10 Environment Strategy

10.1 Introduction

PAL's vision and ongoing success is founded on building and maintaining the three pillars of responsible business practice – financial, environmental and social sustainability. To ensure that its business thrives and is managed today in a manner that promises to meet the needs of future generations, the company must respond positively and innovatively to today's local and global challenges.

In addition to providing aviation and non-aviation facilities, Parafield Airport contains areas of environmental and cultural value. PAL, as the airport-lessee, has a responsibility to ensure operation and development of the Parafield Airport is managed in an environmentally responsible manner.

The central focus of this Airport Environment Strategy is minimisation of the company's environmental footprint in balance with the other pillars of sustainable business, underpinned by a commitment to legislative compliance and driven forward by our desire to maintain a leadership position in environmental sustainability.

This chapter addresses the following environmental aspects and their management associated with airport activities, including statutory requirements under the *Airports Act 1996* for an environmental strategy:

- environmental management;
- compliance, including stormwater, soil and groundwater, ground noise, local air quality and hazardous substances;
- sustainable development including energy, climate change, water resources and waste; and
- land and heritage including biodiversity conservation, wildlife risk management and cultural heritage.

This chapter also addresses the assessment and management of potential environmental issues associated with the implementation of the Master Plan. The environmental compliance and sustainability goals outlined here can be achieved by effecting change of activities under the direct control of PAL, influencing change through collaboration and negotiation with key stakeholders, and guiding others to realise change through awareness and education.

10.1.1 Purpose

The purpose of this chapter is to:

- fulfil our vision for sustainable airport growth and development;
- ensure all identified environmental sustainability risks are appropriately managed;
- facilitate our objective of remaining an airport industry leader;
- realise continuous improvement in environmental sustainability performance and compliance; and
- build upon the achievements of the 2012 Sustainability Plan (Airport Environment Strategy).

Our Sustainability Policy forms the foundation for this Environment Strategy, which in turn is implemented through the Environment Management System. An Environment Management System, conforming to the requirements of ISO14001:2015, provides the framework linking environmental impacts, legal obligations, objectives and goals within this chapter and day-to-day management actions.

PAL, airport tenants, operators and contractors have responsibilities for ensuring compliance with this Environment Strategy. PAL is responsible for effectively managing the performance of activities and infrastructure under our direct control, and influencing where possible the approach to environmental management by our tenants, operators and contractors through engagement and consultation.

10.1.2 Achievements

PAL has achieved a number of significant environmental achievements since 2012. These achievements include:

- the first general aviation airport in Australia to achieve Level 2 accreditation for 'Reduction' in the Airports Council International Airport Carbon Accreditation Program underpinned by a revised Sustainability Policy and new Low Carbon Statement;
- 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;
- new state-of-the-art flight simulator centre opened by Flight Training Adelaide, providing an alternative training environment that reduces the circuit training requirement;
- connection made to City of Salisbury's recycled water network to irrigate community sporting grounds;
- PAL commenced revegetation of the Vernal Pools Conservation Zone upland areas;
- research and teaching partnership commenced with University of South Australia to study the Vernal Pools Conservation Zone;
- introduction of state-of-the-art wildlife hazard data capture technology and harassment tools;
- introduction of sophisticated air quality modelling and monitoring;
- ongoing review and implementation of the airport Fly Friendly program; and
- execution of seminar series for tenants on environmental sustainability guidelines and environmental compliance.

Further detail on these, and other achievements realised over the past five years are provided in Appendix E—Parafield Airport Sustainability Past Achievements (2012–2017).

10.2 Legislative and Policy Framework

Under the *Airports Act 1996* and with further reference to the *Airports Regulations 1997* PAL must develop and implement an Airport Environment Strategy which comprehensively sets out how adverse environmental impacts associated with both airport operations and other undertakings onsite are to be prevented, controlled or mitigated.

The Act establishes an environmental management regime that focuses on a cooperative approach; supporting and ensuring compliance with environmental standards at federally leased airports. Section 71 of the Act specifically covers environmental management requirements, amplified under S.5.02A and 5.02B of the Regulations.

