential part of pilot training in both daylight and night-time hours and is the most common use of the circuit paths at Parafield Airport. As described in Section 13.3.2.2, circuit training is voluntarily restricted to specific hours as part of Parafield Airport's Fly Friendly program. The actual circuits that are flown may vary for many reasons including, but not limited to, the following:

- Aircraft and engine performance characteristics
- Pilot skill and performance
- Differing turning circles and cruise speeds of aircraft (like those of motor vehicles)

- Weather conditions, such as air temperature, atmospheric pressure, and wind direction and strength
- 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
- Instructions from Air Traffic Control, for example altering the flight path to allow for other circuit traffic or traffic departing from or arriving at Parafield Airport.

13.6.6.3 Fixed Wing Circuits

The parallel runways at Parafield Airport enable two circuits to operate at once. When the main runways (03R/21L and 03L/21R, oriented approximately north to south) are in use, aircraft will operate to the east and west of the airport. When the secondary runways (08R/26L and 08L/26R, oriented approximately east to west) are in use, aircraft will operate to the north and south of the airport.

A typical circuit for fixed-wing aircraft involves:

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

The actual locations that pilots make their turns are relative to the runway being used and the operating performance of the aircraft, rather than a specific reference point on the ground. As an example, the exact location of an aircraft when it reaches 500 feet for the first turn will vary due to factors such as aircraft type and performance, weather conditions, and pilot technique. The actual circuit path flown is also influenced by Air Traffic Control requirements and other aircraft in the circuit.

13.6.6.4 Helicopter Circuits

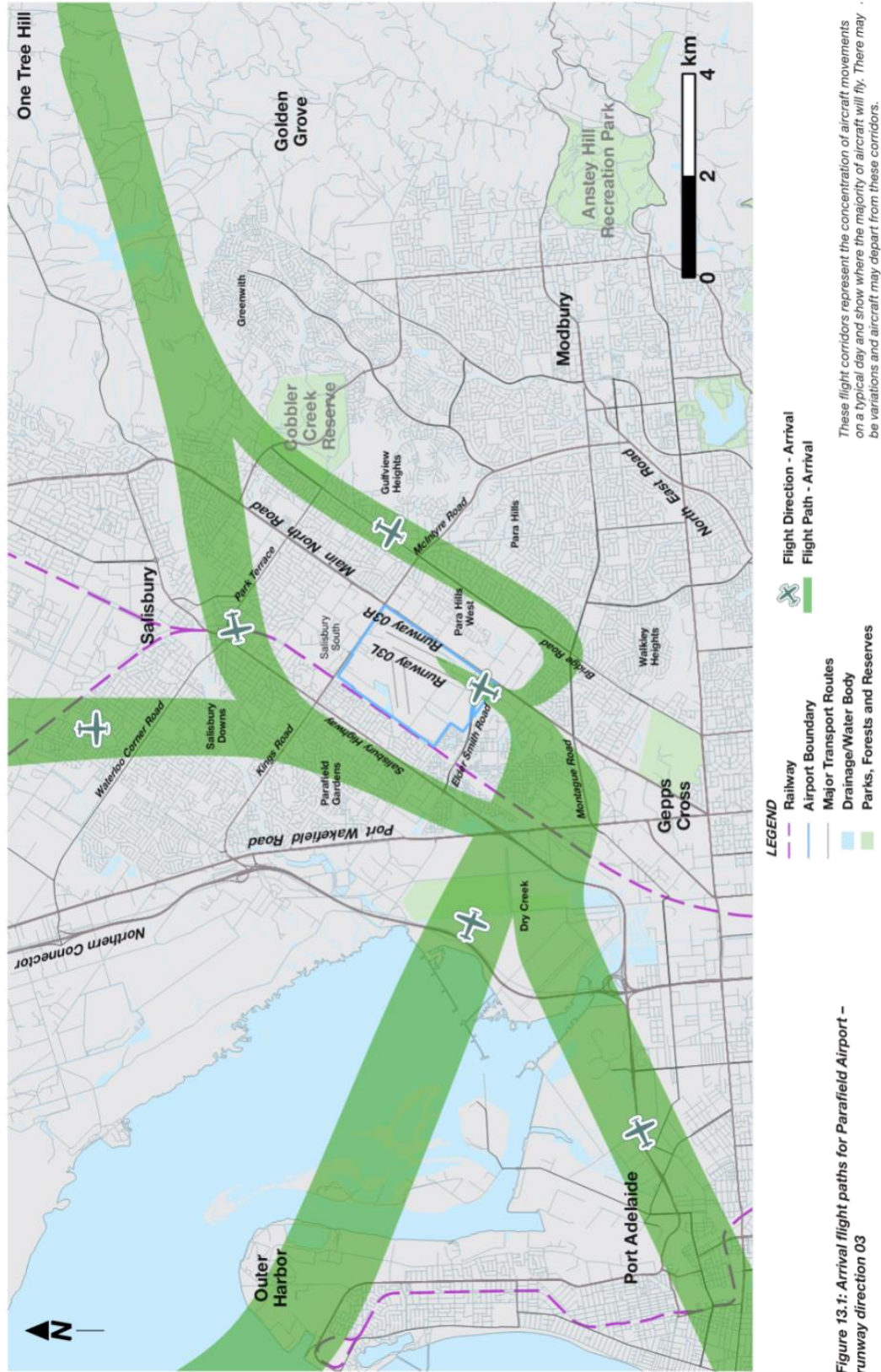
Helicopter circuits at Parafield Airport have been developed in liaison between the helicopter flight training school and Airservices Australia, following CASA guidelines. The helicopter circuit paths are designed to be inside of the fixed-wing circuit path and reduce overflight of residential areas as much as practicable. Helicopters continue to climb after take-off until levelling out at 800 feet above ground level. Current procedures permit a maximum of three helicopters to operate in the circuit path at the same time.

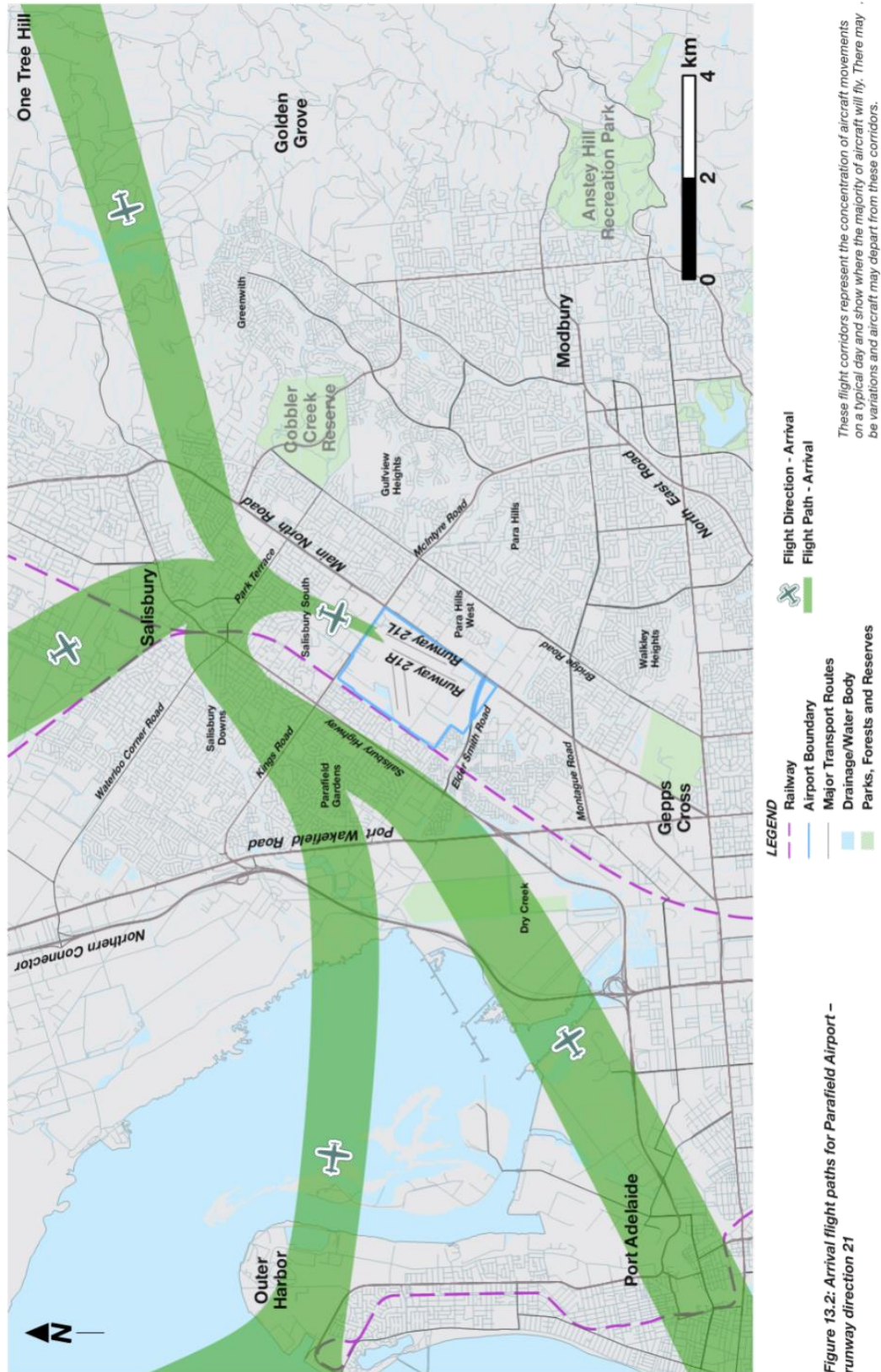
13.6.6.5 Night Circuits

Night flying is an essential component required to achieve pilot qualifications. Circuits can only be conducted at night from runway 03L/21R as this is the only runway with lighting at Parafield Airport. This means night circuits will only be flown to the west of the airport in the typical circuit pattern.



PRELIMINARY DRAFT MASTER PLAN 2024 169





PRELIMINARY DRAFT MASTER PLAN 2024 171

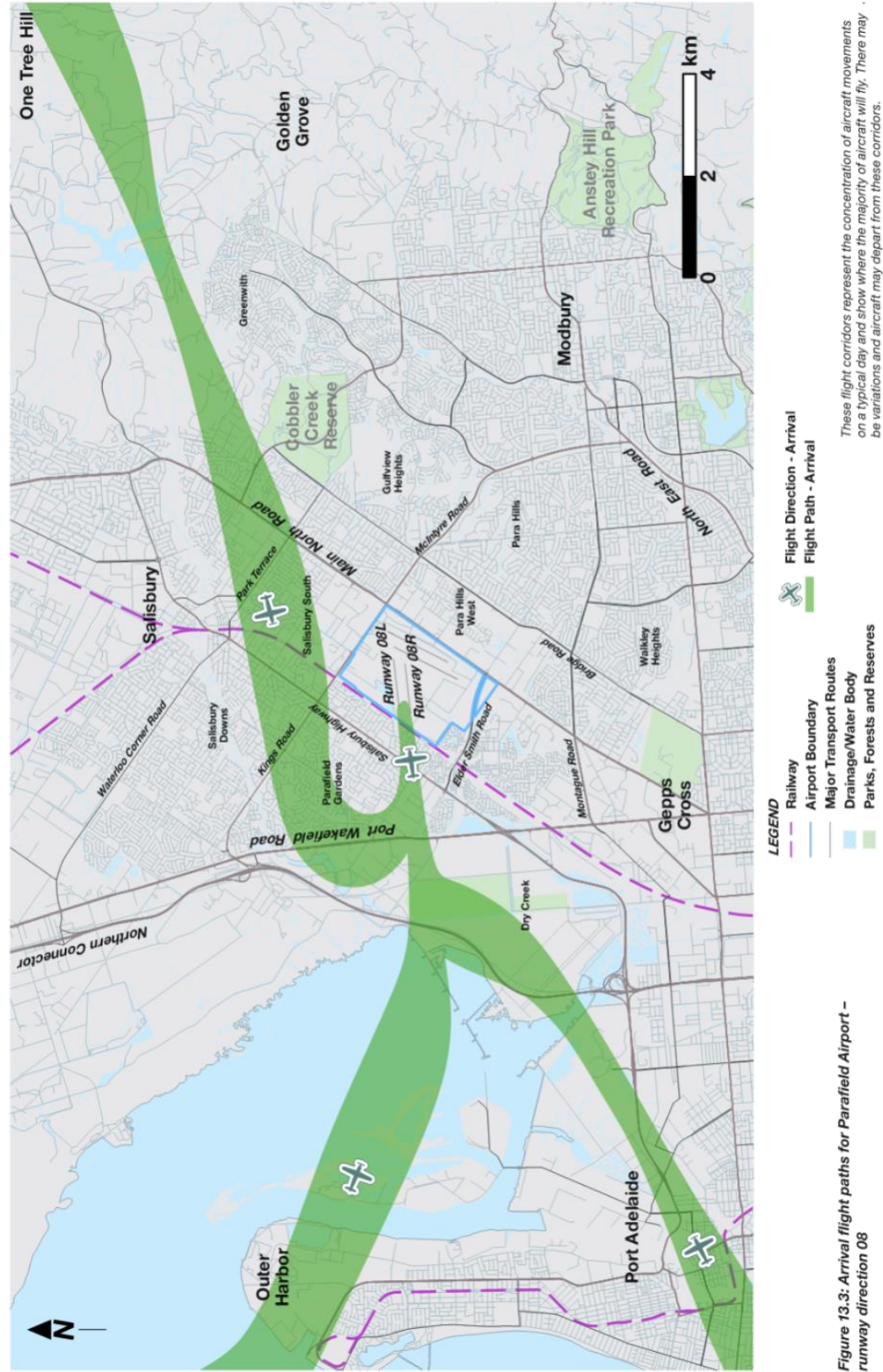
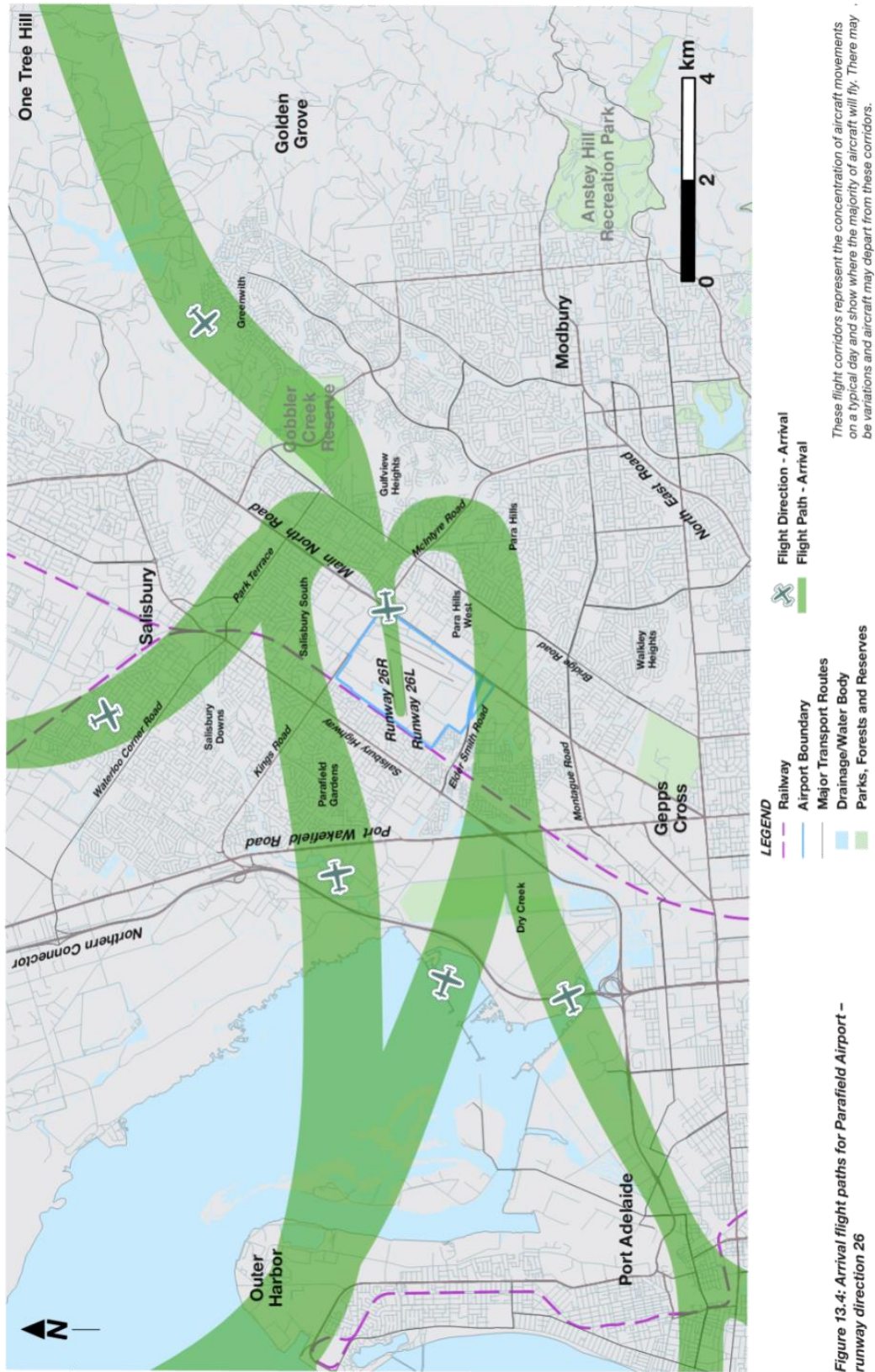
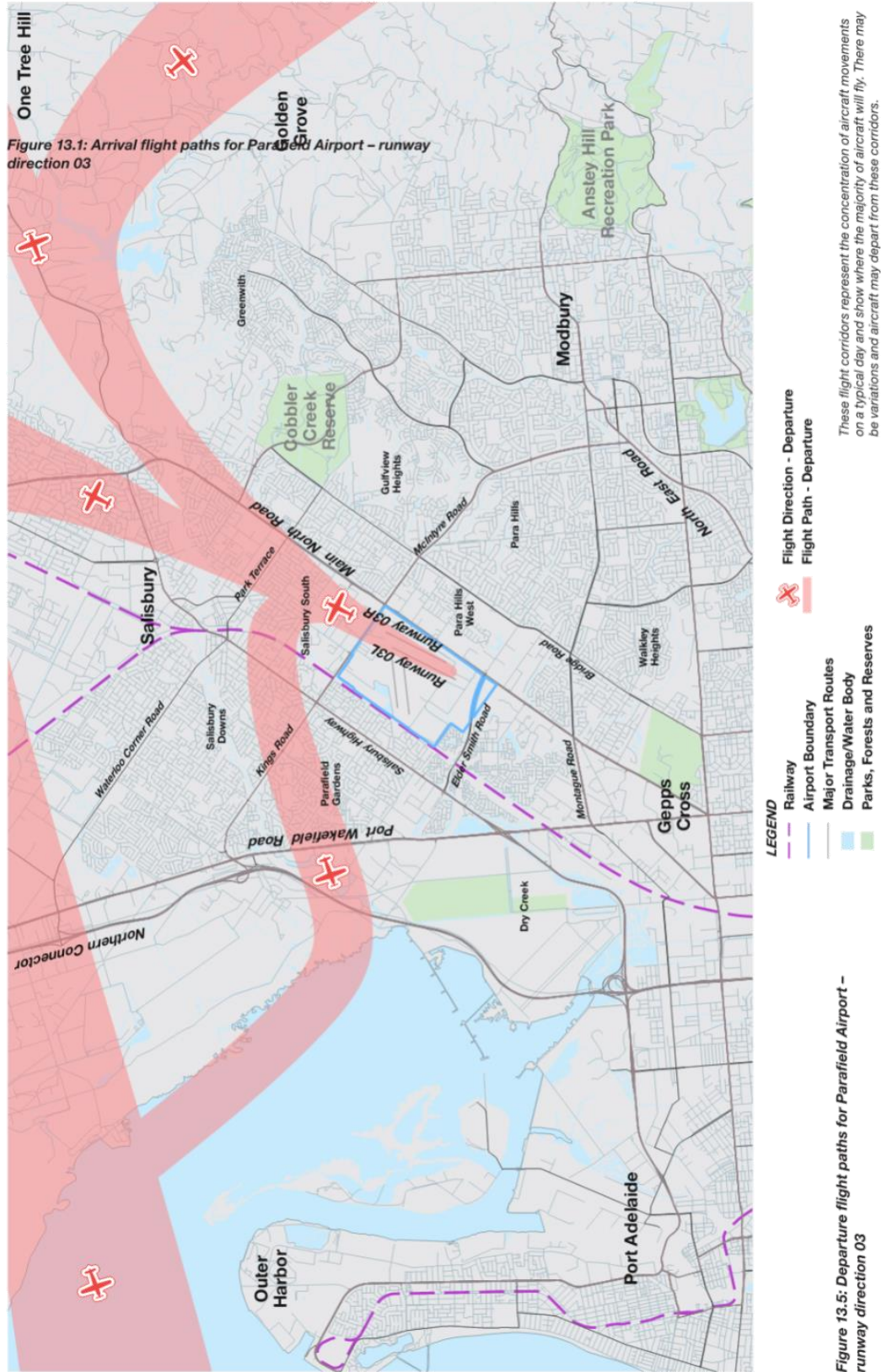
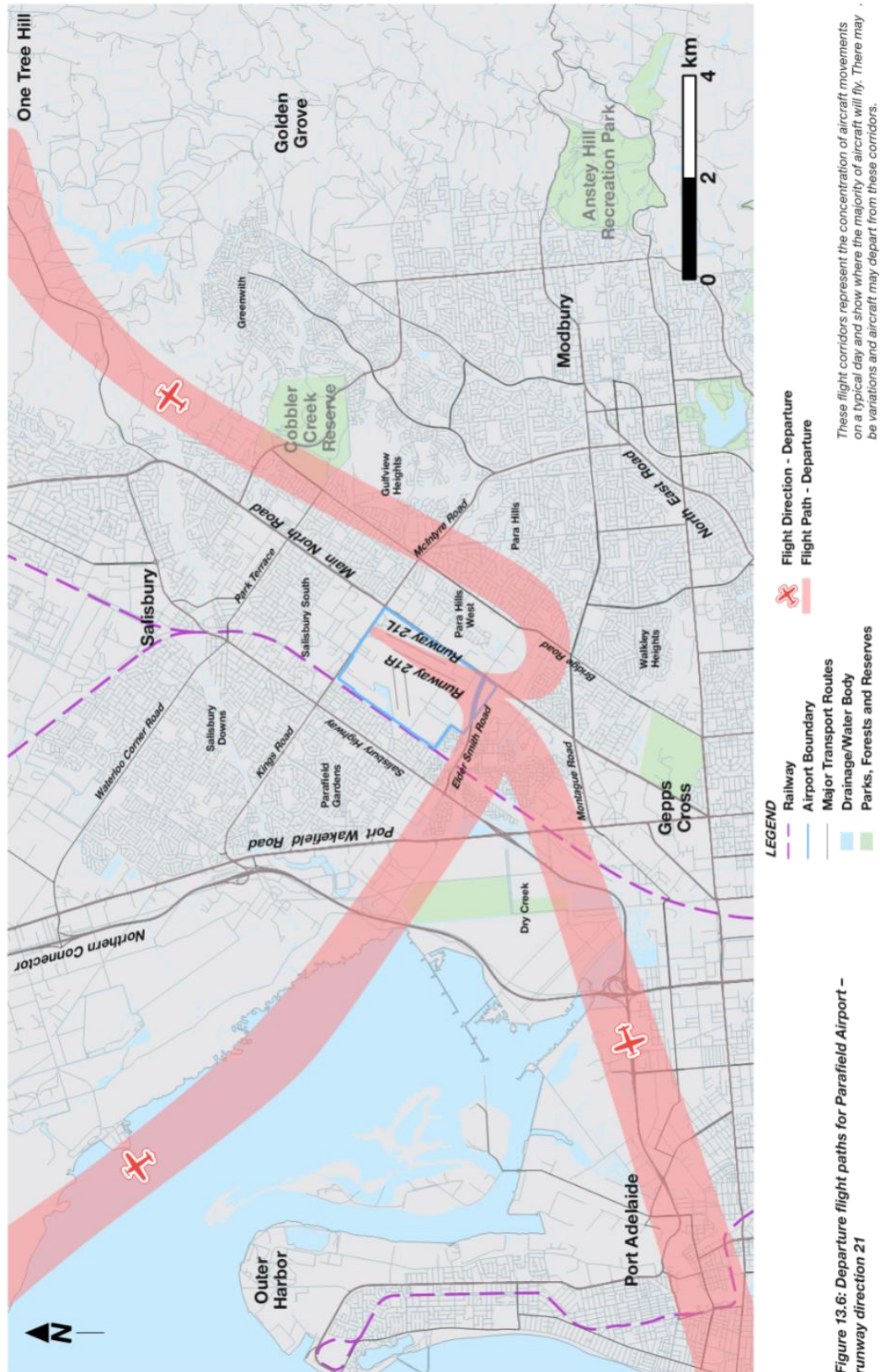