This Environment Strategy includes the following as required by the Act:

- environmental management objectives for the airport;
- identification of the current environmental status of the airport including areas of environmental significance;
- sources of environmental impact associated with airport operations;
- studies, reviews and monitoring of current and future activities and a timeframe for these studies to be conducted and reported on (and timeframes for completion of those studies, reviews and monitoring);
- specific measures to prevent, control or reduce environmental impacts associated with airport operations and the timeframe for their completion; and
- details and outcomes of consultation on the preparation of the Strategy with stakeholders.

In compliance with the Regulations, this Environment Strategy covers:

- sites identified to be of indigenous significance after consultation with relevant indigenous communities and organisations and Commonwealth or State bodies;
- proposed environmental management for areas of the airport which are not used, or planned to be used, for airport operations; and
- necessary training for environmental management by persons employed by PAL or other major airport employers, including detail on proposed training.

The Airports (Environment Protection) Regulations 1997 outline the major obligations with respect to environmental matters on the airport site. These Regulations do not, however, apply to pollution or noise generated by aircraft (except ground running noise). The Commonwealth regulates these matters through the *Air Navigation (Aircraft Engine Emissions) Regulations 1995* and the *Air Navigation (Aircraft Noise) Regulations 1994* respectively.

Parafield Airport is on Commonwealth land and is therefore subject to the *Environment Protection and Biodiversity Conservation Act 1999*. This Act details requirements for the management of matters of national environmental significance such as threatened flora and fauna species, approvals of activities involving Commonwealth land and activities by Commonwealth agencies.

South Australian state legislation applies where Commonwealth legislation is silent. PAL will consider state legislation to achieve best practice environmental standards or where there is a material risk to off-airport environment.

In addition, various industry codes of practice, Australian Standards, relevant national and state environment protection measures and other guidelines are applicable to operators at the airport. As outlined in Chapter 7, there are a number of strategic and statutory documents prepared by the Commonwealth, State and Local governments that have been considered in this Master Plan and which may have relevance to the Environment Strategy.

10.3 Environmental Management System

The Environmental Management System maintained by PAL conforms to the requirements of ISO14001 and provides a structure for managing environmental impacts at Parafield Airport. By design the Environment Management System ensures a continuous improvement approach to environmental performance, as committed to by PAL in its Sustainability Policy and subsequently reflected in each revision of the Airport Environment Strategy.

Core elements of the Environment Management System, and how they support the implementation of this Environment Strategy, are described in the following sections. The continuous improvement cycle of PAL's Environment Management System is represented in Figure 10.1.

10.3.1 Policy

The Managing Director endorsed PAL's Sustainability Policy in June 2014. All new PAL employees, airport tenants, operators and contractors are introduced to the Sustainability Policy through inductions, newsletters, airport forums and periodic environmental awareness training programs. The policy is prominently displayed at PAL offices and is also available on the PAL website (www.parafieldairport.com.au). The PAL Sustainability Policy is provided in Figure 10.2

10.3.2 Planning

Objectives, goals and management actions are detailed in each section of the Airport Environment Strategy that once implemented ensure PAL meets the commitments stated in the Sustainability Policy. Objectives and goals were developed in accordance with PAL's Planning Procedure, with consideration given to the following:

- company vision;
- sustainability policy;
- legal requirements;
- significant environmental risks;
- views of stakeholders and the community;
- prevention of pollution;
- broader business objectives; and
- availability of resources.

Airport & Environmental Legislation	Airports Act 1996 (Cth) Airports Regulations 1997 (Cth)	Section 10.2
Commitment		
Environment Policy	PAL Sustainability Policy	Section 10.3.1
Planning		
Master Plan	Parafield Airport Environment Strategy Department Plans	Chapter 10
Implementation		
Environmental Management System	Legal Register Environment Risk Register Significant Environmental Risk Register Environment Management Plan Groundwater Monitoring Strategy Stormwater Quality Management and Improvement Plan Asbestos Management Plan Vernal Pools Conversation Zone Management Plan Heritage Management Strategy Landscape Guidelines Wildlife Hazard Management Plan Waste Management Plan Airport Emergency Plan Climate Adaptation Plan Carbon Management Plan Water Resources Management Plan Vickers Vimy Management Plan	Section 10.8 Section 10.9
Review		
Monitoring & Compliance	Environment Management Plan Monitoring Procedure Tenant and Construction Inspection Procedure Internal EMS Audit Procedure Non-Conformance Procedure	Section 10.3.4 Section 10.9

Figure 10.1 PAL Environmental Management Framework

Sustainability Policy

Our vision is to be a top tier Airport Business Centre in Asia Pacific, recognised for delivering exceptional outcomes to our customers, partners, shareholders and community.

We strive to deliver high quality facilities and services that are regarded as best in class, safe, secure and sustainable. As such Parafield Airport Limited (PAL) is committed to managing and developing Adelaide and Parafield Airports in a sustainable manner. We are already a leader in Airports Carbon Accreditation in Australia and our goal is to be Australia's most sustainable airport operator.

Our philosophy is to act in accordance with sustainable business principles and practices. In doing so we recognise that conducting business in a way that is environmentally, socially and economically responsible can enhance the success of our organisation. We believe that in choosing this path we can improve outcomes for our business, our stakeholders and the wider community for generations to come.

Our objectives are to:

- 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

We undertake to clearly communicate this policy to our stakeholders and to rigorously monitor our progress against meaningful indicators.

MYoung

Mark Young
Managing Director
June 2014

Figure 10.2 Sustainability Policy

An Environment Management Plan provides further detail to the Airport Environment Strategy and is reviewed at least annually. It is the central planning tool for implementing the Strategy goals and objectives detailing management actions, studies, routine tasks and monitoring activities with timeframes for their completion. The Environment Management Plan addresses management of sites used for both airport and non-airport operations.

Additional plans and procedures are developed and regularly revised to provide the necessary framework for more complex areas of environmental management. These are referenced in the relevant sections of the Environment Strategy and summarised in Appendix F.

10.3.3 Implementation

PAL staff and other airport operators and occupiers (including tenants) must take all reasonable steps to ensure that the Airport Environment Strategy is complied with. PAL's Environment Department maintains the system, drafts the plans and procedures and provides the necessary advice and guidance required for others at Parafield Airport to implement measures for controlling or minimising significant environmental risks.

Key outputs include standard operating procedures, safe work instructions, environmental guidelines, and training. PAL Environment Department staff possess tertiary qualifications in science, environmental management or engineering and have received training in environmental management system implementation and auditing. PAL environment and sustainability personnel also undertake ongoing training in various aspects of environmental management and sustainability.

PAL personnel and contractors are provided with training on sustainability and environmental issues via inductions and refresher modules training.

10.3.4 Checking and Monitoring

Tenant Risk Ranking and Inspections

All tenants are assigned an environmental risk ranking (Category 1, 2, 3 or 4) based on the potential of their business activities to cause harm, as defined in the *Airports Act 1996*. Each category is outlined in Table 10.1.

Airport Operator Inspections

In recognition that not every airport operator is a tenant, an assessment is undertaken of those individual operators' activities consistent with the categorisation of airport tenants, wherever practical. In addition, large construction projects are subject to environmental inspections by PAL. Contractors directly engaged by PAL for maintenance and capital works are included in the inspection schedule to be assessed for compliance with environmental standards.

Environmental Monitoring

PAL operates a broad monitoring program that collects data across those numerous areas, as listed in Table 10.2. Monitoring activities are detailed and scheduled within the Environment Management Plan and other specific area plans (e.g. Stormwater Quality Management and Improvement Plan). Those who carry out environmental monitoring must hold the appropriate professional qualifications relevant for the area of monitoring activity and demonstrate the processes and systems used conform to relevant Commonwealth criteria and industry standards.

Table 10.1 Tenant Environmental Risk Ranking Categories for Parafield Airport

Tenant Risk Rating	Definition	EMP Mandatory	Inspection Frequency
Category 1	Potential to cause serious environmental harm	Yes	Annual
Category 2	Potential to cause material environmental harm	Yes	Annual
Category 3	Potential to cause environmental nuisance	No	Three-Yearly
Category 4	Operations pose negligible environmental risk	No	As required

Note: As required - once-off tenant inspection in response to public enquiry or an incident.