Figure 13.3: Arrival flight paths for Parafield Airport – runway direction 08



PRELIMINARY DRAFT MASTER PLAN 2024 173





PRELIMINARY DRAFT MASTER PLAN 2024 175

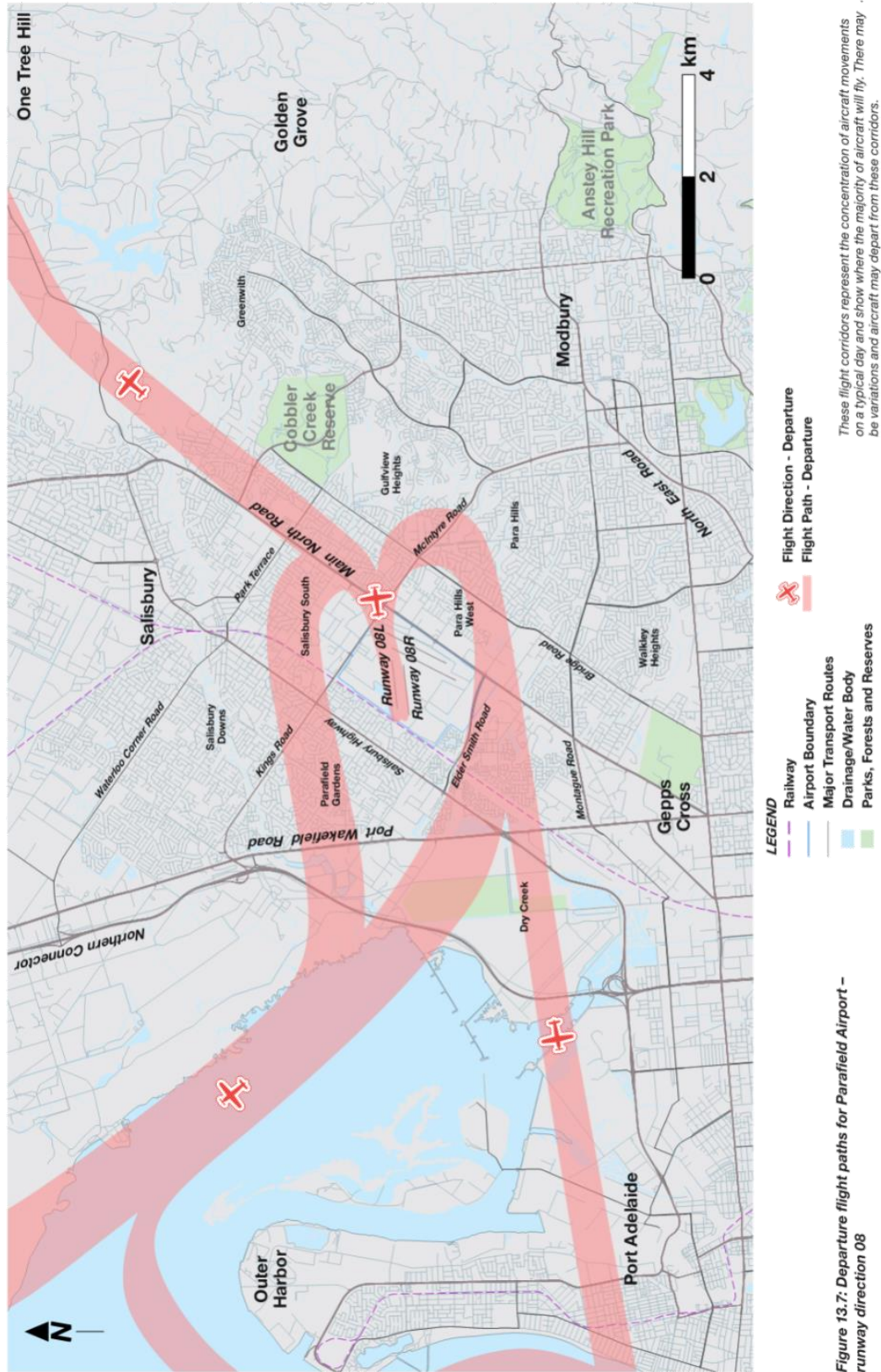
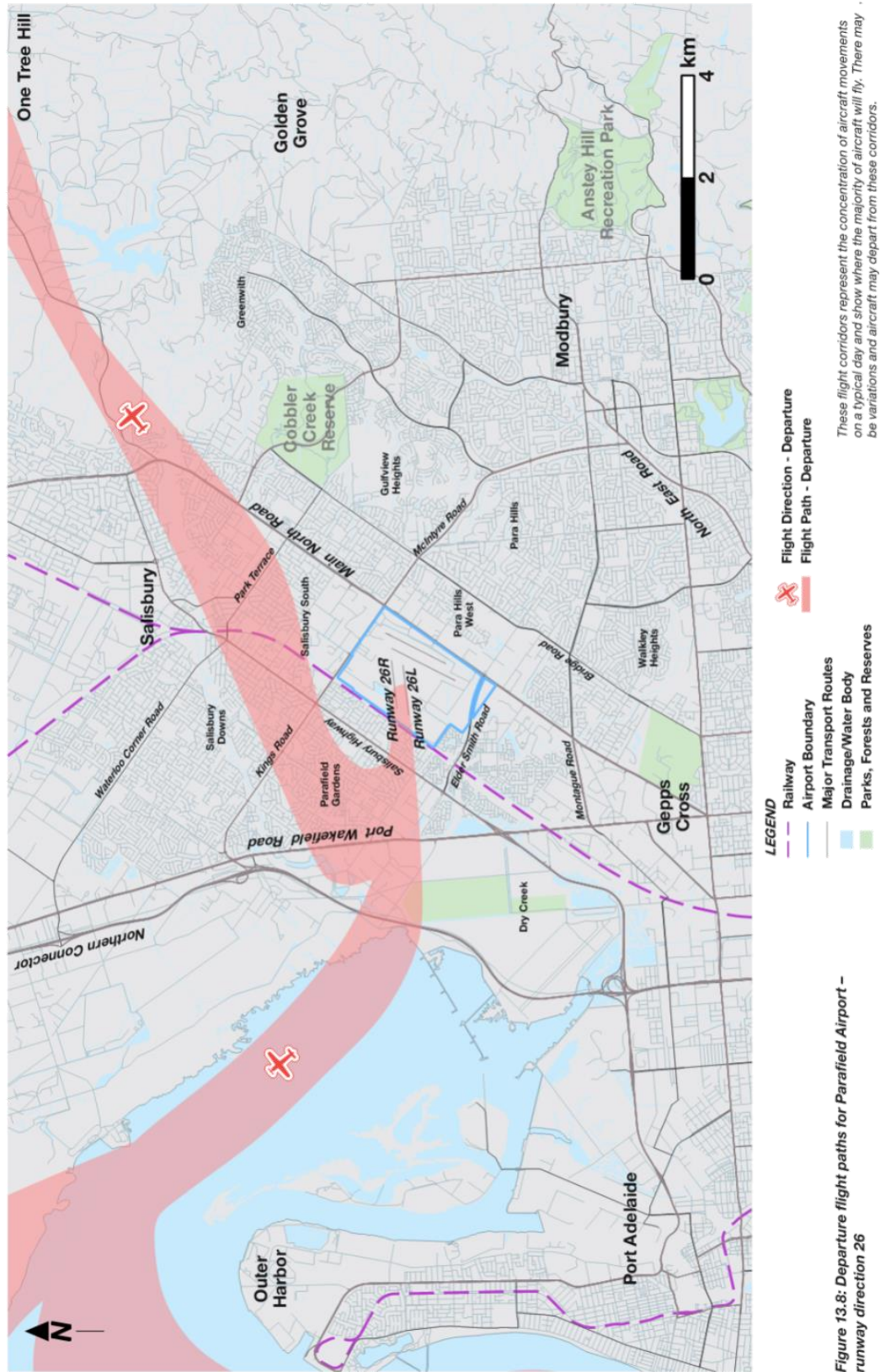
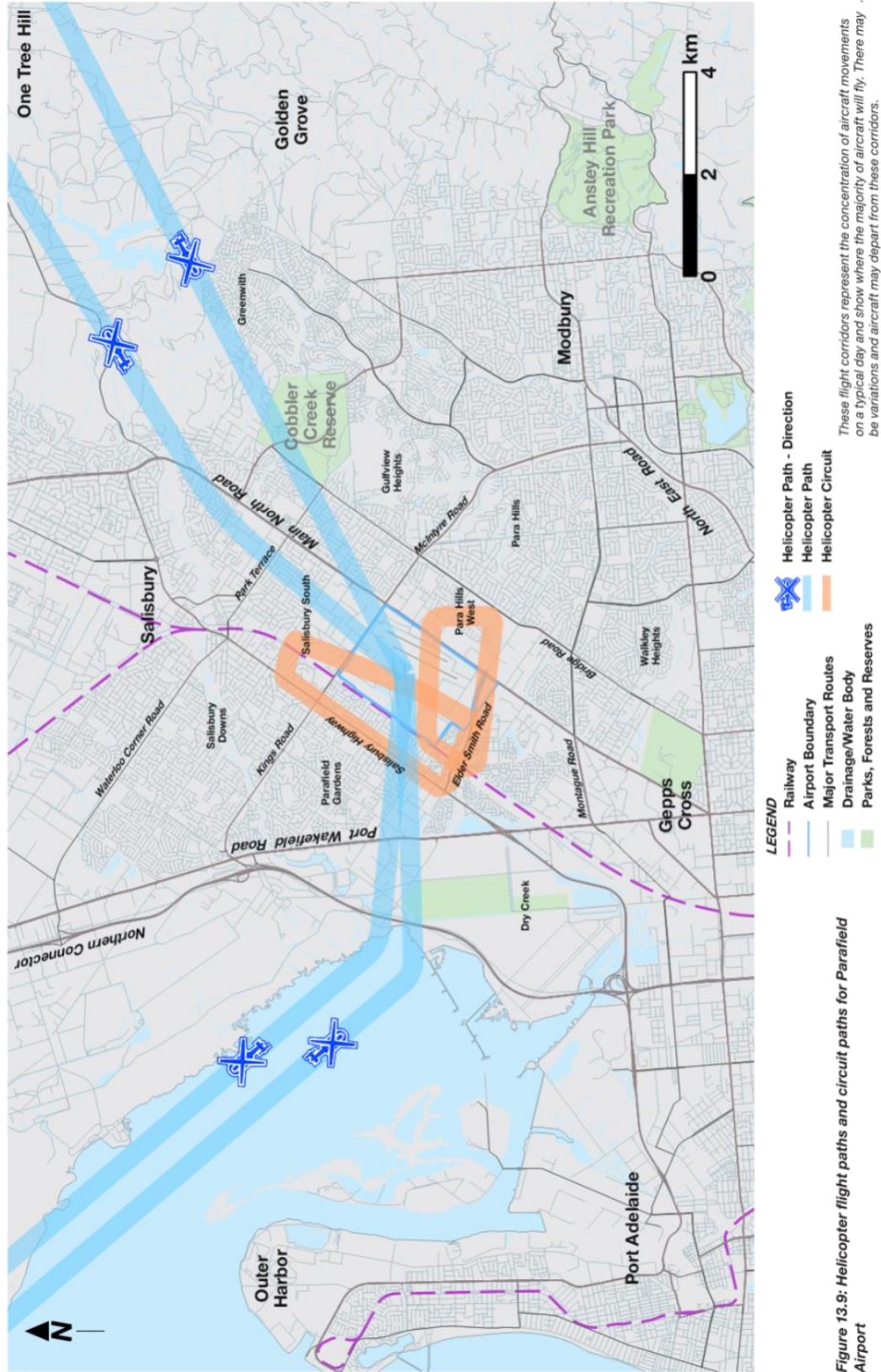
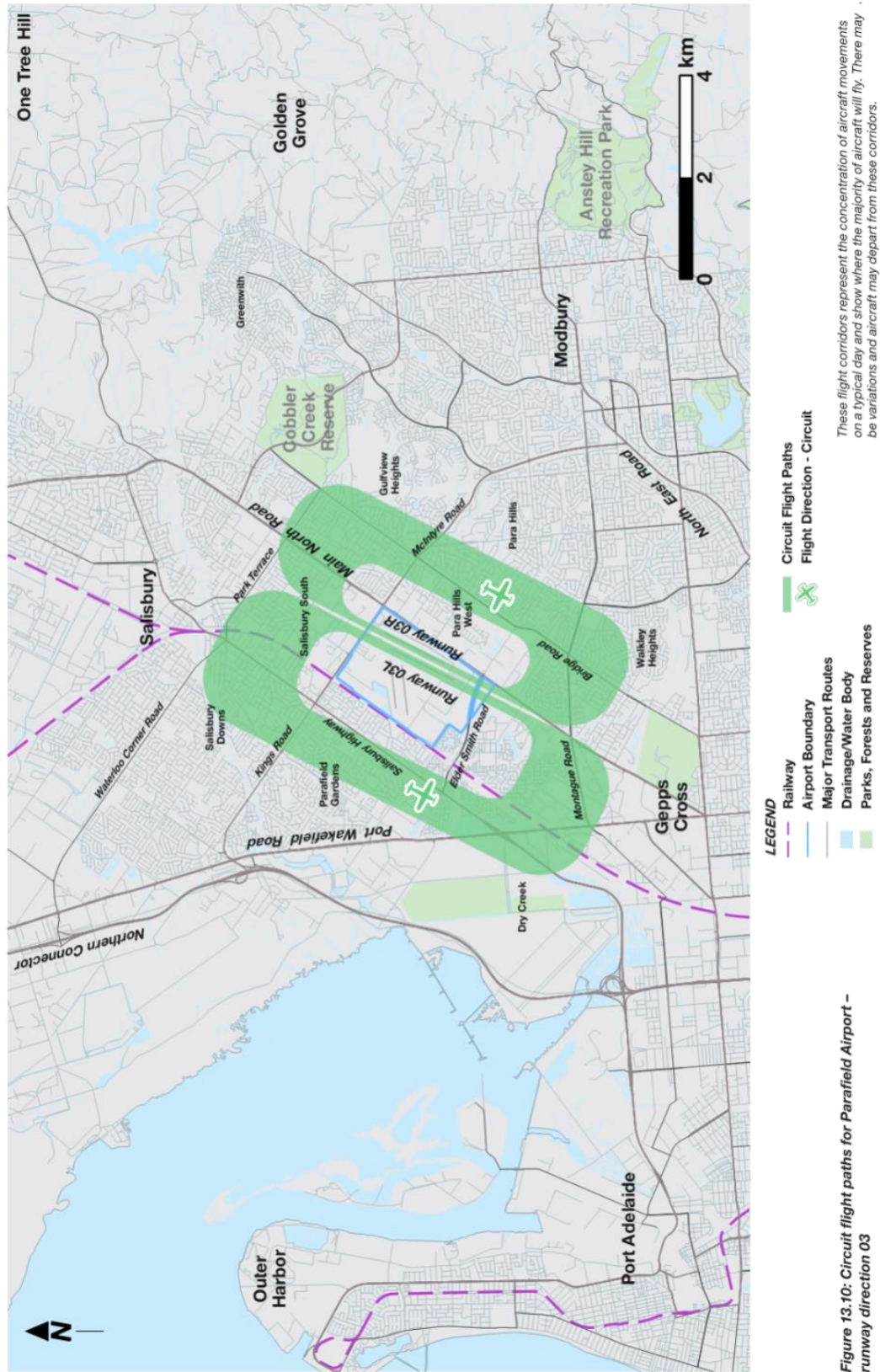