Environment Management System Auditing

A robust environment management system requires regular checking. PAL achieves this through regular internal auditing of select system components by trained lead auditors in accordance with the Internal Environment Management System Audit Procedure and the Environmental Management System Audit Checklist. Internal audits are undertaken in accordance with the auditing frequency provided in the Environment Management Plan. A detailed external audit by an accredited ISO 14001 auditor of the full Environment Management System is scheduled every three years and the results reported to the Department of Infrastructure and Regional Development provide assurance as to the quality and rigour of PAL's environment program.

10.3.5 Reporting and Review

Detailed written reporting against all goals and management actions in the Airport Environment Strategy is provided regularly to PAL's Executive Committee, as required within ISO14001:2015. A comprehensive report demonstrating PAL's progress against all strategy goals, management actions and monitoring activities is provided annually to the Department of Infrastructure and Regional Development .

Table 10.2 Summary of Key Monitoring Activities

Stream	Area	Monitoring Activity	Frequency
Compliance	Ground Noise	Boundary noise Construction Noise	Tri-annually and as required As required
	Local Air Quality	Air Quality Stack Monitoring	As required As required
	Stormwater	Stormwater Quality (Tier 1) Stormwater Quality (Tier 2) Vernal Pool Water Quality	Bi-monthly (Apr-Oct) and as required As required Monthly (during hydro period)
	Soil and Groundwater	Soil and groundwater contamination (existing sites) Soil and groundwater contamination (new sites) Background groundwater quality	Annually and as required As required Annually
	Hazardous Substances	Asbestos volumes Hazardous substances storage National Pollutant Inventory	Annually Annually and as required Annually
Sustainability	Sustainable Buildings	Sustainability Performance Indicators (PAL buildings)	Quarterly
	Climate Change	Carbon Footprint (Scope 1,2 and 3)	Annually
	Energy	Energy consumption (PAL buildings)	Annually
	Water Resources	Water consumption (PAL buildings)	Annually
	Waste	Waste volumes (PAL buildings)	Quarterly
	Land and Heritage	Vernal pool flora/fauna survey Other flora/fauna surveys Indigenous artefacts surveys Built heritage surveys	Annually As required As required As required

Note:
As required - once-off monitoring/testing in response to development and construction activities, public enquiry, an incident, regular monitoring and audits.

Further, PAL reports pollution incidents, environment-related complaints, and management of contaminated sites to the Airport Environment Officer through monthly meetings and as required under legislation. Monitoring reports are provided to the Airport Environment Officer following receipt and review by PAL, with an audit of reports provided to the Airport Environment Officer undertaken during annual reviews of Airport Environment Strategy goals and objectives and prior to the provision of draft Airport Environment Reports to the Airport Environment Officer. PAL is cognisant of the regulatory requirement to report incidents and the exceeding of pollution criteria within 14 days.

10.4 Responsibilities

As the airport lessee company, PAL has a range of duties under the Act and Regulations and is required to identify sources of impact on the environment from airport operations and then implement programs to control, limit or prevent these impacts. Annual reporting to the Department of Infrastructure and Regional Development in this respect, along with progress on specific goals is required to ensure compliance. PAL has established a robust internal management structure as outlined in Table 10.3.

Table 10.3 Structure and Responsibilities for Implementation of the Sustainability Plan

Party	Responsibilities
Board of Directors (including Managing Director)	The environmental performance of PAL Periodic review of the PAL Sustainability Policy Allocation of resources to manage environmental sustainability issues
Executive General Manager Corporate	Ensuring that the roles/responsibilities for environmental compliance and sustainability management are defined and communicated Implementing communications plans
Executive General Manager Property	Incorporating and managing regulatory and other environmental conditions within leases and other property contracts Consideration of development against the Master Plan principles of Development Control
Enterprise Risk and Environment Manager	Preparing the Airport Environment Strategy Monitoring implementation of the Airport Environment Strategy Ensuring compliance with regulatory requirements Preparation of the Annual Environment Report Providing advice and specific training to staff, contractors and airport users
Sustainability Manager	Ensuring sustainability objectives are being met Monitoring implementation of the sustainability aspects of the Airport Environment Strategy Conducting stakeholder engagement
Managers	Daily management of environmental compliance sustainability issues Ensuring that operations comply with applicable legislation Identification of staff training needs Integration of environmental requirements into daily operations Staff environmental awareness
Staff	Reporting environmental hazards, incidents and stakeholder feedback Adhering to relevant EMS procedures Undertaking work in compliance with applicable environmental legislation Participation in training sessions
Airport Contractors /other Airport Users	Reporting environmental hazards, incidents and stakeholder feedback Adhering to relevant EMS procedures Undertaking work in compliance with applicable environmental legislation Participation in induction sessions Reporting environmental data to PAL

10.4.1 Airport Environment Officer

The Airport Environment Officer is appointed by the Secretary of DIRD, and is authorised under the Act to exercise powers regarding environmental issues conveyed through the legislation. Focusing on strategic environmental goals, the Airport Environment Officer liaises with PAL, airport lessees and operators to ensure management of the airport environment is in accordance with the Act and Regulations. This occurs through regular monthly meetings, site inspections, monitoring and reporting. In addition to this, the Airport Environment Officer may be asked to comment on Building Applications and suggest that the Airport Building Controller apply conditions to ensure that the environment is appropriately protected.

Airport Tenants and Operators

Parafield Airport hosts a wide variety of tenants and operators including airlines, aircraft maintenance and avionics facilities, private charters, retail, freight warehousing, aircraft refuelling, flight training and student accommodation facilities. Airport operators such as aircraft operators and contractors use the airport regularly as part of their business operations. A range of contractors operates on-airport participating in large-scale construction projects as well as conducting routine maintenance.

These stakeholders are key to environmental compliance and sustainability performance at the airport. PAL oversees their regulatory obligations and influences and guides their adoption of sustainable business practices through negotiation, co-operation and education. For example, tenants and contractors undertaking high-risk activities are required to develop and implement Environmental Management Plans. PAL has a positive and open relationship with its tenants and operators.

10.5 Sources of Environmental Impact

PAL is a dynamic environment supporting a range of aviation and non-aviation activities that can pose risk to the environment of varying degree, as outlined above. These activities impact, or have the potential to impact, the environment and are the primary basis for the objectives and goals described in this Environment Strategy (see Table 10.4). In addition to these activities, if a change of land use is proposed, consideration must be given to any potential environmental impacts from the past use and associated plans prepared for dealing with such environmental impacts. This may also need to be listed on the Airport Environmental Site Register.

Table 10.4 Sources of 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 Construction and fit out
Non-aviation Commercial Activities	Fuel storage and supply Commercial retailing 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
Historic Activities	Landfills Fuel storage and supply Aircraft maintenance Herbicide/pesticide application Fill importation

10.6 Environment Site Register

In accordance with the *Airports (Environment Protection) Regulations 1997* an Environment Site Register is maintained for PAL. The register identifies (by assigning a unique site number) the location of every site around the airport that has been subject to environmental monitoring, assessment, inspection, incident investigation and/or has been given Environmental Significance status. The features of each site, including contamination status, are

detailed in the register and the site location drawn onto an aerial map using Geographic Information System software. Data stored includes tenant risk rankings, nature of operational activity, contamination status, past and current land uses and environmental documentation.

10.7 Communication and Consultation

Parafield Airport is located within the City of Salisbury and surrounded by residential, recreational and industrial zones. PAL has continued to communicate and share environmental information with the community and key stakeholders through various forums including the Parafield Airport Consultative Committee, Tenant Environment Group, publications and the Parafield Airport website.

Quarterly Parafield Airport Consultative Committee meetings involving Commonwealth and State Government, local councils, tenants, resident groups and other stakeholders are held to discuss a range of topics including noise management, community issues and environmental compliance. Regulatory issues are discussed between PAL and the Airport Environment Officer at regular monthly meetings.

Incident reporting forms part of the Environment Management System and is incorporated into the regular duties of PAL staff. Tenant and community feedback on environmental issues such as ground-based noise, odour and dust, as well as general comments and compliments, are recorded in the company's dedicated intranet database and addressed as appropriate.

Known and potential occurrences of pollution, such as hazardous substances spills, are reported in accordance with the Airport Emergency Plan, recorded in the PAL Incident Register and, if required, reflected in the Environment Site Register. An incident investigation process is used to identify the causes and guide future management practices to prevent their recurrence and reduce the risk of environmental pollution.