Figure 13.7: Departure flight paths for Parafield Airport – runway direction 08



PRELIMINARY DRAFT MASTER PLAN 2024 177





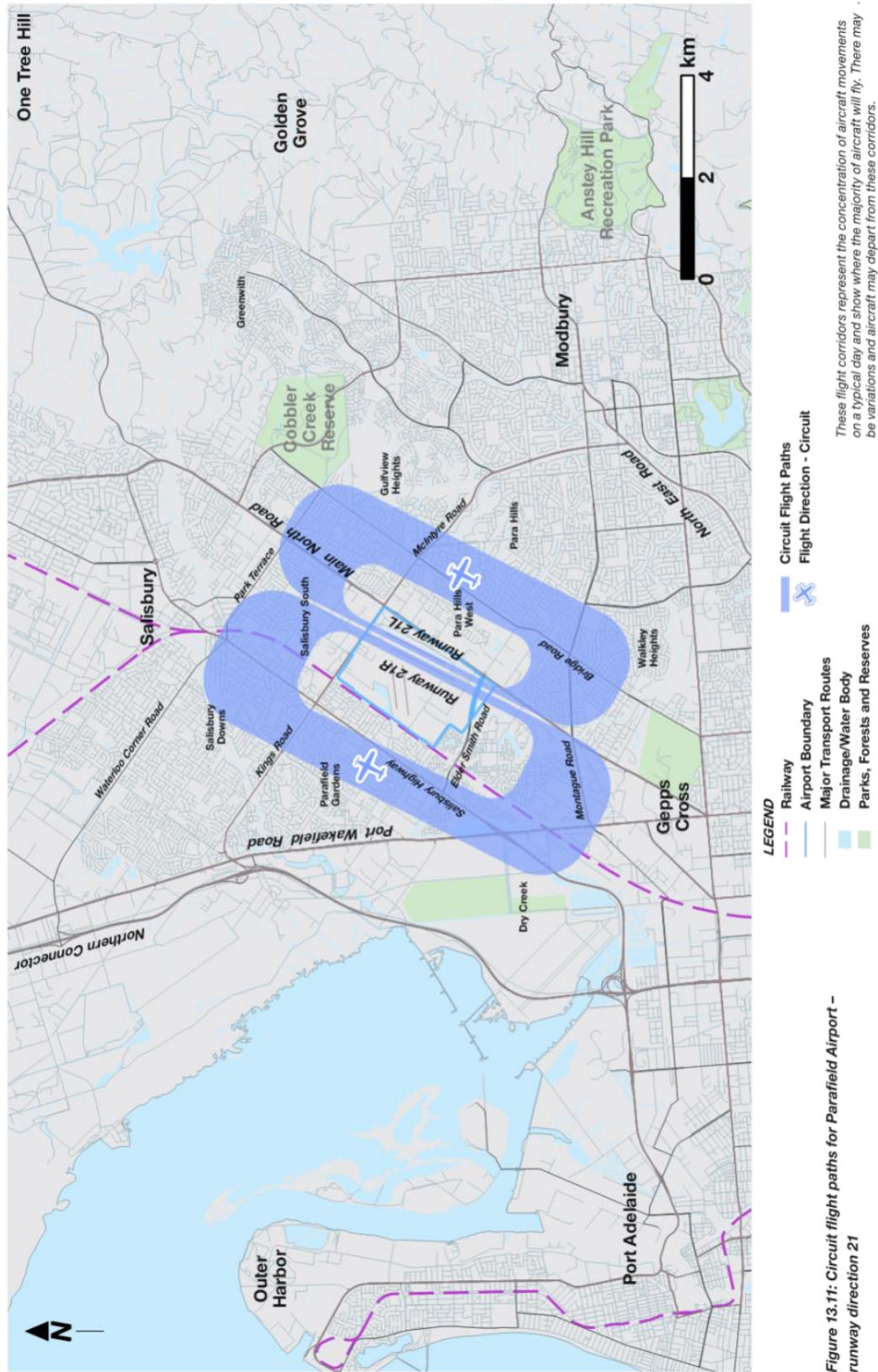
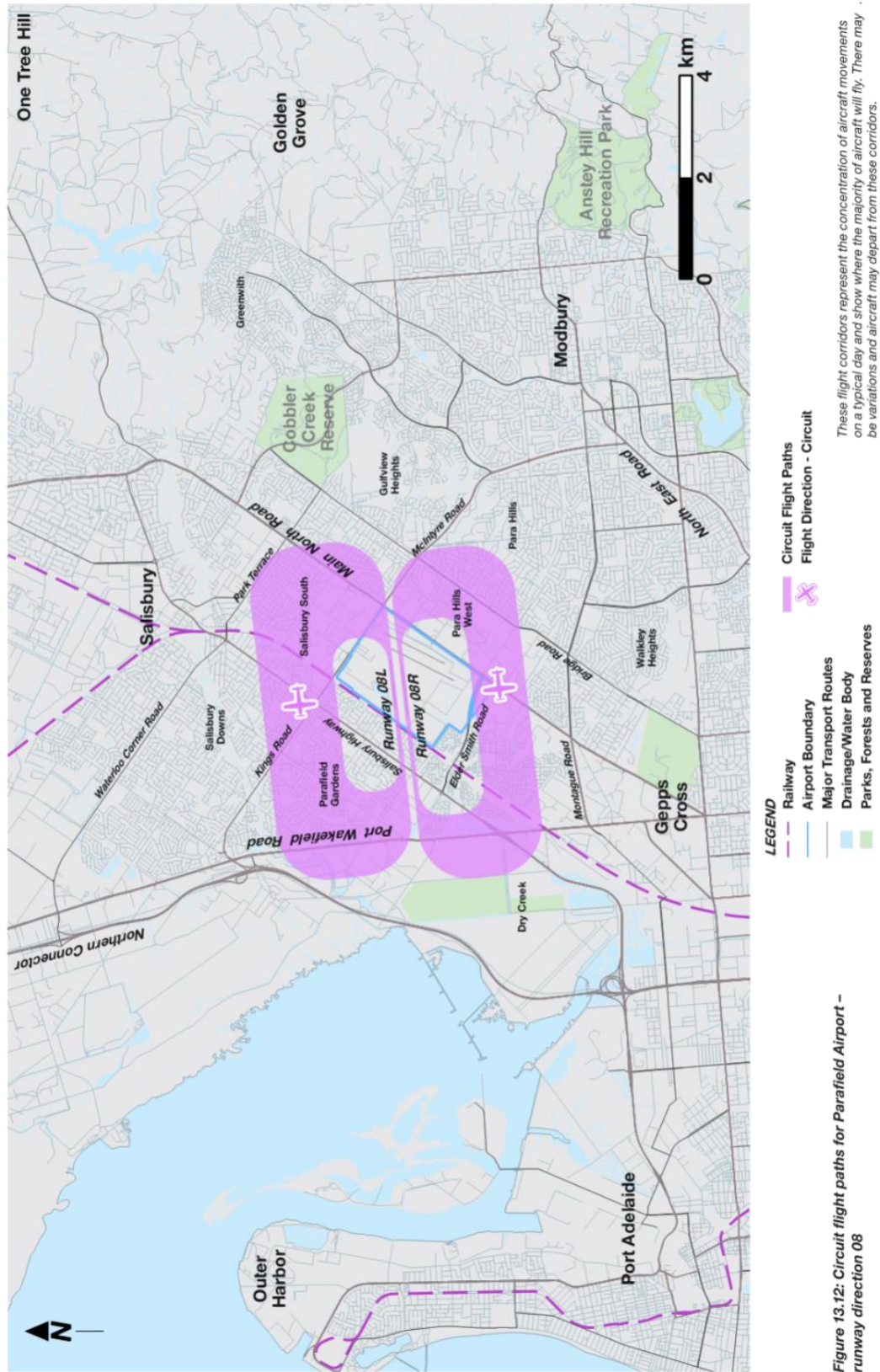


Figure 13.11: Circuit flight paths for Parafield Airport – runway direction 21



PRELIMINARY DRAFT MASTER PLAN 2024 181

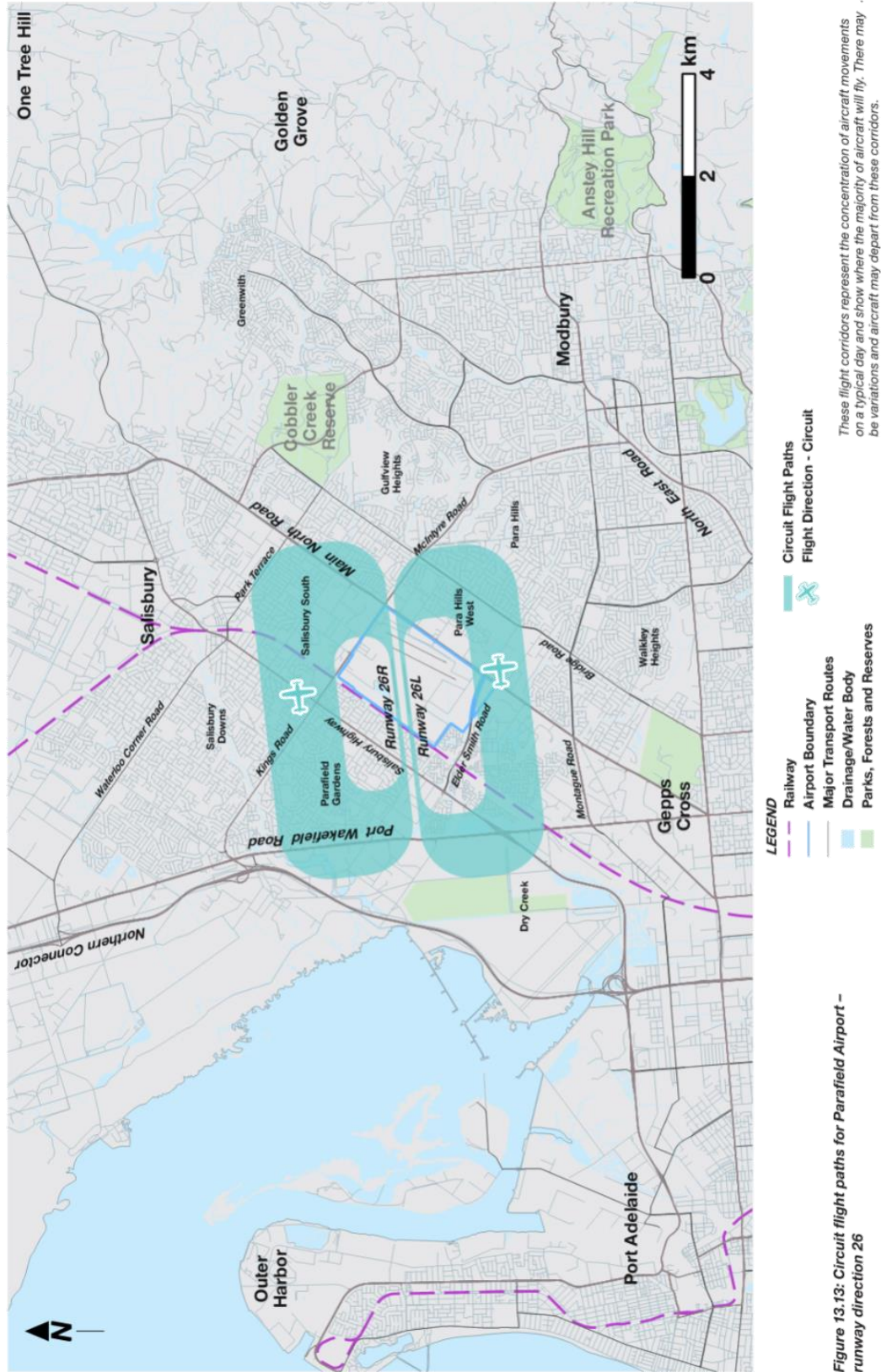


Figure 13.13: Circuit flight paths for Parafield Airport - runway direction 26

13.7 Noise Modelling Outputs

13.7.1 Australian Noise Exposure Index (ANEI)

The ANEI for 2022 is shown in Figure 13.15. This is based on the actual numbers and types of aircraft that operated at Parafield Airport in calendar year 2022.

13.7.2 Australian Noise Exposure Forecast (ANEF)

The ANEF has been modelled for the year 2043, which represents the 20-year planning period of this Master Plan. It is based on a scaling of the forecast numbers and types of aircraft used. This also includes known future aircraft types that are likely to fly into or out of Parafield.

The ANEF is used, in conjunction with Australian Standard 2021:2015 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction, by state and local governments for land-use planning purposes around airports, particularly in relation to development suitability and sound-insulation requirements.

The ANEF for 2043 is shown in Figure 13.16.



PRELIMINARY DRAFT MASTER PLAN 2024 183

13.7.3 Frequency-Based Noise Charts

The Commonwealth government has recognised the limitations of the ANEF system for communicating aircraft noise exposure to the community and has recommended additional metrics to describe current and future aircraft noise exposure.

A widely used metric is the Number-Above modelling. This displays the number of aircraft noise events greater than a specified decibel level that can be expected on an average day.. The typical noise levels considered are 60 and 70 decibels (dBA) as recommended by the National Airports Safeguarding Framework (NASF) Guideline A – Measures for Managing Impacts of Aircraft Noise. An outdoor noise level of 60 dBA is approximately 50 dBA indoors, with windows open to a normal extent, which is the approximate noise level that could cause sleep disturbance. An outdoor noise level of 70 dBA corresponds to a 60 dBA noise level indoors, which can disturb conversation or other indoor activities such as watching television.

Typical noise levels are shown in Figure 13.14. Two to three decibels is the minimum change in sound level that most people can audibly detect, while every 10 dBA increase in sound level is perceived as a doubling of loudness and every 10 dBA decrease is perceived as a halving of loudness

The NASF Guideline A (see Section 12.4) applies criteria for 100 average daily events above 60 dBA (referred to as N60=100) and 20 average daily events above 70 dBA (N70=20). These criteria have been adopted for this Master Plan 2024. These contours for 2022 are shown in Figure 13.17 and the forecast contours for 2043 are shown in Figure 13.18.

An outdoor noise level of 60 dBA is approximately 50 dBA indoors, with windows open to a normal extent, which is the approximate noise level that could cause sleep disturbance. An outdoor noise level of 70 dBA corresponds to a 60 dBA noise level indoors, which can disturb conversation or other indoor activities such as watching television.

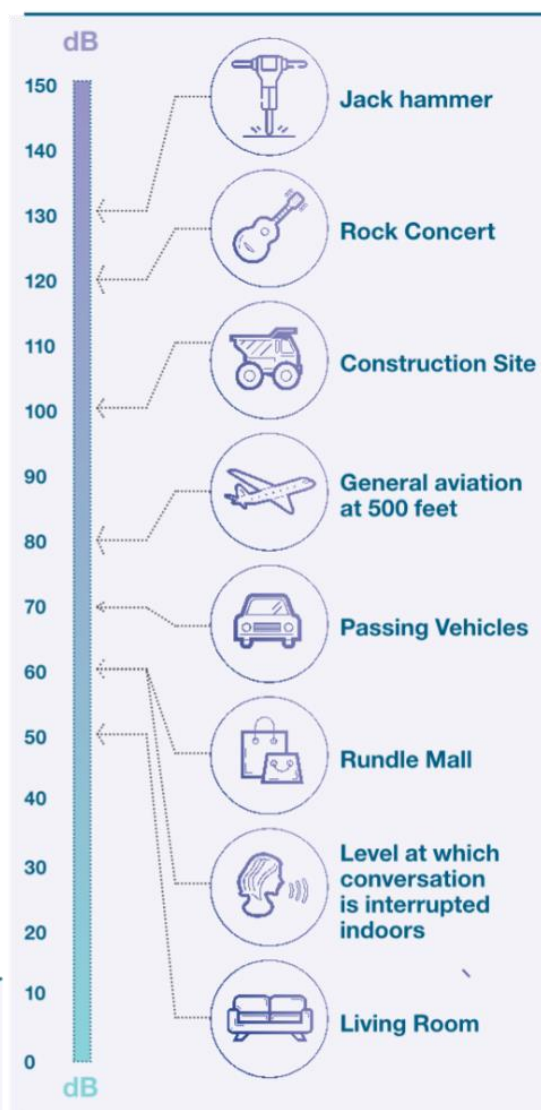


Figure 13.14: Example Noise Levels (in decibels)

13.7.4 Assessment of Changes to Noise Exposure

The ANEI chart shown in Figure 13.15 provides an estimate of the current position of the noise contours around the airport. These contours can be used as a baseline guide in the assessment of future proposed changes to the noise contours in the ANEF chart.

The location of the ANEF 20 contour for the 2043 ANEF is similar to the previous 2037 ANEF as well as the 2022 ANEI. In comparison to the 2037 ANEF, the 2043 ANEF has retracted slightly to the north and south and extended to the east and west.

These changes are attributed to updates to:

- requirement to use new noise modelling software (discussed in section 13.6.1)
- runway use allocation (discussed in section 13.6.5)
- aircraft types and number of movements of each aircraft type in line with updated forecasts
- future helipad location

The Airports Act considers the ANEF 30 contour and above to be significant ANEF levels.

There are no residential dwellings located within the 2043 ANEF 30 or 35 contours.

The ANEF 35 contour is within the airport site and the majority of the ANEF 30 contour is within the airport site. There are a range of buildings on the airport within these contours, including the general aviation hangars located along Anderson Drive, Parafield Airport Heritage Centre, District Outlet Centre, HomeCo (Officeworks, Supercheap Auto, Tradezone and Tool Kit Depot), Parafield Service Centre and the Rivergum Homes Display Village.

The ANEF 30 contour includes three small areas that fall outside of the airport site. The area to the north includes a section of Kings Road, vacant/undeveloped land, a mechanic workshop and a dog day care facility. The area to the east includes a portion of Main North Road and commercial facilities for a petrol station, storage units, automotive wreckers and parts suppliers, and equipment sales. The area to the south incorporates a section of Elder Smith Road and approximately one hectare of the Mawson Lakes Golf Course.

Section 13.5 describes the building site acceptability based on ANEF zones that is specified in Australian Standard AS 2021:2015. Commercial buildings are conditionally acceptable within 25 to 35 ANEF zones, light industrial is conditionally acceptable within 30 to 40 ANEF contours and other industrial uses are acceptable in all ANEF zones.

The Airports Act requires a master plan to include the plans, developed in consultation with aircraft operators and local government bodies in the vicinity of the airport, for managing aircraft noise exposure in areas forecast to be above the significant ANEF levels. Section 13.3 describes the noise management activities in place for Parafield Airport. PAL continues to work with all levels of government, aircraft operators and community to manage aircraft noise exposure, with particular focus on areas within the ANEF 30 and above contours.



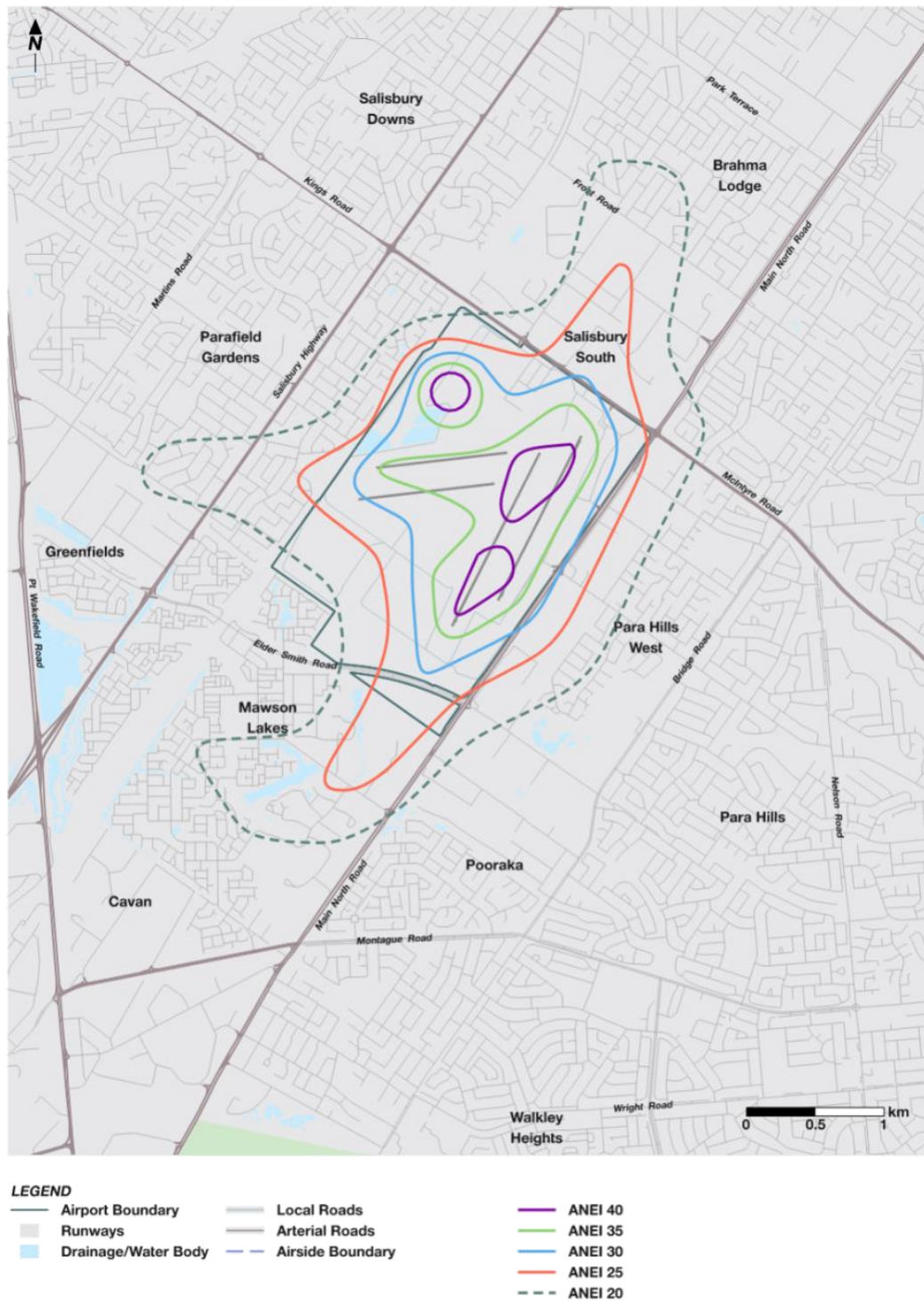


Figure 13.15: Australian Noise Exposure Index 2022

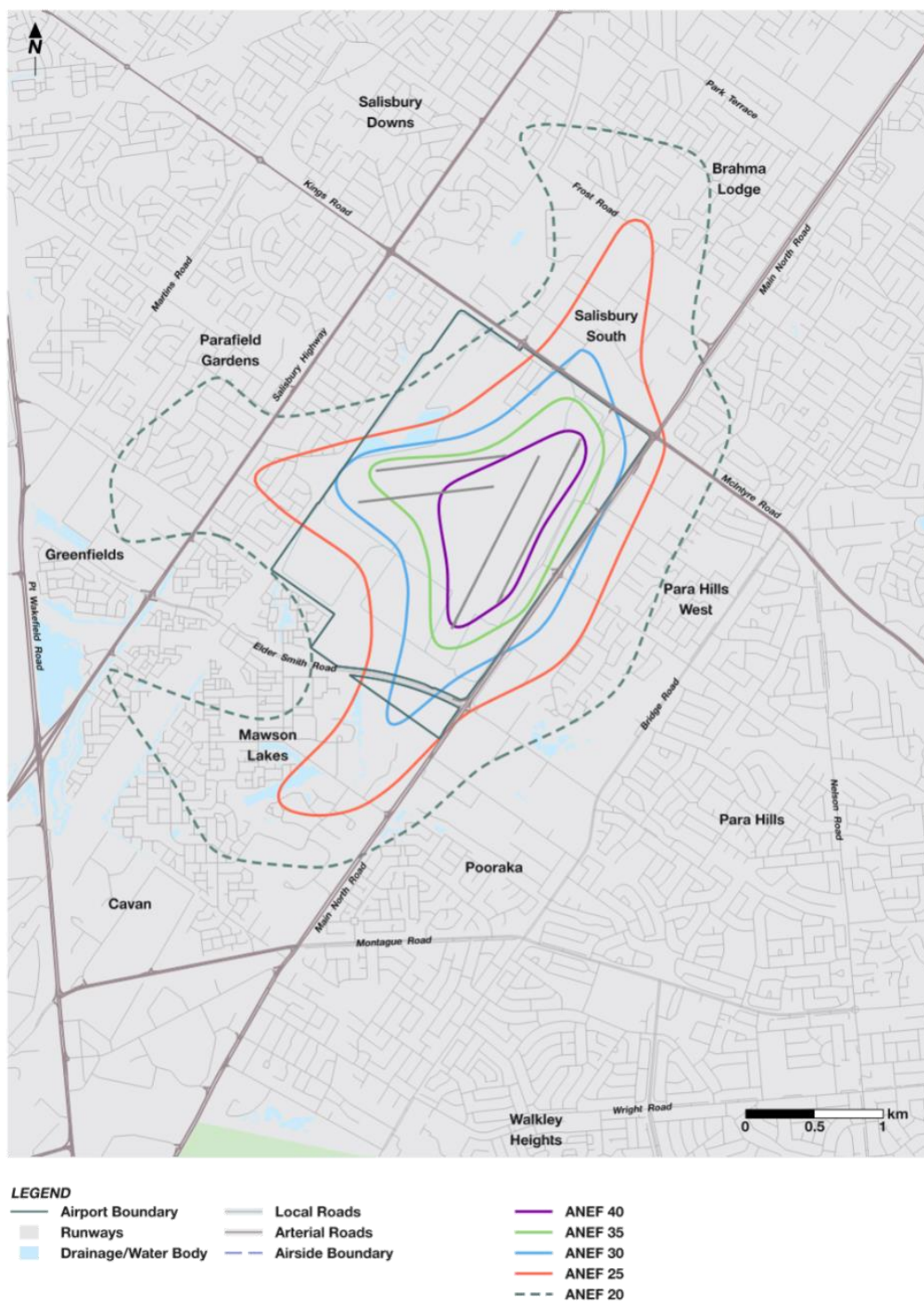


Figure 13.16: Australian Noise Exposure Forecast 2043



LEGEND

— Airport Boundary	— Runways	— N60=100
— Arterial Roads	— Local Roads	— N60=200
— Drainage/Water Body		— N70=100
— Parks, Forests and Reserves		

Figure 13.17: Parafield Airport Number-Above contours - 2022



Figure 13.18: Parafield Airport Number-Above contours – 2043 Forecast





14.1 Introduction

Parafield Airport Limited's (PAL) vision and ongoing success is founded and maintained through innovation and sustainable growth in aviation and non-aviation facilities. PAL integrates current and future environmental and social risks and opportunities through the implementation of a robust environmental management framework. This is critical in ensuring that the airport business thrives and is managed in a manner that can adapt and respond to changing demands.

PAL's philosophy is to operate and develop Parafield Airport in accordance with the principles of sustainable development, recognising that the success of the airport can be enhanced by conducting business in a way that is environmentally, socially and economically responsible. PAL's Environment Policy forms the foundation for this Environment Strategy. PAL is committed to ensuring legislative compliance and is driven forward by the desire to maintain a leadership position in environmental management.

This Environment Strategy covers ground-based environmental aspects associated with the operation of Parafield Airport, including:

- **Energy and climate change**
- **Water resources**
- **Stormwater and aquatic ecology**
- **Soil and groundwater**
- **Ground based noise**
- **Local air quality**
- **Waste management**
- **Land and heritage management.**

14.2 Overview

Central to PAL's environmental management is its Environmental Management System (EMS) which conforms to the requirements of International Standard ISO 14001:2015 and provides a structure for planning, implementing, monitoring, reporting and reviewing environmental management at Parafield Airport

- Sustainability is at the core of the way PAL does business. PAL's shareholders are actively tracking environment, social and governance factors through benchmarking standards and are correlating better financial performance with improved environment, social and governance performance
- PAL and its operators, tenants and contractors share responsibility for the environmental management of Parafield Airport
- PAL is committed to the effective management of environmental impacts across the Parafield Airport site. Environmental action plans are in place for energy and climate change, water resources, stormwater and aquatic ecology, soil and groundwater, ground-based noise, local air quality, waste management, and land and heritage management

14.3 Key Achievements

PAL has delivered a number of significant environmental achievements since Master Plan 2017 that include:

- In 2017 and 2018, Adelaide Airport Limited (AAL) achieved Asset Sector Leader status for Airports in the Global Real Estate Sustainability Benchmark (GRESB) Infrastructure Assessment. The GRESB Asset Sector Leaders Award recognises the outstanding leadership across the environment, social and governance elements of Adelaide and Parafield airports
- In 2017, Parafield Airport achieved Level 3 (Optimisation) accreditation through the global Airport Carbon Accreditation program in recognition of the airport's success in reducing carbon emissions
- In 2018, the Parafield Airport Heritage Centre was opened and houses historical accounts and memorabilia from South Australia's early aviation pioneers and Parafield Airport
- PAL purchased a full-electric plug-in Nissan Leaf vehicle in 2018 and installed two charging stations at the Airport Management Centre, including one for use by tenants and public visitors. The Nissan Leaf was replaced with a Mitsubishi petrol hybrid electric vehicle in 2022
- In 2018, AAL signed a \$50 million seven-year Sustainability Performance Linked Loan with ANZ – the first of its kind in Australia – on behalf of Adelaide and Parafield airports. The loan incentivises AAL to further improve its performance against a set of environmental, social and governance criteria
- Energy-saving improvements were completed for a number of PAL-owned buildings, including a heating, ventilation and air conditioning system upgrade, solar photovoltaic system installation, and LED upgrade
- In 2020, Parafield Airport became the first Australian airport to develop a Climate Adaption Plan
- PAL developed a range of new management plans and tenant guidelines, including Ozone Depleting Substances Guidelines, Energy Efficiency Guidelines, and an Air Quality and Noise Management Plan.

14.4 Sustainability

Sustainability is at the core of the way PAL does business and looks to develop into the future.

Through regular dialogue with stakeholders, PAL constantly improves its ability to anticipate and react to economic, social, environmental, and regulatory changes as they arise. PAL's shareholders are actively tracking environment, social and governance factors through benchmarking standards and are correlating better financial performance with better environment, social and governance performance.

PAL remains on a journey of embedding a common and consistent language of sustainability, and efficiently and effectively demonstrating its governance and performance credentials through benchmarking and reporting.

Further information about PAL's approach to sustainability is provided in Section 5.2.3 and on the Parafield Airport website, parafieldairport.com.au.

14.5 Environment Strategy Requirements

14.5.1 Legislative Requirements

PAL has developed the Environment Strategy in accordance with the *Airports Act 1996* (Airports Act) and the *Airports (Environmental Protection) Regulations 1997* (AEPR). The Airports Act establishes an environmental management regime that focuses on a cooperative approach, supporting and ensuring compliance with environmental standards at federally leased airports.

The AEPR outline the major obligations with respect to environmental matters on the airport site. These regulations do not apply to pollution and noise generated by aircraft (except engine ground running noise) which are regulated through the *Air Navigation (Aircraft Engine Emissions) Regulations 1995* and the *Air Navigation (Aircraft Noise) Regulations 1994*.

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) applies to actions that have a significant impact on the environment where the actions affect, or are taken on, Commonwealth land. The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places which are defined in the EPBC Act as matters of national environmental significance.

Various industry codes of practice, Australian Standards, Commonwealth and state environment protection measures, and other guidelines are applicable to Parafield Airport. Further relevant legislation and standards are listed within the environmental actions plans.

This Environment Strategy includes the following:

- Environmental management objectives for Parafield Airport
- Current environmental status of the airport, including areas of environmental significance
- Sources of environmental impact associated with airport operations
- An outline of the proposed environmental studies, reviews and monitoring of current and future activities, and a timeframe for these studies to be conducted and reported on
- Proposed measures to prevent, control or reduce environmental impacts associated with airport operations and the timeframe for their completion
- Details and outcomes of consultation on the preparation of the strategy with stakeholders.

In compliance with the AEPR, the Environment Strategy also covers:

- Sites identified to be of Aboriginal significance
- Proposed environmental management for areas of the airport which are not used, or planned to be used, for airport operations
- Necessary training for environment management by persons employed by PAL or other major airport employers, including detail on proposed training.

In addition to meeting regulatory obligations, the Environment Strategy sets the strategic direction for environmental management of airport operations for the next eight years. It also addresses sustainability where it relates to environmental aspects, including details of how PAL manages waste, energy, climate risk and water resources.

14.5.1.1 Environmentally Significant Areas

The Airports Act requires PAL, in consultation with state and federal conservation bodies, to identify areas on the airport site that are considered environmentally significant.

There are no threatened ecological communities or species listed under the *Environment Protection and Biodiversity Conservation Act 1999* that are present at Parafield Airport.

There are no sites of Aboriginal cultural heritage, historic and natural significance within Parafield Airport under ownership or control of PAL that are listed on the National Heritage List or Commonwealth Heritage List.

14.6 Environment Management Framework

Environmental management at Parafield Airport is guided by the Environmental Management Framework, as shown in Figure 14-1. This Framework incorporates strategic policy and planning documents, as well as measures to comply with Commonwealth regulatory requirements.

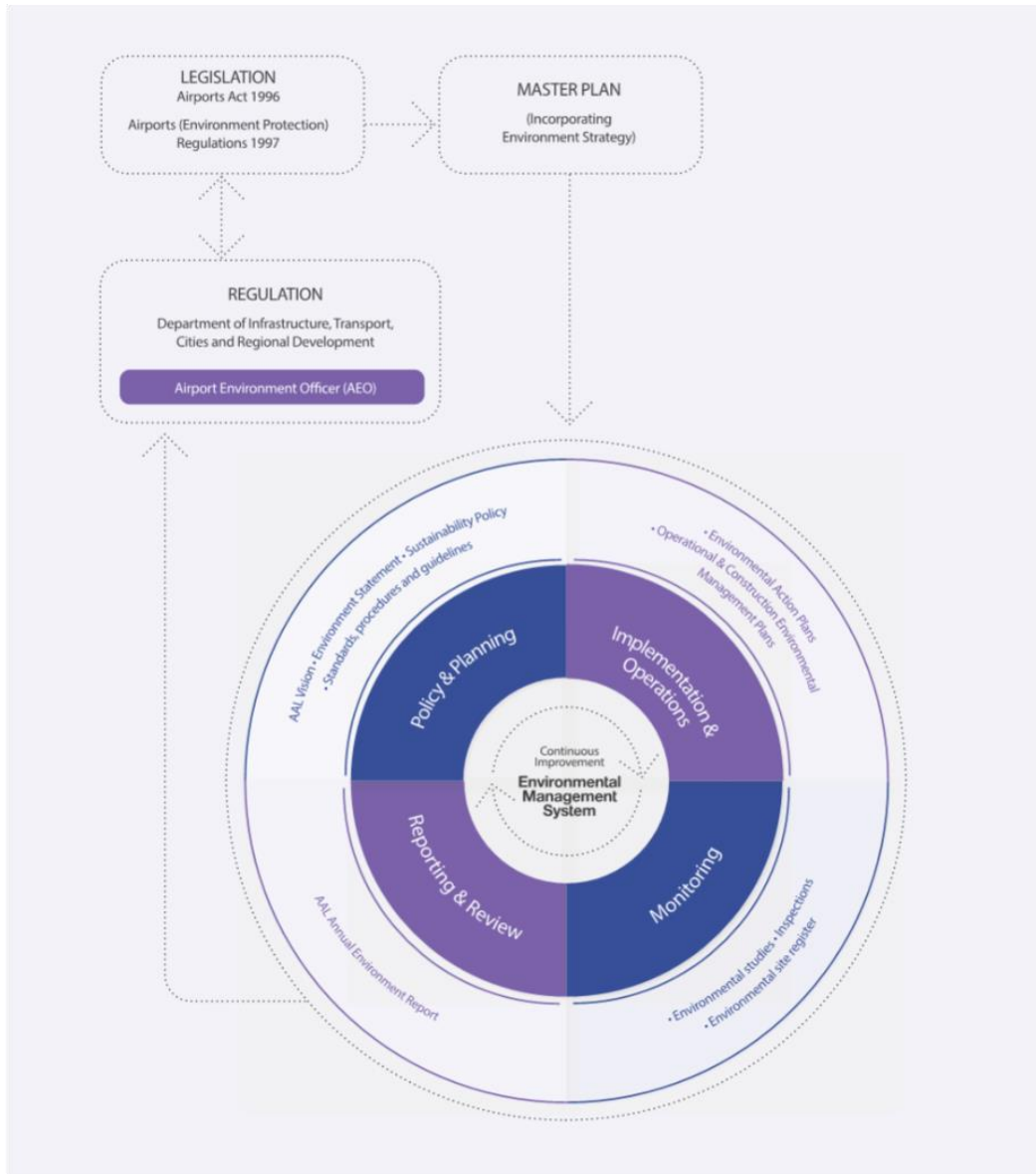


Figure 14.1: Parafield Airport Environmental Management Framework

14.6.1 Responsibilities

PAL and its operators, tenants and contractors share responsibility for the environmental management of Parafield Airport. Table 14-1 identifies the key environmental management responsibilities for the airport site.

Training and communication processes and systems have been established to ensure PAL's staff are aware of their environmental management roles and responsibilities.

PAL's environmental staff have relevant qualifications and have received training in environmental management system implementation and auditing.

PARTY	RESPONSIBILITIES
PAL Board of Directors	<p>The environmental performance of Parafield Airport</p> <p>Periodic review of the Environment Policy</p> <p>Allocation of resources to manage environmental issues</p>
PAL Executive	<p>Ensure that the roles/responsibilities for environmental management are defined and communicated</p> <p>Incorporate and manage regulatory and other environmental conditions within leases, other property contracts and construction contracts</p> <p>Ensure planned development aligns with the approved Master Plan</p>
PAL Environment Staff	<p>Ensure compliance with regulatory requirements</p> <p>Ensure the integration of environmental requirements into daily operations</p> <p>Implement the Environmental Management System</p> <p>Prepare the Annual Environment Report for DITRDCA</p> <p>Provide advice and specific training to staff, contractors and airport users</p> <p>Report and investigate environmental hazards, incidents and stakeholder feedback</p>
PAL Staff	<p>Comply with the PAL Environment Policy management plans and procedures</p> <p>Report environmental incidents and emergency events</p>
Airport tenants, aviation operators and major airport contractors	<p>Comply with applicable environmental legislation and PAL plans, procedures and guidelines</p> <p>Complete PAL induction</p> <p>Report environmental hazards, incidents and feedback to PAL</p> <p>Develop and implement operational and construction environment management plans when required</p>
Department of Infrastructure, Transport, Regional Development, Communications and the Arts	<p>Appoint an Airport Environment Officer to:</p> <ul style="list-style-type: none"> ensure management of the airport environment is in accordance with the Airports Act and associated regulations conduct site inspections, monitoring and reporting review and comment on development/building applications to ensure that the environment is appropriately managed

Table 14-1: Environmental management responsibilities

14.6.2 Sources of Environmental Impact

Parafield Airport is a dynamic environment, supporting a range of aviation and non-aviation activities that have the potential to impact on the environment. Table 14-2 identifies activities with potential for environmental impact at Parafield Airport.

AREA	ACTIVITIES
Aviation activities	Fuel storage and supply Aircraft operation Aircraft maintenance Aircraft painting Aircraft washing Aircraft decommissioning Engine ground running Air traffic control services Medical retrieval services Construction and fit out
Non-aviation commercial activities	Fuel storage and supply Commercial retailing Warehousing and logistics operations Recreational facilities Office facilities Vehicle wash facilities Petrol filling stations Construction and fit out
Airport management activities	Office operation and maintenance Road maintenance Runway, taxiway and apron maintenance Vehicle operation, maintenance and refuelling Vehicle washing Landscaping Sewer network maintenance Electricity network maintenance Water supply network maintenance Wildlife control Construction and fit-out Stormwater runoff management, maintenance and monitoring
Historic activities	Landfills Firefighting activities Fuel storage and supply Aircraft maintenance Herbicide / pesticide application Fill importation

Table 14-2: Activities with potential for environmental impact at Parafield Airport

14.6.3 Environmental Management System

The Environmental Management System (EMS) is central to PAL's Environmental Management Framework. The EMS conforms to the requirements of *International Standard ISO 14001:2015* and provides a structure for planning, implementing, monitoring reporting and reviewing environmental management at Parafield Airport.

The EMS comprises four key areas which ensure a continuous improvement approach to environmental performance:

- Policy and planning
- Implementation and operation
- Checking and monitoring
- Reporting and review.

14.6.3.1 Policy and Planning

PAL's commitment and approach to environment and sustainability are described in the Environment Policy.

The Environment Policy was endorsed by the PAL Managing Director in 2023 and identifies the key commitments for the protection and improvement of the environment. The commitments include ensuring compliance with relevant regulatory and best practice requirements and the Environment Strategy, implementing and maintaining an EMS to minimise environmental impacts, and employing a continuous improvement approach to environmental management and sustainability. The policy document is updated regularly to ensure relevancy to Parafield Airport.

14.6.3.2 Implementation and Operation

The implementation and operation of the EMS is achieved through a range of systems, procedures and guidelines, including business and strategic plans, building approval processes, risk assessments and training processes. The relevant documents, which are reviewed and updated regularly, are outlined in Table 14-3.

A range of guidelines have been developed by PAL, and published on the Parafield Airport website parafieldairport.com.au, to inform tenants and aviation operators of requirements for activities such as construction environmental management, spill response, trade waste management and water conservation.

PAL staff and users of the airport must take all reasonable steps to implement and comply with the Environment Strategy. PAL's environment team maintains the EMS, prepares management plans, and provides the necessary advice and guidance required for airport tenants and users to implement measures for controlling or minimising significant environmental risks. Key outputs include standard operating procedures, safe work instructions, environmental guidelines and training.

AREA	PRINCIPAL DOCUMENTS	SECONDARY DOCUMENTS
Ground based noise	Air Quality and Noise Management Plan Stakeholder Engagement Strategy and Action Plan	Noise Enquiry and Complaints Handling Procedure Noise Management Guidelines Policy for the Ground Running of Aircraft Engines at Parafield Airport
Local air quality	Air Quality and Noise Management Plan	Tenant Environmental Management Plan Construction Environmental Management Guideline Tenant and Construction Environmental Inspection Procedure Spray Painting Guideline Ozone Depleting Substances Guideline Fly Friendly Program
Stormwater	Stormwater Quality Management and Improvement Plan	Airport Drain Maintenance Guideline Aircraft and Vehicle Washing Guideline Airport Emergency Plan Dangerous Goods and Hazardous Substances Guideline Spill Response Guideline Spray Painting Guideline
Soil and groundwater	Contaminated Site Management Plan Contaminated Site Risk Register Groundwater Monitoring Strategy	Tenant Environmental Management Plan Tenant and Construction Environmental Inspection Procedure Waste Fill Importation and Soil Management Guideline Construction Environmental Management Guideline Environmental Site Assessment Guideline Landscaping Guideline Airport Emergency Plan Trade Waste Management Guideline Hazardous Chemicals and Dangerous Good Guideline Spill Response Guideline Fuel Management Guideline
Land and Heritage	Vernal Pools Management Plan* Heritage Management Strategy Community Engagement Framework	
Wildlife	Wildlife Hazard Management Strategy	Land Management Plan Wildlife Hazard Management Plan Landscaping Guideline

Table 14-3: Environmental management documentation

* Formerly titled *Vernal Pools Conservation Zone Management Plan*.