PAL staff are provided with a general environmental management induction, supplemented by targeted in-house training in areas such as spill response, incident reporting and hazardous substances management. Other methods used to communicate environment-related information to staff include intranet announcements, workshops, presentations, toolbox talks, and notice boards.

Other airport users are required to undertake general induction training that includes environmental content, prior to gaining their Australian Security Identification Cards.

Consultation with State Government, local Councils, tenants and neighbors occurred through the principal airport consultative forums—namely the Airport Planning Coordination Forum and Parafield Airport Consultative Committee—in the preparation of this Environment Strategy.

Regular meetings with other stakeholder groups such as community groups and peak industry associations also provide a platform for exchanging ideas on environmental issues that have informed the development of this Strategy. PAL's community feedback system provides critical information on the public's perception of environmental performance and assists in validating PAL's goals and actions.

10.8 Strategy Objectives

The Environment Strategy, as part of the Parafield Airport Master Plan, adopts a 20-year planning horizon that in turn offers greater transparency as well as improved continuity between each 5-year Plan.

Long-term objectives for each area of environmental compliance and sustainability are set out in Table 10.5 and are detailed in Appendix F—Environment Strategy Objectives, Goals and Management Actions. They provide the focus of the environmental program over the next 20 years and are in alignment with PAL's vision and Sustainability Policy. PAL has identified specific and, where possible, measurable 5-year goals and supporting management actions, to meet these objectives, which are tabulated under each of the areas addressed in the following sections.

10.9 Compliance Program

Compliance activities provide the foundation to PAL's Environment Program. The following risk areas including ground noise, local air quality, stormwater,

soil and groundwater, and hazardous substances are core areas of compliance management and apply to all areas of airport land. Compliance is not, however, a static goal and is viewed through the lens of continuous improvement. Goals and management actions are provided in Table 10.6 and build upon the achievements of previous Airport Environment Strategies.

10.9.1 Ground Noise

PAL has a critical role to play in managing noise impacts on the local community and on-airport users from ground-based activities whilst also being an active and influential stakeholder in addressing noise impacts from aircraft in flight. Issues relating to aircraft noise from current operations and proposed changes to aviation infrastructure are detailed in Chapter 5—Aircraft Noise Metrics.

The major contributors of noise and vibration arising from airport ground-based activities include aircraft ground-running (engine testing), parked aircraft, ground vehicles, plant and equipment, and construction activities.

Repeated noise monitoring surveys focusing on the residential zone adjacent the western airport boundary have showed noise levels from ground-based operations to be well below relevant regulatory

Table 10.5 Summary of Strategy Objectives

Stream	Area	Objectives (to 2037)
Compliance	Ground Noise Local Air Quality Stormwater Soil and Groundwater Hazardous Substances	Operate and develop Parafield Airport in a manner that complies with relevant regulatory and other standards whilst striving for continuous improvement
Sustainability	Sustainable Buildings	Develop Parafield Airport through quality buildings of contemporary, sustainable design Manage PAL facilities in a manner that minimises cost and natural resource use
	Climate Change	Minimise PAL's carbon footprint Influence and guide other airport users to reduce their carbon footprint Adapt to future climate change impacts
	Energy	Minimise future electricity load growth through energy conservation measures and renewable energy
	Water Resources	Minimise the proportion of potable water consumption at Parafield Airport
	Waste	Increase the proportion of Parafield Airport waste diverted from landfill
	Land and Heritage	Conserve places of significant natural, indigenous and heritage value Enhance biodiversity, in particular within the Vernal Pools Conservation Zone Mitigate the risk of flooding
	Community Partnerships	Be a good neighbour to the surrounding residents and businesses Support economic development in northern Adelaide Increase outreach with tenants and the community related to sustainability