AREA	PRINCIPAL DOCUMENTS	SECONDARY DOCUMENTS
Energy and Climate Change	Energy Strategy	Energy Conservation Guideline
	Carbon Management Plan	Integration of Climate-related Risks and Opportunities Report
	Climate Change Adaptation Plan	
	Low Carbon Statement	
Water resources	Water Resources Plan	Landscaping Guideline
		Water Conservation Guideline
Waste	Waste Management Strategy	PAL Operational Waste Management Plan
		Tenant and Construction Waste Management Guideline
		PAL Tenancy Operational Waste Management Plans
		Dangerous Goods and Hazardous Chemicals Guideline
		Construction Environmental Management Guideline

Table 14-3: Environmental management documentation (continued)

14.6.3.3 Checking and Monitoring

A risk-based approach has been adopted for tenant monitoring and inspections, with an environmental risk ranking based on the potential of the tenant's business activities to cause environmental harm. Tenant inspections are undertaken on all high-risk sites to ensure compliance and ongoing protection of the environment is maintained.

All building activity applications are reviewed by PAL to determine whether a Construction Environmental Management Plan (CEMP) is required. Following the commencement of site works, PAL undertakes environmental inspections to ensure potential risks are being managed in the manner described in CEMPs.

PAL operates a broad environmental monitoring program that collects data across numerous areas, as listed in Table 14-4. Monitoring activities are detailed and scheduled within specific management plans, for example the Stormwater Quality Management and Improvement Plan. Persons or organisations that carry out environmental monitoring hold the appropriate professional qualifications relevant for the area of monitoring activity and demonstrate the processes and systems used to conform to relevant Commonwealth criteria and industry standards.

PAL maintains an Environmental Site Register for the airport. The register identifies the locations on-airport that have been a source of environmental impact and/or subject to environmental monitoring, assessment, inspection, incident investigation and/or environmental significance status. The features of each site, including its contamination status, are detailed in the register and the site location identified.

14.6.3.4 Auditing

A robust EMS requires regular checking. PAL achieves this through regular internal auditing of select system components in accordance with the Internal Environmental Management System Audit Procedure. A detailed external audit by an accredited ISO 14001 auditor of the full EMS is scheduled every three years. Audit results are reported to the DITRDCA and provide assurance as to the quality and rigour of PAL's environment program.

14.6.3.5 Reporting and Review

Reporting against all goals and management actions in the Environment Strategy is provided regularly to PAL's Executive Committee. Management review of the EMS is a requirement of ISO14001 and is undertaken in accordance with PAL's Management System Review Procedure.

PAL reports pollution incidents, environment-related complaints, any exceedances of regulatory criteria, and management of contaminated sites to the DITRDCA Airport Environment Officer through monthly meetings and as required under legislation.

A comprehensive report demonstrating PAL's progress against all Environment Strategy goals, management actions and monitoring activities is also provided annually to the DITRDCA.

PAL continues to engage and communicate environmental information with the City of Salisbury and surrounding community and key stakeholders through various forums including the Parafield Airport Consultative Committee, tenant forums, publications and the Parafield Airport website.

STREAM	AREA	MONITORING ACTIVITY	FREQUENCY
Compliance	Ground based noise	Boundary noise	As required (see Ground Noise Environmental Action Plan)
		Construction noise	As required
	Local air quality	Air quality	As required
		National Pollutant Inventory	As required
	Stormwater	Stormwater quality (Tier 1)	Bi-monthly and as required
		Stormwater quality (Tier 2)	As required
	Soil and groundwater	Soil and groundwater contamination (existing sites)	Annually and as required
		Soil and groundwater contamination (new sites)	Annually
		Background groundwater quality	
Sustainability	Carbon Emissions	Carbon footprint (Scope 1 & 2)	Annually
	Energy	Energy consumption (PAL buildings)	Annually
	Water resources	Water consumption (PAL buildings)	Annually
	Waste	Waste volumes (PAL buildings)	Quarterly
	Land and heritage	Flora/fauna surveys	As required
	Land and heritage	Aboriginal artefact surveys	As required
		Built heritage surveys	As required

Table 14-4: Summary of key environmental monitoring activities

14.7. Environmental Action Plans

The Environment Strategy covers ground-based environmental aspects associated with the operation of Parafield Airport, including:

- Energy and climate change
- Water resources
- Stormwater and aquatic ecology
- Soil and groundwater
- Ground based noise
- Local air quality
- Waste management
- Land and heritage management.

The management of these specific environmental aspects are outlined in environmental action plans, and each plan is supported by management plans and guidelines. Current management practices will evolve or change over time in response to:

- Changes in the relevant legislation
- Best practice, especially improvements in technology and knowledge
- Understanding of the airport and surrounding environment.

The environmental action plans guide environmental initiatives at the airport for the next eight years. They are reviewed regularly to ensure PAL stays at the forefront of sound environmental management and best practice sustainable business operations.

Table 14-5 and Table 14-6 provide an outline of the structure and content for each of the action plans and clarity on the timeframes for achieving the management actions identified.

DESCRIPTION	TIMEFRAME
Short-term	1 – 3 years
Medium-term	3 – 5 years
Long-term	5 – 8 years
Ongoing	Determined through regular review
As required	Determined on an as-needs basis

Table 14-5 Timeframes for management actions

Objectives	Objectives for the long-term operation and development of Parafield Airport which align with the overarching vision in PAL's Environment Policy. The objectives set the strategic direction for the environmental management and performance of the airport.
Background	Overview of the relevant action plan aspect, how it applies to the airport, summary of general background information and existing sources of impact, and recent achievements.
Current Management	This section describes the management practices currently implemented to address identified sources of environmental impact.
Action Plan	<p>Specific strategic level management actions and initiatives that PAL intends to carry out to achieve the relevant key objectives during the eight-year period.</p> <p>These measures and actions aim to build on the achievements made under the previous environment strategies, thereby striving towards continual improvement of the airport's environmental performance. Actions proposed within this strategy include:</p> <ul style="list-style-type: none"> • New actions developed due to recent studies and plans • New actions required to address potential environmental issues associated with implementation of the Master Plan • Ongoing actions that remain relevant <p>Each action has a defined priority and timeframe for implementation, established having regard to its risk, status of current management and the variability of resources.</p>

Table 14-6 Environmental action plan framework

14.8 Energy and Climate Change

Objectives

- Support the aviation industry in its energy transition
- Measure and manage energy use, seeking opportunities to source cleaner and cost-effective, resilient alternatives
- Understand and mitigate physical and transitional climate risks, through active management of the airport's asset base

- PAL upgraded the heating, ventilation and air conditioning system at the Parafield Management Centre in 2017.
- In 2018, an LED upgrade was completed at the Airport Management Centre and PAL Workshop.
- A 23kW solar photovoltaic system was installed at the PAL Workshop and a 11kW system installed at Elsie's Café (PAL-owned building) in 2019.
- In 2020, Parafield Airport became the first Australian airport to develop a Climate Adaptation Plan.

14.8.1 Background

PAL seeks to provide energy that is affordable, reliable and environmentally sustainable. Given that energy accounts for over 90 per cent of the airport's carbon footprint, energy will play a key role in future-proofing growth.

PAL recognises that climate change and carbon-risk management are an essential aspect of operating a sustainable business over the long term. PAL is committed to employing the principles of resource efficiency in its operations, planning and ongoing infrastructure development, and in the procurement of goods and services.

According to the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the climate in South Australia is predicted to be warmer and drier with changes to seasonal rainfall patterns and greater frequency of drought. The potential operational and economic impacts from climate change include decreased water supply, increased utility prices, infrastructure deterioration and habitat stress.

Recent Achievements

- In 2017, Parafield Airport achieved Level 3 (Optimisation) accreditation under the independently assessed global Airport Carbon Accreditation program in recognition of the airport's success in reducing carbon emissions.
- PAL purchased a full-electric plug-in Nissan Leaf vehicle in 2018 and installed two charging stations at the Airport Management Centre, including one for use by tenants and public visitors. The Nissan Leaf was replaced with a Mitsubishi petrol hybrid electric vehicle in 2022. PAL staff complete around 5,000 km per year using the electric vehicle.
- Energy Efficiency Guidelines were developed in 2020 to provide guidance to airport tenants on techniques for measuring emissions and reducing energy consumption, including installation of solar PV systems and LED lighting.

14.8.2 Current Management

14.8.2.1 Energy

Parafield Airport is a relatively modest consumer of energy resources. Electricity use in buildings is predominantly for heating, cooling and lighting. Only a small percentage of buildings on airport are owned and occupied by PAL and the remainder are either leased or owned and occupied by tenants.

PAL recognises the importance of being a leader in the energy transition within the aviation industry and the need to adapt to meet changing demands. PAL is committed to employing the principles of resource efficiency in its operations, planning and ongoing infrastructure development and in the procurement of goods and services.

Decarbonisation of the aviation sector requires a variety of technological solutions, including the introduction of electric powered light aircraft as reliability, range and cost barriers are overcome. Climate change has, and will continue to be, felt across South Australia and decarbonisation of fossil fuel-based industries is key to reducing the impact of climate change.

PAL has developed an Energy Strategy to provide high level strategic direction to its energy management activities. PAL identifies, assesses and implements energy related opportunities including procurement, generation, storage, efficiency and optimisation projects in line with the Energy Strategy.

PAL engages with tenants on its Energy Efficiency Guidelines to support installation of solar systems and LED lighting, and provides assistance with activities such as energy audits, awareness and implementation of equipment. Solar photovoltaic systems have been installed across a number of hangars and buildings across the airport site, including the PAL Workshop.

14.8.2.2 Climate Change

The SA Government has projected that climate change impacts will increase into the next decade, with higher maximum temperatures, less rainfall and more dangerous fire weather. In conjunction with AAL, PAL has undertaken a climate risk review and has an understanding of both the physical and transition risks of a changing climate as well as the transition to a low carbon economy. PAL is responding to climate change as a business risk through:

- Mitigation: lessening the impact through low carbon policies and carbon reduction activities
- Adaptation: planning and action in response to projected changes in climatic conditions and weather events resulting from climate change (i.e. making modifications to adjust to a changing situation).

Mitigation, in the form of carbon reduction, has been ongoing since 2013 when Parafield and Adelaide airports were the first airports in Australasia to receive Level 1 accreditation under the independently assessed global Airport Carbon Accreditation program run by Airports Council International.

In 2015, Parafield Airport became the first general aviation airport to achieve Level 2 (Reduction) accreditation, and in 2017 achieved Level 3 (Optimisation) accreditation in recognition of the airport's success in reducing carbon emissions.

Parafield Airport was the first Australian airport to develop a Climate Adaptation Plan, in consultation with staff and stakeholders, and has participated in regional adaptation planning with government and community. The Climate Change Adaptation Plan was approved by the PAL Board of Directors in 2020 and considers the risks and opportunities associated with future modelled seasonal temperatures, flooding, storms and drought. The Plan identifies appropriate adaptation pathways for airport infrastructure, buildings, services and other key components of airport operations. Climate modelling for Parafield is regularly reviewed and the Climate Change Adaptation Plan updated in response to these and other internal and external factors.

14.8.3 8 Year Action Plan

The Energy and Climate Change Action Plan over the eight-year period is detailed in Table 14-7.

ENERGY AND CLIMATE CHANGE MANAGEMENT ACTION/INITIATIVE	TIMEFRAME
Annual measurement of the company carbon footprint	Ongoing
Continue certification to Level 3 of ACI's Airport Carbon Accreditation scheme or similar	Ongoing
Develop a decarbonisation strategy and implementation plan	Short-term
Implement decarbonisation strategy and implementation plan	Medium-term
Investigate possible locations for future renewable energy installations	Medium-term
Assess the economic feasibility of a large-scale renewable generation to supply individual tenants and potentially back to the grid	Medium-term
Adopt minimum energy efficiency standards for plant and equipment, including motor vehicles, in the company purchasing policy	Medium-term
Implement the Stakeholder Engagement Plan actions related to carbon management	Medium-term
Investigate implementation of smart electrical metering for PAL and tenant buildings to better utilise efficient tariff periods	Medium-term
Continue to investigate the technology and infrastructure required to support the move to electric light aircraft technology	Long-term
Continue to update and review the climate change risk assessment and adaption measures	Long-term

Table 14-7 Energy and Climate Change 8-Year Action Plan

14.9 Water Resources

Objectives

- **Smart use of water, improve efficiency and maximise opportunities for use of non-potable water**

Recent Achievements

- Water sensitive urban design features have been incorporated in recent developments, such as increased use of air cooled heat pumps to reduce reliance on potable water.

14.9.2 Current Management

Parafield Airport continues to shift from water conservation to smart water use, in preparation for potentially dryer times ahead.

Stormwater harvested by the City of Salisbury from local drains and treated in a series of wetlands on Parafield Airport has been a supplementary source of non-potable water to off- and on- airport facilities and residential areas for several years. Recycled water from the City's stormwater harvesting scheme has been used to irrigate the community sporting grounds at Parafield Airport since 2013.

Water Conservation Guidelines and Landscape Guidelines have been developed for tenants and opportunities for the capture of water are identified by PAL through the Building Activity approval process. Features include rainwater tanks, stormwater harvesting schemes and drought-tolerant landscaping. All proposed landscaping is also reviewed and assessed against the Landscape Guidelines to ensure the planned activities are designed to promote water conservation.

The water meter network is monitored for effectiveness and maintained as required.

14.9.1 Background

Parafield Airport's operation and future growth is dependent upon the ongoing security of water supply. While the airport may not be experiencing any immediate water supply concerns, there is evidence to suggest that water supply issues may return in the future like that experienced during the millennium drought. The key risks relate to water availability, access and cost. There is an opportunity to employ the smart use of water, including recycled water through water sensitive urban design and urban greening to both mitigate and adapt to climate change.

PAL is committed, where feasible, to expanding the use of available non-potable water supplies for new and existing developments as per PAL's Water Resources Plan. Developments with a large roof area, such as warehouses and hangars, provide opportunities for rainwater capture and reuse to supplement recycled water supplies from existing networks.

14.9.3 8 Year Action Plan

The Water Resources Management Action Plan over the eight-year period is detailed in Table 14-8.

WATER RESOURCES MANAGEMENT ACTION/INITIATIVE	TIMEFRAME
Seek opportunities for implementing water sensitive urban design principles	Ongoing
Update the water meter network to include smart metering and improve data accuracy, where required	Ongoing
Assess opportunities for introducing more water efficient management of infrastructure, and assess end-of-life replacement options as outlined in the Water Resources Plan	Ongoing
Investigate and implement water reduction opportunities and implement those that are financially viable to do so	Ongoing
Assess feasibility assessment of key opportunities for expanding the recycled water network to include new developments	Short-term
Review availability of recycled water for non-potable applications across new developments	Short-term
Undertake updated flood modelling for Parafield Airport	Short-term
Update the Design Guidelines to incorporate water sensitive sustainable design initiatives	Short-term
Undertake a water use study to understand where and how water is being used across the airport (for example, firefighting aircraft operations)	Medium-term

Table 14-8 Water Resources 8-Year Action Plan

14.10 Stormwater and Aquatic Ecology

Objectives

- **Maintain and, where feasible, improve stormwater quality and aquatic ecosystems.**

14.10.1 Background

Parafield Airport lies at the downstream end of several regional water catchments. The Main North Road Diversion Drain on the airport, managed by the City of Salisbury, collects flows from the urban catchment to the east of Main North Road and the Commercial Precinct.

Abutting the southern airport boundary, the Bennett Road Drain, which is also under management by the City of Salisbury, collects marginal surface water from the southern section of the airport and predominantly from upstream areas including Main North Road. The Airport West Drain abutting the railway reserve and the airport directs flow from the airport and upstream catchments including the suburb of Salisbury South and acts as a supply for the established City of Salisbury stormwater harvesting project. Stormwater from these catchments is released to Gulf St. Vincent via Dry Creek, downstream of the airport.

Recent Achievements

- Replacement and upgrades to flow proportionate composite sampling equipment located at Parafield Airport was completed in 2023.
- PAL updated its tenant risk assessment process and register in 2018 to include more detailed consideration of stormwater pollution sources and risk.

14.10.2 Current Management

PAL is committed to improving stormwater quality and consequently the ecological health of the airport's waterways, as detailed in the PAL Stormwater Quality Management and Improvement Plan. Implementation of this plan allows control of pollutant loads from activities on the airport.

Sources of stormwater pollution at Parafield Airport are similar to those in urban catchments, namely vehicles, roads, debris from vegetation, sediment, general commercial activities and hazardous substances storages. To mitigate these impacts PAL requires interceptors be installed at the discharge point for all new developments with the potential to generate pollutant loads.

High-risk tenants are also regularly inspected to check compliance of hazardous substances storages and other potentially polluting activities. Spill response and clean up in accordance with the Airport Emergency Plan is intended to minimise environmental impacts from fuel incidents. Tenants are inspected for conformance to PAL's Aircraft Washing Guidelines.

Measures to address stormwater management are required to be included in CEMPs. PAL undertakes regular site inspections to ensure that construction activities are complying with the CEMP.

A two-tier structure is applied to stormwater monitoring and is detailed in the Stormwater Quality Management and Improvement Plan. Tier 1 sampling involves the collection of flow proportionate composite samples from April through October at the airport's primary stormwater discharge point. One summer event between November and March is also captured annually, subject to rainfall. Tier 2 sampling is triggered when the criteria are exceeded, with the aim of identifying the pollution source(s). Results are currently compared against Commonwealth and South Australian water quality criteria.

PAL is working to establish site-specific water quality trigger levels to assess potential impacts to the aquatic environment. The development of site-specific trigger levels will also provide a baseline to measure the effectiveness of pollution control and stormwater management measures. The South Australian Environment Protection Authority (EPA) Environment Protection (Water Quality) Policy 2015 references the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000; now ANZG 2018), which provides scope for the development of site-specific water quality trigger levels.

14.10.3 8 Year Action Plan

The Stormwater and Aquatic Ecology Action Plan over the eight-year is detailed in Table 14-9.

STORMWATER AND AQUATIC MANAGEMENT ACTION/INITIATIVE	TIMEFRAME
Continue to regularly monitor stormwater quality	Ongoing
Continue to identify sources of pollution as per the Stormwater Quality Management and Improvement Plan and mitigate sources of pollution that have originated from airport operations	Ongoing
Continue to monitor the effects of climate change on stormwater runoff and performance of drainage systems	Ongoing
Provide guidance to stakeholders on stormwater quality improvement strategies	Ongoing
Complete risk assessment regarding pollutant potential to receiving waters and develop mitigation measures	Short-term
Develop site specific water quality criteria in accordance with Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018)	Short-term
Update Stormwater Quality Management and Improvement Plan to consider sediment management and ecological assessment and modelling of water sensitive urban design features	Medium-term
Investigate potential sources of pollution based on stormwater quality data reviews	Ongoing
Incorporate stormwater quality and water sensitive urban design principles into the Design Guidelines	Medium-term
Assess capacity of current infrastructure to respond to major stormwater pollution events	Medium-term

Table 14-9 Stormwater and Aquatic Ecology 8-Year Action Plan

14.11 Soil and Groundwater

Objectives

- **Maintain and, where feasible, improve soil and groundwater quality.**

14.11.1 Background

Soil across the Parafield Airport site is generally consistent and comprise of a mixture of sandy and silty clays of the Pooraka Formation. Fill material in the upper soil profile varies significantly, having been deposited over various portions of the site over several decades, from various sources and for various purposes. Groundwater in the upper-most aquifer beneath the airport ranges in depth from 3.9 m above the Australian Height Datum (AHD) at the south-west corner of the Enterprise Precinct, to 12.5 m AHD along the northern boundary of the airport. Groundwater quality is typically saline to brackish and flows in a westerly and south-westerly direction, (however, localised flow direction may vary in some areas).

Most activities at Parafield Airport occur on impervious, paved surfaces which greatly limits the potential for contamination to impact soil and underlying groundwaters.

Recent Achievements

- PAL replaced its site contamination consultancy panel with a series of pre-approved consultancies that can be engaged based on experience in specific investigation methodologies or that have familiarity in certain areas of the airport, thus improving environmental outcomes.
- Environmental assessments were completed for all sites prior to development, including broadscale site contamination assessment across the airport.
- The Tenant Environmental Management Guidelines, which includes tenant responsibilities relating to soil and groundwater contamination, was distributed to all airport tenants in 2019.

14.11.2 Current Management

PAL has a Contaminated Site Management Plan (CSMP) and Contaminated Site Risk Register (CSRR) that have been developed in line with the National Environment Protection (Assessment of Site) Measure 1999 and are used to assess and prioritise potential risks associated with contaminated sites and sites where a high risk of contamination exists. Management strategies are assigned in the CSRR based on the level and type of contamination risk.

Regular groundwater monitoring is one of the strategies used to manage contamination risks. The Groundwater Monitoring Strategy establishes the requirements for regular groundwater monitoring activities, with contaminant trigger levels based on AEPR acceptance limits, background concentrations and the purpose of monitoring (for example, leak detection).

Preventing contamination is an ongoing priority, and all practicable measures are undertaken to minimise the risks of contamination occurring.

Environmental site assessments are undertaken in accordance with the AEPR to determine the existence of soil and/or groundwater pollution. PAL may also require assessments to be undertaken as part of due diligence prior to the commencement of proposed developments. An Environmental Site Assessment Guideline has been developed to provide information about the assessment requirements to tenants and contractors.

Potential contamination risks associated with construction activities are managed via the Building Activity application process, principally through reviews of CEMPs. Following the commencement of site works, PAL undertakes construction environmental inspections to ensure potential risks are being managed in the manner described in CEMPs.

Operational activities undertaken by PAL and its contractors are managed in accordance with relevant procedures and plans, which include controls to minimise the risk of contamination. Where high-risk site activities (e.g. underground fuel storage) exist, the potential contamination risks are managed in accordance with the CSMP and CSRR.

Hazardous chemicals and waste stored and used by PAL are included in the hazardous substances register and Polychlorinated Biphenyls register and managed in accordance with PAL workplace health and safety policies and procedures. These procedures include regular audits of chemical/waste storage and spill response equipment. Consistent with the Tenant Environmental Management Plan, PAL ensures appropriate management of the hazardous chemicals and wastes stored and used by tenants via regular tenant inspections. PAL also provides a range of guidelines to tenants that provide advice on the appropriate storage and use of hazardous chemicals and waste.

Where contamination does occur or where historical contamination exists, the potential ecological and human health risks are managed in accordance with the CSMP and CSRR. The overall process is shown in Figure 14-2.

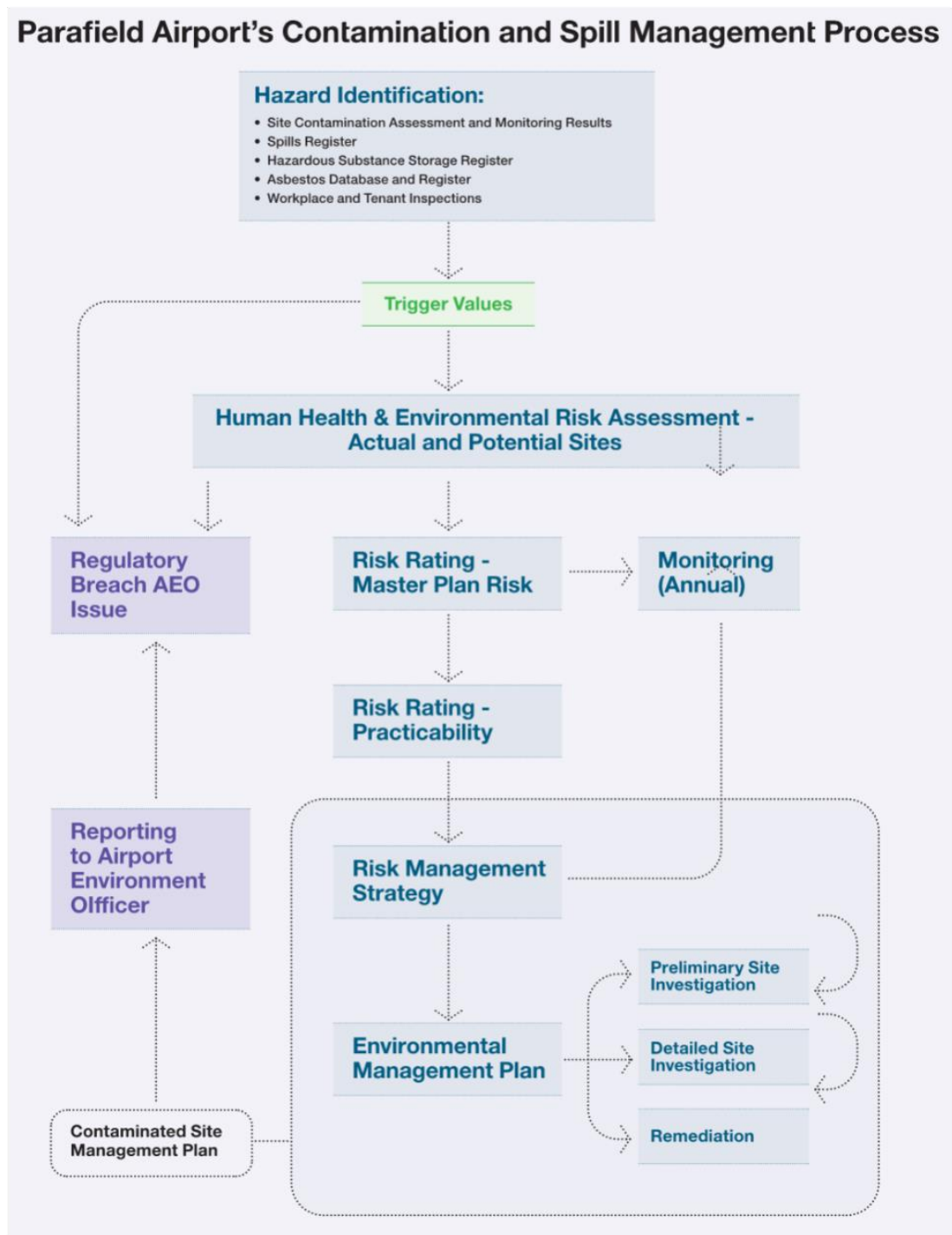


Figure 14.2: Parafield Airport's contamination and spill management process

In addition to consideration of human health and ecological risks, the CSMP and CSRR consider Master Plan priorities and practicability in assigning risk rankings.

The interaction between the various principal strategy and management documents is illustrated in Figure 14-3.

14.11.2.1 Per- and Poly- Fluoroalkyl Substances (PFAS)

Per- and poly- fluoroalkyl substances (PFAS) are manufactured chemicals that are used to make products resistant to heat, stains, grease and water. These substances were present in firefighting foams used at Parafield Airport from the early 1970s until 1986, when there ceased to be an active firefighting service based at the airport.

PAL took over operation of Parafield Airport in 1998 through a leasehold arrangement with the Commonwealth. While PAL has never been responsible for firefighting services, it is pro-actively managing and coordinating the response to PFAS-related investigations based on guidance from federal and state regulators, including the South Australian Environment Protection Agency (EPA). Regulators provide this guidance via a PFAS Project Control Group (PCG), which has been established to provide a forum for detailed review of PFAS investigations at Parafield Airport. The Parafield PFAS PCG consists of representatives from PAL, the DITRDCA, EPA, Airservices Australia, SA Health, SA Water and the City of Salisbury.

In 2016, PAL commenced a preliminary site investigation for PFAS contamination to better understand potential impacts from the historic use of firefighting foams by former Commonwealth agencies. A detailed investigation was subsequently undertaken and found historic PFAS contamination on airport in isolated monitoring wells set up on the southern and western boundary of Parafield Airport. These results were in line with the historic use of firefighting foams containing PFAS at training grounds, located to the south and west of Parafield Airport's runways and taxiways. These findings led to PAL initiating targeted water quality sampling in 2019 for public land off-airport and a survey of water use of properties in Mawson Lakes and Parafield Gardens.

PFAS was detected in groundwater to the west, off-airport, in Parafield Gardens. PFAS was below the drinking water guideline value in the Mawson Lakes survey area. Copies of the investigation reports and fact sheets for the community are published on the Parafield Airport website, parafieldairport.com.au/environment.

In 2021, the Commonwealth government commenced its PFAS Investigation Program to identify the nature and extent of PFAS contamination at airports where former Commonwealth agencies previously provided firefighting services, including Parafield Airport. The program is being administered by the DITRDCA and is expected to run for six years. The program aims to ensure appropriate management plans are in place to manage any identified risks.

The assessment and management of PFAS contamination on the airport site is undertaken in accordance with the Guideline for Environmental Management, issued by the DITRDCA, which directs airport-lessee companies to use the published PFAS National Environmental Management Plan (PFAS NEMP) which provides nationally agreed guidance on the management of PFAS contamination. PAL manages PFAS contamination, and directs its tenants to manage PFAS contamination, in a manner consistent with the PFAS NEMP, with the following qualifications:

- PFAS contaminated material reuse and landfill disposal will be based on guidance and regulation provided by the EPA
- Precursor analysis will only be used as required to provide additional data for the purpose of assessing potential risks.

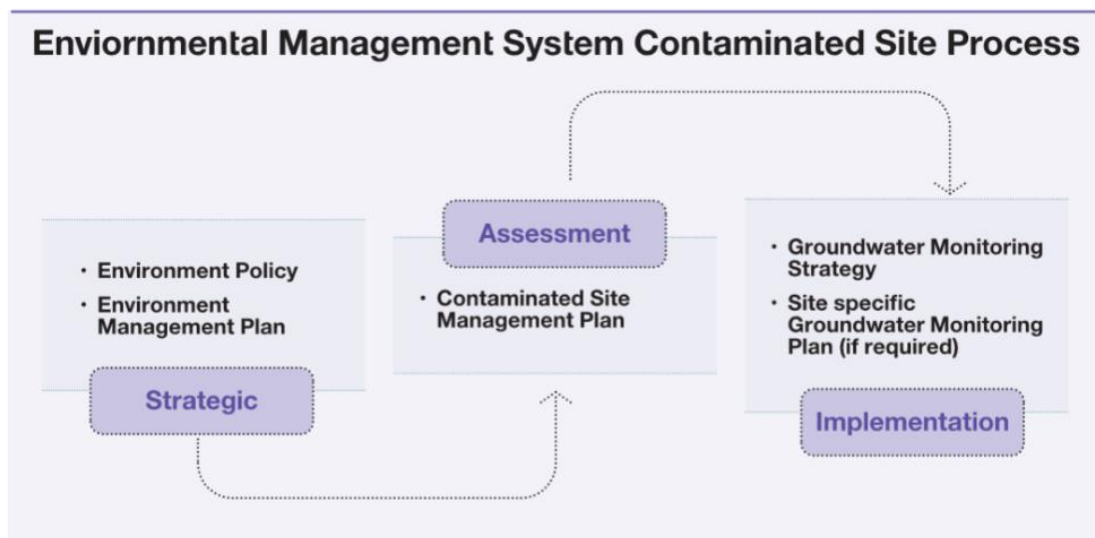


Figure 14.3: Environmental Management System process for contaminated sites

14.11.3 8 Year Action Plan

The Soil and Groundwater Action Plan over the eight-year period is detailed in Table 14-10 below.

SOIL AND GROUNDWATER MANAGEMENT ACTION/INITIATIVE	TIMEFRAME
Continue to review trigger criteria in the Groundwater Monitoring Strategy based on reviews of new data and updates to environment protection regulations	Ongoing
Continue to conduct regular groundwater monitoring in accordance with the Groundwater Monitoring Strategy	Ongoing
Continue to implement priority actions on the Contaminated Site Risk Register, in accordance with the Contaminated Site Management Plan	Ongoing
Continue to guide tenants to close out contaminated sites on a risk basis where practicable	Ongoing
Continue to conduct relevant environmental site assessments for new developments and lease terminations in accordance with the Environmental Site Assessment Guidelines	Ongoing
Continue to provide guidance to stakeholders on contamination prevention and remediation strategies	Ongoing
Develop a PFAS Management Plan for Parafield Airport	Short-term
Upload all historical and future contamination data to a Geographic Information Service platform	Medium-term
Collaborate with the Commonwealth in its assessment and management of PFAS as part of the National PFAS Management Program	Long-term

Table 14-10 Soil and Groundwater 8-Year Action Plan

14.12 Ground-based Noise

Objectives

- Ensure developments and airport activities comply with relevant ground-based noise regulations
- Proactively assess and manage potential ground-based noise exposure on the local community

14.12.1 Background

Parafield Airport is surrounded by high-density urban, industrial, and commercial development, all of which are potential receptors to ground-based noise generated by airport activities. The major contributors of ground-based noise at the airport include:

- Aircraft engine ground running (engine testing)
- Parked aircraft with operating engines
- Operation of an auxiliary power unit of an aircraft
- Ground vehicles (such as roads, car parks, truck delivery and loading operations)
- Plant and equipment (for example, mobile diesel generators)
- Construction activities.

Recent Achievements

- PAL completed a study to understand relative contributions of on and off-airport noise sources.
- The Ground Running Procedure was updated in 2020 to reflect community expectations for ground running times on weekends, and again in 2022 to ensure higher risk ground running activities are being adequately monitored and approved by PAL staff.
- Ground based noise modelling was updated in 2022 to incorporate noise monitoring undertaken at the airport boundary, including monitoring during aircraft engine ground running activities
- Development of a Noise and Emissions Management Plan in 2023.

14.12.2 Current Management

Ground running (engine testing) activities undertaken by aircraft operators are controlled through monitoring and enforcement of the Procedure for the Ground Running of Aircraft Engines at Parafield Airport. This procedure has been ratified by the DITRDCA Airport Environment Officer and is subject to periodic review. The procedure directs aircraft owners and maintenance operators as to when and where they

may test-run engines, the periods of time and power settings. PAL monitors these activities. Engine ground runs are currently permitted between 7.00 am-6.00 pm Monday to Friday, 8.00 am-6.00 pm on Saturdays, and 9.00 am-6.00 pm on Sundays and public holidays. Engine ground runs for safety critical maintenance or emergency services operations may occasionally occur outside of these hours.

The Noise and Emissions Management Plan identifies targets for ground-based noise and details a risk assessment and appropriate mitigation of risks for ground-based noise and emissions.

Operational and construction activities are controlled through lease agreements and tenant or CEMPs, where applicable and monitored through a program of regular site inspections.

Lease agreements require tenants to take all reasonable and practicable measures to minimise noise generated at their premises. All activities occurring on site must comply with the noise criteria specified in the Airports (Environment Protection) Regulations 1997 (Cth).

PAL provides a CEMP template to contractors and tenants that includes actions to minimise noise and vibration emissions during construction activities. Construction work hours generally occur between 7.00 am to 7.00 pm Monday to Saturday, in line with local government requirements, and any works outside these hours must be approved by PAL. To minimise disruption to aircraft operations, some works may need to be completed outside of typical construction hours.

Other actions to minimise noise exposure include fitting and maintaining appropriate noise attenuation equipment for on-site plant in accordance with manufacturer specifications, and notification of construction hours (particularly night work and when to expect noisy activities) to nearby residents. PAL is committed to engaging with the community on potential ground-based noise issues. A proactive engagement and consultation approach is undertaken in conjunction with development programs which address actual and potential ground-based noise, including through the Parafield Airport Consultative Committee and Parafield Airport Technical Working Group.

PAL undertakes boundary noise monitoring on a three yearly basis at locations of ground-based noise exposure. The results of the boundary noise monitoring undertaken over the last decade suggest that aircraft (in-flight) noise and other off-airport noise sources are greater contributors than airport ground-based noise in respect to noise exposure for sensitive noise receptors.

14.12.3 8 Year Action Plan

The Ground-based Noise Action Plan over the eight-year period is detailed in Table 14-11 below.

GROUND-BASED NOISE MANAGEMENT ACTION/INITIATIVE	TIMEFRAME
Continue ground-based noise monitoring, consistent with the Air Quality and Noise Management Plan	Ongoing
Conduct pre-development acoustic assessments on relevant new developments to assess the risk of unacceptable ground-based noise outputs	Ongoing
Undertake detailed study to understand relative contributions of on and off airport noise sources	Medium-term
Map historical and future ground-based noise complaints to inform noise investigations	Medium-term
Update the PAL Environment Management System, management plans and tenant guidance in-line with changes to Commonwealth regulations	Long-term

Table 14-11 Ground-based Noise 8-Year Action Plan

14.13 Local Air Quality

Objectives

- **Ensure developments and airport activities comply with relevant air quality regulations**
- **Proactively assess and manage potential airport related air quality impacts on the local community**

14.13.1 Background

Under the Airport (Environment Protection) Regulations 1997, PAL is responsible for managing air emissions generated by ground-based activities within the airport boundary. Air quality outside the airport boundary is subject to the provisions of the South Australian *Environment Protection Act 1993*. Air emissions generated by aircraft are regulated under separate legislation and are the responsibility of Airservices.

Parafield Airport is located within an urbanised area surrounded by residential, commercial, and industrial zones. The SA EPA monitors air quality in the northern Parafield airshed, at sites in Elizabeth and Northfield. Data published to-date by the SA EPA show air quality in the airshed that encompasses Parafield Airport meets the relevant National Environment Protection (Ambient Air Quality) Measure 2003 criteria.

Recent Achievements

- Ozone Depleting Substances Guidelines were developed in 2017 to guide PAL, tenants and contractors.
- Development of an Air Quality and Noise Management Plan in 2023

14.13.2 Current Management

The management of air emissions from ground-based activities covers items such as refueling, painting, cleaning, machining, mechanical maintenance, generator use, commercial cooking and construction.

Potential air quality issues related to construction activities are managed by PAL through:

- The Building Activity Application review process (described in Section 7.7)
- Review and approval of required contractor CEMPs
- PAL guidelines, including the Construction Environmental Management Guideline
- Construction environmental inspections conducted in accordance with the Tenant and Construction Environmental Inspection Procedure.

Potential air-quality issues related to the airport and tenant operational activities are managed through:

- The Building Activity Application review process
- Ozone Depleting Substances Register
- Ozone Depleting Substances Guidelines
- Regular tenant inspections undertaken by PAL in accordance with the Tenant and Environmental Inspection Procedure
- Spray-Painting Guidelines
- Implementation of the Air Quality and Noise Management Plan (ground based).

As part of implementing its Carbon Management Plan, PAL engages with flight training schools and Airservices Australia to explore opportunities for airfield and aviation efficiency resulting in reduced fuel burn and therefore reduced emissions. Operators of new technology aircraft, such as the use of zero emission electric aircraft, are encouraged to conduct flights at Parafield Airport. PAL continues to assess the feasibility for the accelerated adoption of electric aircraft technology at Parafield Airport (see Section 6.5.4)

14.13.3 8 Year Action Plan

The Local Air Quality Action Plan over the eight-year period is detailed in Table 14-12 below.

LOCAL AIR QUALITY MANAGEMENT ACTION/INITIATIVE	TIMEFRAME
Continue to conduct air quality monitoring and collect air emissions data from publicly available sources within the Parafield airshed	Ongoing
Continue to phase out the use of ozone-depleting substances where feasible	Ongoing
Continue to conduct regular tenant inspections for emissions quality	Ongoing
Map community air quality complaints to inform air quality investigations in-line with the Air Quality and Noise Management Plan (ground-based)	Ongoing
Undertake an on-airport baseline air quality assessment	Short-term
Develop and implement a monitoring schedule in accordance with the Air Quality and Noise Management Plan (ground-based)	Medium-term
Continue to identify opportunities and support aircraft operators in the uptake of emissions reduction technology, such as electric aircraft	Long-term

Table 14-12 Local Air Quality 8-Year Action Plan

14.14 Waste Management

Objectives

- Reduce waste generation.
- Increase reuse and recycling of products and materials.
- Increase diversion of airport waste from landfill.

14.14.1 Background

PAL manages waste and recycling material associated with the operation of the airport except for certain leased areas and waste from aircraft.

PAL provides services for five major waste and recycling streams across the general aviation areas and PAL offices including general waste, cardboard and paper, comingled and organics recycling. Other waste streams generated at the airport include metal, plastics, concrete and masonry, wood, asbestos, oil, tyres, e-waste, batteries (various types) and hard waste - most of which is recycled.

Waste management at Parafield Airport is driven by the hierarchy of waste management - reduction, reuse, recycle, recovery, treatment and disposal - and is underpinned by PAL's Waste Management Strategy. The hierarchy of waste management is a nationally and internationally accepted guide for prioritising waste management practices with the objective of achieving optimal economic, social and environmental outcomes and is shown in Figure 14-4.

Recent Achievements

- Recycling of demolition and construction waste is being achieved through PAL construction contracts and CEMPs.
- Management of the illegal dumping of tyres through ongoing consultation with tenants.
- Ongoing use of recycled building materials on new developments.

14.14.2 Current Management

PAL recognises the importance of reducing waste generation, maximising reuse and recycling, and the diversion of waste from landfill. PAL has a mature waste-management program driven by its high-level waste strategy and underpinned by specific operational waste management plans.

Through its Waste Management Strategy, PAL seeks to move towards maximising waste direct to landfill where practicable.

PAL also manages a range of maintenance and e-waste waste streams (including metals, green waste, plastics, globes, computers and screens). Recycling of these streams is well developed, and PAL continues to formalise these processes through development of an Operational Waste Management Plan.

PAL manages construction waste via the building approval process. This requires contractors to produce CEMPs which include activities related to waste management and recycling. Contractor performance against their CEMP is regularly audited by PAL.



Figure 14.4: Waste management hierarchy (Environment Protection Act 1993 for South Australia)

14.14.3 8 Year Action Plan

The Waste Management Action Plan over the eight-year period is detailed in Table 14-13 below.

WASTE MANAGEMENT ACTION/INITIATIVE	TIMEFRAME
Encourage and support the use of recycled construction materials	Ongoing
Staff education in recycling and waste management	Short-term
Assess feasibility for undertaking a sitewide 'single supplier' of waste management services to enable better tracking of waste and data insights	Short-term
Develop monitoring program for waste including internal audits and waste to destination audits incorporating ethical practices	Short-term
Update the Design Guidelines to incorporate environmentally sustainable design initiatives for waste management, such as the use of recycled construction materials	Short-term
Develop and implement the Waste Management Plan consistent with Parafield Airport operations	Medium-term
Investigate and map waste streams at Parafield Airport for opportunities to divert waste from landfill and insert recyclables into a circular economy	Long-term

Table 14-13 Waste Management 8-Year Action Plan

14.15 Land and Heritage Management

Objectives

- **Minimising the risks presented by wildlife to aviation safety**
- **Promote communication and engagement with Kurna traditional custodians**
- **Monitor and manage the ecological value of the vernal pools.**

14.15.1 Background

The airport site was previously farmland and has been used for airport operations since 1927. It has been heavily cultivated and leased for grazing and cropping. The airport has developed from an all-over grassed airfield to a complex network of paved runways, taxiways and aircraft aprons, as well as commercial and industrial developments.

14.15.1.1 Biodiversity and Conservation

An ecological assessment of the airport was undertaken in 2023, with reference to the ecological value of flora and fauna present at the airport, including a desktop assessment using publicly available search tools to identify Matters of National Significance under the EPBC Act. The assessment identified there are currently no threatened ecological communities or species listed under the EPBC Act identified on the airport site.

State-listed and regionally significant flora species have been identified on the airport site. Including Wiry Dock (*rumex dumosus*), Barren Cane-grass (*eragrostis infecunda*) and Hoary Rush (*juncus Radula*).

There are no State-listed fauna species present on the Parafield Airport site, with the broader airport environs providing a limited habitat for birds. The vernal pools are located at the southern end of the airport and are the last known array of pools within metropolitan Adelaide. These pools are ephemeral patch habitats dependent upon winter/spring surface water run-off. These areas contain several flora and fauna species which do not occur anywhere else in the airport site and are unique to these pools and the surrounding grassland. PAL has managed the condition of vernal pools under a management plan since 2016. The vernal pools and associated surrounding grasslands cover an area of approximately 20 hectares.

14.15.1.2 Aboriginal Cultural Heritage

Ethnographic records point to a rich and varied history of occupation by the Kurna people across the Adelaide region, which included a practical and cultural relationship with the ephemeral creeks, swamps and basins in and around Parafield Airport. The landscape of Parafield Airport is of importance to the Kurna People today and there remains a deep connectedness with the land.

Large areas of the airport have been surveyed in previous years and from which three Reported Sites have been recorded on the South Australian Government's Register of Aboriginal Sites and Objects. Two sites are known to contain stone artefact scatters and are situated within the Bennett Precinct. One additional site is located in the southern portion of the Airport Business Precinct, which was historically reported as a possible stone artefact scatter.

14.15.1.3 Built Heritage

Parafield Airport has a vibrant post-European settlement history, marked by several distinct development periods: establishment as a civilian aviation facility (1927-38); a World War II military training facility (1939-44); South Australia's commercial aviation gateway; and a centre for pilot training (1955 onwards).

The Parafield air traffic control tower, which is owned and occupied by Airservices Australia, was built in 1940 during World War II. It was added to the Commonwealth Heritage List in 2016 following a nomination from Airservices. The tower has a strong historical association with a key phase in the development of air traffic control services in Australia, being one of three almost identical integrated operations and administration buildings constructed at major airports between 1939 and 1941 (the others were at Mascot (Sydney) and Archerfield (Brisbane)). The Parafield tower is distinguished from those at Archerfield and Mascot in that it retains its original function, albeit with a 1981 cabin. It is likely that the building has been associated with the provision of air traffic control for longer than any other surviving building in Australia.

Recent Achievements

- The Parafield Airport Heritage Centre was opened in 2018 and houses historical accounts and memorabilia from South Australia's early aviation pioneers and Parafield Airport.
- A Land Management Plan was implemented in 2018 to support the wildlife hazard-management program through targeting the removal of problem weed species and promoting a more desired ground cover.
- Vegetation maintenance to control exotic weeds and fire risks at the vernal pools was undertaken in November 2020.

14.15.2 Current Management

14.15.2.1 Biodiversity and Conservation

Maintenance and operation activities, development and construction, and inappropriate management of stormwater, waste and pest species have the potential to impact upon biodiversity at Parafield Airport through the loss, degradation or injury to native flora and fauna.

PAL has dedicated many resources to the vernal pools, including development and implementation of the Vernal Pools Management Plan (formerly referenced as the Vernal Pools Conservation Zone Management Plan), provenance guidelines and monitoring surveys.

PAL has documented processes and guidance in the Landscape Guidelines and Land Management Plan to streamline the approval of building activity for land clearing and provide greater certainty and flexibility. These documents provide details on:

- Pest or native species that have been identified as presenting potential wildlife-hazard risks
- The decision-making framework for the retention or offsetting of exotic and native species.

14.15.2.2 Wildlife Risk Management

PAL runs a comprehensive wildlife management program. Ongoing wildlife hazard management measures include bird netting on the wetlands located along the western boundary, south of the Airport Business Precinct, daily wildlife counts and harassment techniques, and land management.

In 2018, PAL completed a review of its wildlife hazard management program. Key initiatives included a detailed vegetation and soil survey providing a

high-level understanding of invertebrates (insects), vegetation and soil condition across the airfield; and subsequent wildlife hazard mapping to compare invertebrates, vegetation and soil data with wildlife strike, abundance and location data to identify potentially problematic vegetation/ soil conditions. This has resulted in the development of an integrated Land Management Plan based on the detailed vegetation and soil survey and wildlife-hazard mapping results to target removal of problem weed species and promote a more desired ground cover.

All proposed landscaping is reviewed and assessed against the PAL Landscape Guidelines, as part of the airport's building application approval process, to ensure the planned activities are designed to reduce wildlife attraction.

PAL continues to collaborate with all levels of government, the Commonwealth Department of Defence and aviation stakeholders to identify high risk activities across metropolitan Adelaide based on the National Airports Safeguarding Framework guidelines for managing the risk of wildlife strikes near airports (described in Section 12).

14.15.2.3 Aboriginal Cultural Heritage

The South Australian *Aboriginal Heritage Act 1988* protects all Aboriginal sites, objects and ancestral remains throughout the State and approval must be sought from the Minister responsible for Aboriginal Affairs and Reconciliation prior to any action that could damage, disturb or interfere with an Aboriginal site.

PAL requires CEMPs to include measures to minimise impacts arising from activities on sites, objects and remains of cultural heritage significance. This includes actions such as including cultural heritage awareness in site inductions, installing bunting around areas of cultural heritage significance to ensure there is no access to the area, and ceasing works if artefacts or areas of potential cultural heritage significance are found or suspected. PAL staff undertake regular site inspections to ensure that construction activities are complying with the CEMP.

A Community Engagement Framework has been developed for Adelaide and Parafield airports and includes actions to build relationships with the Kaurna people and other First Nations Peoples.

14.15.2.4 Built Heritage

As a result of the listing of Parafield air traffic control tower on the Commonwealth Heritage Register in 2016, PAL identifies the tower in its Heritage Management Strategy, together with several other buildings of lower heritage value. Airservices maintains a Heritage Management Plan for the air traffic control tower.

PAL's building approval process, regulated under the Airports Act, provides the mechanism for development control and triggers any relevant management actions relating to built heritage.

14.15.2.5 South Australian Aviation History

PAL is committed to ensuring that the diverse and important history of Parafield Airport is given appropriate recognition. In celebration of 90 years of aviation history, the Parafield Aviation Heritage Centre was opened in April 2018. Housed in the old fire station building on Kings Road, the Centre includes memorabilia and historical accounts from Parafield Airport and South Australia's early aviation pioneers. Showcasing key themes and events that have occurred at Parafield Airport over the past 90 years, the Centre is a visitor attraction for the northern suburbs and an educational hub for school groups. PAL acknowledges the significant number of aviation and heritage experts that provided their support to bring this project to fruition

14.15.3 8 Year Action Plan

The Land and Heritage Action Plan over the eight-year period is detailed in Table 14-14 below.

LAND AND HERITAGE MANAGEMENT ACTION/INITIATIVE	TIMEFRAME
Implement the Community Engagement Framework and promote communication between Parafield Airport and Kaurna traditional custodians	Ongoing
Continue to develop and implement the Vernal Pools Management Plan ^{**}	Ongoing
Continue to implement Wildlife Hazard Management Strategy and Wildlife Hazard Management Plan	Ongoing
Update the Parafield Airport Heritage Strategy	Short-term
Develop and implement a Reconciliation Action Plan	Short-term
Update the Design Guidelines to incorporate further initiatives related to landscape design and wildlife hazard management	Medium-term
Implement procedures for identifying and protecting archaeological artefacts	Medium-term

Table 14-14 Land and Heritage 8-Year Action Plan

^{**} Formerly titled Vernal Pool Conservation Zone Management Plan



PART D Implementing The Plan

Section 15. Development Program

Provides details of future key developments covered by the Master Plan 2024, based on the vision, strategic objectives, anticipated aviation growth forecasts, commercial development opportunities, transport and access requirements and environmental commitments.



Development
Program

15

15.1 Introduction

The Development Concept Plan contains a summary of potential developments outlined in the Master Plan 2024 to accommodate growth at Parafield Airport in accordance with the airport vision and development objectives (see Section 5).

The Development Concept Plan outlines proposed developments for improvements to the airfield, aviation facilities and infrastructure requirements to support the forecast increase for aircraft movements to 2043. The Development Concept Plan also outlines potential commercial property opportunities across Parafield Airport that are complementary to aviation operations and contribute to the economic growth of the State and local economies.

Details are also provided of the improvements to the ground transport network to accommodate traffic requirements to 2043.

The existing runway system provides sufficient capacity for the forecast volume of aircraft movements up to and beyond the 20-year planning period of this Master Plan. The aviation development plan is focused on extending the usable life of the infrastructure and improving the efficiency of the airfield.

The Parafield Airport Master Plan 2024 is underpinned by a detailed Environment Strategy, recognising Parafield Airport Limited's (PAL) responsibilities to meet legislative requirements and strive for environmentally sustainable outcomes for the ongoing operations of Parafield Airport.

15.2 8-Year Development Concept Plan

The 8-Year Development Concept Plan for Parafield Airport is based on capacity needs as determined by the current growth forecasts. PAL will continue to monitor the expected growth, as well as aviation trends and customer needs, and respond to any changes as necessary. Therefore, the actual timing of developments may vary and will be subject to appropriate engagement. During the next eight years, PAL will continue to focus on supporting the aviation industry, striving for innovative solutions, and achieving sustainable outcomes.

Aviation developments will focus on runway surface spray treatments, upgrading the runway lighting on Runway 03L/21R, sealing of Taxiway A, and aircraft run-up bay expansions. Electrical services may be required within aircraft parking areas for charging electric aircraft batteries.

Commercial development will continue across the airport to support businesses and provide economic stimulus to the State and region. To cater for existing and planned developments and associated employment and visitor traffic, a new intersection is planned for the Airport Business Precinct and the intersection into the Enterprise Precinct will become signalised. The internal road network across all precincts will also be modified to support the uplift of development within the airport as needed.

PAL continues to receive strong interest for vacant land within the Commercial, Airport Business and Enterprise precincts and is currently working with several third parties on a variety of site and development options.

Key development projects for Parafield Airport, as outlined in the 8-Year Development Concept Plan, are highlighted in Table 15-1.

AREA	POTENTIAL DEVELOPMENT
Aviation Development	<p>Runways</p> <ul style="list-style-type: none"> • Surface spray treatment of runways 03L/21R, 08R/26L and 08L/26R • Upgrade of runway lighting for runway 03L/21R to maintain compliance with airfield standards • Re-sealing of runways as required
	<p>Taxiways, Aprons and Run-Up Bays</p> <ul style="list-style-type: none"> • Sealing of Taxiway A to improve airfield efficiency • Expansion of run-up bay J and run-up bay B to improve airfield efficiency • Expansion of the southern apron and expanded hangar and apron development area adjacent to the existing western apron to increase aircraft parking capacity where commercially viable • Surface spray treatments and re-sealing of taxiways and run-up bays as required • Installation of electrical services (within parking apron) for charging of electric aircraft
Commercial Development	<p>Airport Business Precinct</p> <ul style="list-style-type: none"> • Commercial development will continue with a focus on infill, redevelopment and upgrade to existing buildings and sites. • New development to be advanced including a childcare centre, and development occurring in the land adjacent to the railway line.
	<p>Enterprise Precinct</p> <ul style="list-style-type: none"> • Industrial and commercial development will commence
	<p>Commercial Precinct</p> <ul style="list-style-type: none"> • Retail and commercial development will continue, including large format retail and a retail fuel outlet
Ground Transport	<p>Roads</p> <ul style="list-style-type: none"> • New internal road network aligned with proposed development in the Enterprise Precinct and signalisation of existing intersection on Elder Smith Road • Extension of Nobby Buckley Drive (north and south) to provide access for potential new commercial development in the Commercial Precinct • New intersection on Kings Road and new internal road network aligned with proposed development in the Airport Business Precinct
	<p>Car Parks</p> <ul style="list-style-type: none"> • New car parking areas in the Airport Business Precinct
	<p>Walkways and Cycleways</p> <ul style="list-style-type: none"> • Extension of the shared path on Kings Road (within the airport site) to provide a link to the Main North Road cycle network • New walkways aligned with road extensions and new road networks within precincts
	<p>Responding to future technology – build in flexibility and responding to disruptive technology (ride share, air taxis, autonomous vehicles etc)</p>

Table 15-1: 8-Year Development Concept Plan

15.3 20-Year Development Concept Plan

The 20-Year Development Concept Plan (20-Year Plan) for Parafield Airport is also based on capacity needs, as determined by the current growth forecasts. Key development projects for Parafield Airport, as outlined in the 20-Year Development Concept Plan, are highlighted in Table 15-2.

AREA	POTENTIAL DEVELOPMENT
Aviation Development	Runways <ul style="list-style-type: none"> • Re-sealing of runways as required
	Taxiways, Aprons and Run-Up Bays <ul style="list-style-type: none"> • Extension of Taxiway B and sealing of Taxiway J to improve airfield efficiency • Construction of new run-up bay on Taxiway B • Expansion of the southern apron and expanded hangar and apron development area adjacent to the existing western apron to increase aircraft parking capacity where commercially viable
	Helicopters <ul style="list-style-type: none"> • Potential relocation of helipad facilities to reduce operational constraints for helicopter operations
Commercial Development	Airport Business Precinct <ul style="list-style-type: none"> • Continued development of commercial, industrial and aviation-related facilities
	Enterprise Precinct <ul style="list-style-type: none"> • Development of industrial, freight/logistics/warehousing, commercial and aviation-related and support activities
	Commercial Precinct <ul style="list-style-type: none"> • Continued commercial development of the remainder of the developable land
Ground Transport	Roads <ul style="list-style-type: none"> • New internal road network aligned with proposed development within the Airport Business Precinct • Modification of the Kings Road intersection with the Airport Business Precinct to be a signalised intersection • Extension of Nobby Buckley Drive (south) to provide access for new commercial development within the Commercial Precinct • New intersection on Elder Smith Road for the Enterprise Precinct • New internal road network aligned with proposed development in the Enterprise Precinct • Link between the Airport Business Precinct and Enterprise Precinct
	Car Parks <ul style="list-style-type: none"> • Additional car parking in the Airport Business Precinct
	Walkways and Cycleways <ul style="list-style-type: none"> • Extension of existing shared path adjacent to Elder Smith Road to connect into Enterprise Precinct • New shared path within Bennett Precinct adjacent to Elder Smith Road to enable off-road link to Main North Road cycle network • New walkways aligned with road extensions and new road networks within precincts
	Rail <ul style="list-style-type: none"> • Potential freight rail spur into Enterprise Precinct, dependent on requirements and uses of future development

Table 15-2: 20-Year Development Concept Plan



Supporting
Material



PART E

Supporting Material

Appendix A.
Compliance with the
Airports Act 1996

Appendix B.
ANEF Data Table



Appendix A: Compliance with the *Airports Act 1996*

A

Compliance with the Airports Act 1996

The Parafield Airport Master Plan must be prepared in accordance with the requirements of the Airports Act and associated Regulations.

The legislation specifies elements that are to be addressed within a Master Plan. The tables below should be used to reference how each element of the legislation is addressed within the Master Plan 2024.

REQUIREMENTS UNDER PART 5, DIVISION 3, SECTION 70(2) FINAL MASTER PLANS	SECTION RESPONSE
THE PURPOSES OF A FINAL MASTER PLAN FOR AN AIRPORT ARE:	
a. to establish the strategic direction for efficient and economic development at the airport over the planning period of the plan	Sections 3 and 5
b. to provide for the development of additional uses of the airport site	Sections 7 and 9
c. to indicate to the public the intended uses of the airport site	Section 7
d. to reduce potential conflicts between uses of the airport site, and to ensure that uses of the airport site are compatible with the areas surrounding the airport	Sections 5 and 7
e. to ensure that all operations at the airport are undertaken in accordance with relevant environmental legislation and standards	Section 14
f. to establish a framework for assessing compliance at the airport with relevant environmental legislation and standards	Section 14
g. to promote the continual improvement of environmental management at the airport	Section 14

REQUIREMENTS UNDER PART 5, DIVISION 3, SECTION 71(2) CONTENTS OF DRAFT OR FINAL MASTER PLAN	SECTION RESPONSE
a. the airport-lessee company's development objectives for the airport	Section 5
b. the airport-lessee company's assessment of the future needs of civil aviation users of the airport, and other users of the airport, for services and facilities relating to the airport	Sections 4, 5, 6, 7, 8, 9, 10 and 11
c. the airport-lessee company's intentions for land use and related development of the airport site, where the uses and developments embrace airside, landside, surface access and land planning/zoning aspects	Section 7
d. an Australian Noise Exposure Forecast (in accordance with regulations, if any, made for the purpose of this paragraph) for the areas surrounding the airport	Section 13 and Appendix B
da. flight paths (in accordance with regulations, if any, made for the purpose of this paragraph) at the airport	Section 13
e. the airport-lessee company's plans, developed following consultations with the airlines that use the airport and local government bodies in the vicinity of the airport, for managing aircraft noise intrusion in areas forecast to be subject to exposure above the significant ANEF levels	Section 13 and Appendix B
f. the airport-lessee company's assessment of environmental issues that might reasonably be expected to be associated with the implementation of the plan	Section 14
g. the airport-lessee company's plans for dealing with the environmental issues mentioned in paragraph (f) (including plans for ameliorating or preventing environmental impacts)	Section 14

REQUIREMENTS UNDER PART 5, DIVISION 3, SECTION 71(2) CONTENTS OF DRAFT OR FINAL MASTER PLAN	SECTION RESPONSE
ga. in relation to the first 8 years of the master plan – a plan for a ground transport system on the landside of the airport that details: <ul style="list-style-type: none"> i. a road network plan ii. the facilities for moving people (employees, passengers and other airport users) and freight at the airport iii. the linkages between those facilities, the road network and public transport system at the airport and the road network and public transport system outside the airport iv. the arrangements for working with the State or local authorities or other bodies responsible for the road network and the public transport system v. the capacity of the ground transport system at the airport to support operations and other activities at the airport vi. the likely effect of the proposed developments in the master plan on the ground transport system and traffic flows at, and surrounding, the airport 	Section 10
gb. in relation to the first 8 years of the master plan - detailed information on the proposed developments in the master plan that are to be used for: <ul style="list-style-type: none"> vii. commercial, community, office or retail purposes viii. for any other purpose that is not related to airport services 	Section 9
gc. in relation to the first 8 years of the master plan - the likely effect of the proposed developments in the master plan on: <ul style="list-style-type: none"> i. employment levels at the airport ii. the local and regional economy and community, including an analysis of how the proposed developments fit within the planning schemes for commercial and retail development in the area that is adjacent to the airport 	Section 3
h. an environment strategy that details: <ul style="list-style-type: none"> i. the airport-lessee company's objectives for the environmental management of the airport ii. the areas (if any) within the airport site which the airport-lessee company, in consultation with State and Federal conservation bodies, identifies as environmentally significant iii. the sources of environmental impact associated with airport operations iv. the studies, reviews and monitoring to be carried out by the airport-lessee company in connection with the environmental impact associated with airport operations v. the time frames for completion of those studies and reviews and for reporting on that monitoring vi. the specific measures to be carried out by the airport-lessee company for the purposes of preventing, controlling or reducing the environmental impact associated with airport operations vii. the time frames for completion of those specific measures viii. details of the consultations undertaken in preparing the strategy (including the outcome of the consultations) ix. any other matters that are prescribed in the regulations 	Section 14
i. such other matters (if any) as are specified in the regulations	

REQUIREMENTS UNDER PART 5, DIVISION 3, SECTION 71A DRAFT OR FINAL MASTER PLAN MUST IDENTIFY PROPOSED SENSITIVE DEVELOPMENTS		SECTION RESPONSE
1.	A draft or final master plan must identify any proposed sensitive development in the plan.	Section 7
2.	A sensitive development is the development of, or a redevelopment that increases the capacity of, any of the following: <ul style="list-style-type: none"> a. a residential dwelling b. a community care facility c. a pre-school d. a primary, secondary, tertiary or other educational institution e. a hospital 	Section 7
(2A).	A sensitive development does not include the following: <ul style="list-style-type: none"> a. an aviation educational facility b. accommodation for students studying at an aviation educational facility at the airport c. a facility with the primary purpose of providing emergency medical treatment and which does not have inpatient facilities d. a facility with the primary purpose of providing in-house training to staff of an organisation conducting operations at the airport 	Noted

REQUIREMENTS UNDER PART 5, DIVISION 3, SECTION 79 PUBLIC COMMENT OR ADVICE TO STATE ETC.		SECTION RESPONSE
ADVICE TO STATE ETC.		
(1A)	Before giving the Minister a draft master plan for an airport under section 75, 76 or 78, the airport-lessee company for the airport must advise, in writing, the following persons of its intention to give the Minister the draft master plan: <ul style="list-style-type: none"> a. the Minister, of the State in which the airport is situated, with responsibility for town planning or use of land; b. the authority of that State with responsibility for town planning or use of land; c. each local government body with responsibility for an area surrounding the airport 	Noted
(1B)	The draft plan submitted to the Minister must be accompanied by: <ul style="list-style-type: none"> a. a copy of the advice given under subsection (1A); and b. a written certificate signed on behalf of the company listing the names of those to whom the advice was given. 	Noted

REQUIREMENTS UNDER PART 5, DIVISION 3, SECTION 79 PUBLIC COMMENT OR ADVICE TO STATE ETC.	SECTION RESPONSE
PUBLIC COMMENT	
<p>(2) After giving the advice under subsection (1A), but before giving the Minister the draft master plan, the company must also:</p> <ul style="list-style-type: none"> a. cause to be published in a newspaper circulating generally in the State in which the airport is situated, and on the airport's website, a notice: <ul style="list-style-type: none"> i. stating that the company has prepared a preliminary version of the draft plan; and ii. stating that copies of the preliminary version will be available for inspection and purchase by members of the public during normal office hours throughout the period of 60 business days after the publication of the notice; and iii. specifying the place or places where the copies will be available for inspection and purchase; and iiia. in the case of a notice published in a newspaper—stating that copies of the preliminary version will be available free of charge to members of the public on the airport's website throughout the period of 60 business days after the publication of the notice; and iiib. in the case of a notice published in a newspaper—specifying the address of the airport's website; and iv. in any case—inviting members of the public to give written comments about the preliminary version to the company within 60 business days after the publication of the notice; and b. make copies of the preliminary version available for inspection and purchase by members of the public in accordance with the notice; and c. make copies of the preliminary version available free of charge to members of the public on the airport's website: <ul style="list-style-type: none"> i. in a readily accessible format that is acceptable to the Minister; and ii. in accordance with the notice. 	Noted
<p>(2) If members of the public (including persons covered by subsection (1A)) have given written comments about the preliminary version in accordance with the notice, the draft plan submitted to the Minister must be accompanied by:</p> <ul style="list-style-type: none"> a. copies of those comments; and b. a written certificate signed on behalf of the company: <ul style="list-style-type: none"> i. listing the names of those members of the public; and ii. summarising those comments; and iii. demonstrating that the company has had due regard to those comments in preparing the draft plan; and iv. setting out such other information (if any) about those comments as is specified in the regulations. 	Noted
<p>(3) Subsection (2) does not, by implication, limit the matters to which the company may have regard.</p>	Noted

REQUIREMENTS UNDER PART 5, DIVISION 3, SECTION 80 CONSULTATIONS		SECTION RESPONSE
(1)	This section applies if: <ul style="list-style-type: none"> a. an airport-lessee company gives the Minister a draft master plan under section 75, 76 or 78; and b. before the publication under section 79 of a notice about the plan, the company consulted (other than by giving an advice under subsection 79(1A)) a person covered by any of the following subparagraphs: <ul style="list-style-type: none"> i. a State government; ii. an authority of a State; iii. a local government body; iv. an airline or other user of the airport concerned; v. any other person. 	Noted
(2)	The draft plan submitted to the Minister must be accompanied by a written statement signed on behalf of the company: <ul style="list-style-type: none"> a. listing the names of the persons consulted; and b. summarising the views expressed by the persons consulted. 	Noted

REQUIREMENTS UNDER REGULATION 5.02: CONTENTS OF DRAFT OR FINAL MASTER PLAN - GENERAL		SECTION RESPONSE
1.	For paragraphs 71(2)(j) and (3)(j) of the Act, the following matters are specified: <ul style="list-style-type: none"> a. any change to the OLS or PANSOPS surfaces for the airport concerned that is likely to result if development proceeds in accordance with the master plan b. for an area of an airport where a change of use of a kind described in subregulation 6.07(2) of the <i>Airports (Environment Protection) Regulations 1997</i> is proposed: <ul style="list-style-type: none"> i. the contents of the report of any examination of the area carried out under regulation 6.09 of those Regulations ii. the airport-lessee company's plans for dealing with any soil pollution referred to in the report. 	Section 12
2.	For section 71 of the Act, 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.	Section 7
3.	For subsection 71(5) of the Act, a draft or final master plan must: <ul style="list-style-type: none"> a. 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 b. 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. 	Section 7

REQUIREMENTS UNDER REGULATION 5.02A: CONTENTS OF DRAFT OR FINAL MASTER PLAN - TO BE SPECIFIED IN ENVIRONMENT STRATEGY		SECTION RESPONSE
1.	For subparagraphs 71(2)(h)(ix) and (3)(h)(ix) of the Act, the matters in this regulation must be specified in an environment strategy.	Section 14
2.	The environment strategy must specify any areas within the airport site to which the strategy applies that the airport-lessee company for the airport has identified as being a site of indigenous significance, following consultation with: <ul style="list-style-type: none"> a. any relevant indigenous communities and organisations; and b. any relevant Commonwealth or State body 	
3.	The environment strategy must specify the airport-lessee company's strategy for environmental management of areas of the airport site that are, or could be, used for a purpose that is not connected with airport operations.	
4.	The environment strategy must specify: <ul style="list-style-type: none"> a. the training necessary for appropriate environment management by persons, or classes of persons, employed on the airport site by the airport-lessee company or by other major employers; and b. the training programs, of which the airport-lessee company is aware, that it considers would meet the training needs of a person mentioned in paragraph (a). 	Section 14

REQUIREMENTS UNDER REGULATION 5.02B: CONTENTS OF DRAFT OR FINAL MASTER PLAN - TO BE ADDRESSED IN ENVIRONMENT STRATEGY		SECTION RESPONSE
1.	For subsection 71(5) of the Act, a draft or final master plan must address the content in this regulation.	Section 14
2.	In specifying its objectives for the airport under subparagraph 71(2)(h)(i) or (3)(h)(i) of the Act, an airport-lessee company must address its policies and targets for: <ul style="list-style-type: none"> a. continuous improvement in the environmental consequences of activities at the airport b. progressive reduction in extant pollution at the airport c. development and adoption of a comprehensive environmental management system for the airport that maintains consistency with relevant Australian and international standards d. identification, and conservation, by the airport-lessee company and other operators of undertakings at the airport, of objects and matters at the airport that have natural, indigenous or heritage value e. involvement of the local community and airport users in development of any future strategy f. dissemination of the strategy to sub-lessees, licensees, other airport users and the local community. 	Section 14

REQUIREMENTS UNDER REGULATION 5.02B: CONTENTS OF DRAFT OR FINAL MASTER PLAN - TO BE ADDRESSED IN ENVIRONMENT STRATEGY		SECTION RESPONSE
3.	In specifying under subparagraph 71(2)(h)(ii) or (3)(h)(ii) of the Act, the areas within the airport site it identifies as environmentally significant, an airport-lessee company must address: <ul style="list-style-type: none"> a. any relevant recommendation of the Australian Heritage Council b. any relevant recommendation of the Department of Environment regarding biota, habitat, heritage or similar matters c. any relevant recommendation of a body established in the State in which the airport is located, having responsibilities in relation to conservation of biota, habitat, heritage or similar matters. 	Section 14
4.	In specifying the sources of environmental impact under subparagraph 71(2)(h)(iii) or (3)(h) (iii) of the Act, an airport-lessee company must address: <ul style="list-style-type: none"> a. the quality of air at the airport site, and in so much of the regional airshed as is reasonably likely to be affected by airport activities b. water quality, including potentially affected groundwater, estuarine waters and marine waters c. soil quality, including that of land known to be already contaminated d. release, into the air, of substances that deplete stratospheric ozone e. generation and handling of hazardous waste and any other kind of waste f. usage of natural resources (whether renewable or non-renewable) g. usage of energy the production of which generates emissions of gases known as 'greenhouse gases' h. generation of noise. 	Section 14



Appendix B: ANEF Data Table

B

ANEF Data Table

PARAFIELD AIRPORT ANEF 2043 FORECAST AIRCRAFT MOVEMENTS																
AIRCRAFT	ARRIVALS			DEPARTURES			CIRC.	ALL	ARRIVALS			DEPARTURES			CIRC.	ALL
	DAY	NIGHT	TOTAL	DAY	NIGHT	TOTAL			DAY	NIGHT	TOTAL	DAY	NIGHT	TOTAL		
	RUNWAY 03L								RUNWAY 03R							
BE30	0.022	0.001	0.023	0.022	0.001	0.023	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BEC58P	0.366	0.017	0.384	0.372	0.018	0.389	0.648	1.421	0.012	0.001	0.012	0.007	0.000	0.007	0.000	0.019
CNA172	3.472	0.164	3.636	3.925	0.185	4.110	2.132	9.879	1.176	0.056	1.232	0.724	0.034	0.758	18.802	20.792
CNA182	0.342	0.016	0.358	0.353	0.017	0.370	0.152	0.880	0.116	0.005	0.121	0.104	0.005	0.109	1.339	1.569
CNA20T	0.160	0.008	0.167	0.211	0.010	0.221	0.062	0.449	0.078	0.004	0.082	0.027	0.001	0.028	0.543	0.653
CNA441	0.004	0.000	0.005	0.004	0.000	0.005	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COMSEP	0.029	0.001	0.030	0.044	0.002	0.047	0.011	0.087	0.033	0.002	0.035	0.017	0.001	0.018	0.097	0.150
DA40	21.357	1.008	22.366	23.177	1.094	24.271	15.865	65.502	7.446	0.352	7.797	5.626	0.266	5.892	139.878	153.568
GASEPF	1.740	0.082	1.822	1.844	0.087	1.931	0.962	4.715	0.464	0.022	0.485	0.359	0.017	0.376	8.479	9.341
GASEPV	0.939	0.044	0.983	0.507	0.024	0.531	0.398	1.912	0.341	0.016	0.357	0.773	0.036	0.809	3.512	4.679
LEAR35	0.413	0.020	0.433	0.620	0.029	0.649	0.000	1.082	0.207	0.010	0.216	0.000	0.000	0.000	0.000	0.216
MU3001	0.010	0.000	0.011	0.011	0.001	0.012	0.000	0.022	0.003	0.000	0.003	0.002	0.000	0.002	0.000	0.006
PA30	2.743	0.130	2.873	2.830	0.134	2.963	13.351	19.187	0.120	0.006	0.125	0.033	0.002	0.035	0.000	0.160
PA31	0.044	0.002	0.046	0.044	0.002	0.046	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PA42	0.034	0.002	0.036	0.040	0.002	0.041	0.004	0.081	0.006	0.000	0.006	0.000	0.000	0.000	0.039	0.045
T37B	0.022	0.001	0.023	0.022	0.001	0.023	0.002	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.019	0.019
T42	0.545	0.026	0.570	0.594	0.028	0.622	0.670	1.862	0.049	0.002	0.051	0.000	0.000	0.000	0.000	0.051
TOTAL	32.242	1.522	33.765	34.619	1.635	36.254	34.257	104.276	10.050	0.474	10.524	7.673	0.362	8.035	172.709	191.268
	RUNWAY 21R								RUNWAY 21L							
BE30	0.038	0.002	0.041	0.032	0.002	0.034	0.000	0.075	0.000	0.000	0.000	0.006	0.000	0.006	0.000	0.006
BEC58P	0.641	0.038	0.679	0.619	0.037	0.656	1.048	2.382	0.017	0.001	0.018	0.039	0.002	0.041	0.000	0.059
CNA172	7.127	0.423	7.550	6.988	0.415	7.403	3.447	18.400	0.957	0.057	1.014	1.096	0.065	1.161	30.388	32.563
CNA182	0.636	0.038	0.674	0.541	0.032	0.573	0.245	1.493	0.159	0.009	0.169	0.254	0.015	0.270	2.164	2.602
CNA20T	0.325	0.019	0.345	0.324	0.019	0.343	0.100	0.787	0.088	0.005	0.093	0.089	0.005	0.095	0.878	1.066
CNA441	0.008	0.000	0.008	0.008	0.000	0.008	0.000	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COMSEP	0.098	0.006	0.104	0.104	0.006	0.110	0.018	0.232	0.009	0.001	0.010	0.003	0.000	0.003	0.157	0.170
DA40	41.314	2.452	43.766	41.278	2.450	43.728	25.641	113.135	8.777	0.521	9.298	8.812	0.523	9.335	226.074	244.707
GASEPF	3.355	0.199	3.554	3.282	0.195	3.477	1.544	8.585	0.477	0.028	0.505	0.550	0.033	0.583	13.704	14.792
GASEPV	1.877	0.111	1.988	1.316	0.078	1.394	0.644	4.027	0.349	0.021	0.369	0.909	0.054	0.963	5.676	7.009
LEAR35	1.078	0.064	1.142	1.078	0.064	1.142	0.000	2.284	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MU3001	0.023	0.001	0.024	0.019	0.001	0.020	0.000	0.045	0.000	0.000	0.000	0.004	0.000	0.004	0.000	0.004
PA30	4.916	0.292	5.208	4.871	0.289	5.160	21.579	31.947	0.063	0.004	0.067	0.108	0.006	0.114	0.000	0.181
PA31	0.076	0.005	0.081	0.076	0.005	0.081	0.000	0.162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PA42	0.061	0.004	0.064	0.038	0.002	0.041	0.007	0.112	0.008	0.000	0.009	0.031	0.002	0.032	0.063	0.104
T37B	0.038	0.002	0.041	0.038	0.002	0.041	0.004	0.085	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.031
T42	1.023	0.061	1.084	1.010	0.060	1.070	1.082	3.236	0.009	0.001	0.010	0.023	0.001	0.024	0.000	0.034
TOTAL	62.636	3.718	66.354	61.624	3.657	65.281	55.367	187.002	10.912	0.648	11.560	11.925	0.078	12.633	279.135	303.328
	RUNWAY 08L								RUNWAY 08R							
BE30	0.002	0.000	0.002	0.002	0.000	0.002	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
BEC58P	0.021	0.001	0.022	0.035	0.002	0.037	0.074	0.133	0.022	0.001	0.024	0.009	0.001	0.010	0.000	0.034
CNA172	0.443	0.027	0.470	0.525	0.033	0.558	0.006	1.035	0.093	0.006	0.099	0.011	0.001	0.012	2.383	2.493
CNA182	0.050	0.003	0.053	0.050	0.003	0.053	0.000	0.107	0.003	0.000	0.003	0.003	0.000	0.003	0.170	0.176
CNA20T	0.023	0.001	0.025	0.023	0.001	0.024	0.000	0.049	0.004	0.000	0.005	0.005	0.000	0.005	0.069	0.078

238 PARAFIELD AIRPORT

PARAFIELD AIRPORT ANEF 2043 FORECAST AIRCRAFT MOVEMENTS																
AIRCRAFT	ARRIVALS			DEPARTURES			CIRC.	ALL	ARRIVALS			DEPARTURES			CIRC.	ALL
	DAY	NIGHT	TOTAL	DAY	NIGHT	TOTAL			DAY	NIGHT	TOTAL	DAY	NIGHT	TOTAL		
CNA441	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COMSEP	0.007	0.000	0.007	0.007	0.000	0.008	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.012
DA40	2.987	0.185	3.172	2.973	0.184	3.157	0.046	6.375	0.336	0.021	0.357	0.350	0.022	0.372	17.726	18.455
GASEPF	0.227	0.014	0.241	0.245	0.015	0.260	0.003	0.505	0.027	0.002	0.028	0.009	0.001	0.010	1.075	1.113
GASEPV	0.126	0.008	0.134	0.140	0.009	0.148	0.001	0.284	0.021	0.001	0.023	0.008	0.000	0.008	0.445	0.476
LEAR35	0.062	0.004	0.066	0.065	0.004	0.069	0.000	0.135	0.009	0.001	0.010	0.006	0.000	0.007	0.000	0.017
MU3001	0.001	0.000	0.001	0.001	0.000	0.001	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PA30	0.248	0.015	0.263	0.273	0.017	0.289	1.524	2.076	0.082	0.005	0.088	0.058	0.004	0.061	0.000	0.149
PA31	0.000	0.000	0.000	0.005	0.000	0.005	0.000	0.005	0.005	0.000	0.005	0.000	0.000	0.000	0.000	0.006
PA42	0.005	0.000	0.005	0.005	0.000	0.005	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005
T37B	0.002	0.000	0.002	0.002	0.000	0.002	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.003
T42	0.046	0.003	0.048	0.063	0.004	0.067	0.076	0.191	0.023	0.001	0.024	0.006	0.000	0.006	0.000	0.031
TOTAL	4.251	0.263	4.514	4.413	0.273	4.687	1.731	10.932	0.628	0.039	0.667	0.466	0.029	0.495	21.886	23.048
RUNWAY 26R									RUNWAY 26L							
BE30	0.006	0.000	0.006	0.006	0.000	0.006	0.000	0.012	0.001	0.000	0.001	0.001	0.000	0.001	0.000	0.001
BEC58P	0.064	0.002	0.065	0.107	0.003	0.109	0.175	0.350	0.048	0.001	0.049	0.005	0.000	0.005	0.000	0.054
CNA172	1.306	0.035	1.340	1.333	0.036	1.369	0.351	3.060	0.065	0.002	0.067	0.037	0.001	0.038	5.304	5.410
CNA182	0.097	0.003	0.099	0.135	0.004	0.138	0.025	0.263	0.038	0.001	0.039	0.000	0.000	0.000	0.378	0.417
CNA20T	0.045	0.001	0.046	0.070	0.002	0.072	0.010	0.128	0.025	0.001	0.026	0.000	0.000	0.000	0.153	0.179
CNA441	0.001	0.000	0.001	0.001	0.000	0.001	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COMSEP	0.018	0.000	0.019	0.018	0.000	0.019	0.002	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.028
DA40	7.582	0.209	8.061	7.731	0.206	7.936	2.612	18.610	0.640	0.017	0.657	0.762	0.020	0.782	39.463	40.902
GASEPF	0.622	0.017	0.693	0.608	0.016	0.624	0.158	1.421	0.027	0.001	0.028	0.042	0.001	0.043	2.392	2.463
GASEPV	0.334	0.009	0.343	0.351	0.009	0.360	0.066	0.769	0.043	0.001	0.044	0.027	0.001	0.027	0.991	1.062
LEAR35	0.164	0.004	0.168	0.167	0.004	0.172	0.000	0.340	0.019	0.000	0.019	0.016	0.000	0.016	0.000	0.035
MU3001	0.003	0.000	0.004	0.004	0.000	0.004	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
PA30	0.580	0.015	0.596	0.737	0.020	0.756	3.607	4.959	0.264	0.007	0.271	0.108	0.003	0.110	0.000	0.382
PA31	0.009	0.000	0.009	0.012	0.000	0.012	0.000	0.021	0.004	0.000	0.004	0.001	0.000	0.001	0.000	0.006
PA42	0.006	0.000	0.006	0.012	0.000	0.012	0.001	0.019	0.006	0.000	0.006	0.000	0.000	0.000	0.011	0.017
T37B	0.006	0.000	0.006	0.006	0.000	0.006	0.000	0.012	0.001	0.000	0.001	0.001	0.000	0.001	0.005	0.007
T42	0.146	0.004	0.150	0.175	0.005	0.180	0.181	0.510	0.029	0.001	0.030	0.000	0.000	0.000	0.000	0.030
TOTAL	11.258	0.300	11.558	11.471	0.305	11.776	7.189	30.523	1.211	0.032	1.243	0.998	0.027	1.025	48.726	50.994
HLS EAST									HLS SOUTH							
B206B3	0.056	0.003	0.059	0.050	0.003	0.053	0.000	0.112	0.697	0.037	0.733	0.703	0.037	0.739	0.000	1.473
B427	0.040	0.002	0.042	0.036	0.002	0.038	0.000	0.080	0.217	0.011	0.228	0.221	0.012	0.233	0.000	0.461
B29	0.014	0.001	0.015	0.013	0.001	0.014	0.000	0.029	0.134	0.007	0.141	0.136	0.007	0.143	0.000	0.284
EC130	0.094	0.005	0.099	0.085	0.005	0.089	0.000	0.189	1.130	0.059	1.189	1.139	0.060	1.199	0.000	2.388
R22	0.001	0.000	0.001	0.001	0.000	0.002	0.000	0.002	0.010	0.001	0.010	0.009	0.000	0.009	0.000	0.019
R44	0.314	0.017	0.330	0.282	0.015	0.297	0.000	0.627	7.174	0.337	7.551	7.206	0.378	7.584	0.000	15.135
SC300C	0.604	0.029	0.623	0.770	0.038	0.808	0.000	1.441	6.434	0.342	6.775	6.268	0.332	6.600	0.000	13.375
TOTAL	1.123	0.056	1.180	1.237	0.064	1.300	0.000	2.480	15.795	0.834	16.629	15.682	0.826	16.508	0.000	33.136

Parafield Airport Limited
Building 18 Tigermoth Lane
Parafield Airport
SA 5108

Phone: +61 8 8307 5700
www.parafieldairport.com.au