Table 10.6 Compliance and Continuous Improvement Goals and Management Actions

Objective (by 2037)		
Operate and develop Parafield Airport in a manner that complies with relevant regulatory and other standards whilst striving for continuous improvement		
Goal (2017 – 2022)	**Management Actions (2017 – 2022)**	**Timeframe**
Strive for 100% compliance for developments and airport activities with relevant noise regulations	Continue to conduct regular boundary noise monitoring	Ongoing
	Continue to model noise impacts for proposed new developments and implement mitigation strategies where necessary	Ongoing
	Continue to include relevant noise mitigation in Construction Environmental Management Plans and conduct inspections	Ongoing
	Continue to enforce the PAL Ground Running Policy	Ongoing
	Continue to engage with the local community on noise issues	Ongoing
	Continue to provide guidance to stakeholders on noise mitigation strategies	Ongoing
Strive for 100% compliance for developments and airport activities with relevant air quality regulations	Finalise and implement air quality monitoring strategy	Ongoing
	Continue to collect air emissions data from point sources as required	Ongoing
	Continue to maintain a register of ozone depleting substances and phase out where feasible	Ongoing
	Continue to provide guidance to stakeholders on air quality management	Ongoing
Maintain and, where feasible, improve stormwater quality	Continue to regularly monitor stormwater quality	Ongoing
	Identify sources of pollution as per the SQMIP and mitigate sources of pollution where identified	2020
	Continue to provide guidance to stakeholders on stormwater quality improvement strategies	Ongoing
	Continue to prevent stormwater pollution through implementation of the hazardous substances management actions	Ongoing
Maintain and, where feasible, improve soil and groundwater quality	Continue to conduct regular groundwater monitoring	Ongoing
	Continue to implement priority actions from the Contaminated Site Risk Register and review the risk register in accordance with 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 PAL Environmental Site Assessment Guidelines	Ongoing
	Continue to provide guidance to stakeholders on contamination prevention and remediation strategies	Ongoing
Strive for 100% compliance for hazardous substance storages, handling and disposal	Continue to store and manage hazardous substances and dangerous goods in accordance with regulatory requirements	Ongoing
	Continue the environmental inspection program of tenants and construction sites	Ongoing
	Continue to implement emergency response plans for hazardous substances spills	Ongoing
	Continue asbestos audit and removal program	Ongoing
	Continue to provide guidance to stakeholders on hazardous substances management	Ongoing

criteria. Nonetheless, PAL continues to implement controls to minimise potential off-airport impacts. Ground running (engine testing) activities undertaken by aircraft operators are strictly controlled through monitoring and enforcement of PAL's Engine Ground Running Policy. Similarly, operations and construction activities are controlled through tenant or construction environment management plans and leases, where applicable, and monitored through a program of regular site inspections.

As outlined in the Land Use Planning chapter (Chapter 7), development is proposed for the Enterprise and Business Precincts, which are adjacent to the southern and western airport boundaries respectively. To limit residential impacts from proposed aviation, commercial freight, warehousing and industrial activities that may contribute to the airport noise profile, noise modelling has previously been undertaken (consistent with the Cross Keys Major Development Plan (PAL 2004)), and further validation modelling may be conducted as development progresses. If required, attenuation measures can then be incorporated into these developments at the design phase to ensure operations comply with both *Airports (Environment Protection) Regulations 1997* and State regulatory noise criteria. Once operational, regular checks of developments will occur in the form of tenant inspections and, if required, noise monitoring.

PAL is committed to engaging with the community on noise issues, as demonstrated in 2010 with the distribution of over 58,000 brochures to local residents on aircraft noise. A pro-active engagement and consultation program will be undertaken ahead of projected development timeframes to specifically address ground-based noise concerns.

10.9.2 Local Air Quality

Under the Regulations, PAL is responsible for managing air emissions generated by ground-based activities within the airport boundary. Air quality outside the boundary is subject to the provisions of the State Environment Protection Act 1993. Air emissions generated by aircraft are regulated under separate legislation and are the responsibility of Airservices Australia.

Parafield Airport is situated within a highly urbanised area surrounded by residential, recreational and industrial zones. The South Australia Environment Protection Authority has monitored air quality in the northern Adelaide airshed over a decade, at sites in Elizabeth Downs and Hampstead, for ambient levels of key pollutants, namely carbon monoxide, nitrogen dioxide, ozone, sulphur dioxide and particles less than 10 micron in diameter. Data published to-date by the Environment Protection Authority show air quality in the airshed that encompasses Parafield Airport meets the relevant *National Environment Protection (Ambient Air Quality) Measure 2003* criteria.

PAL is responsible for monitoring air emissions from ground-based activities such as refuelling, painting, cleaning, machining, mechanical maintenance, generator use, commercial cooking and construction. However, PAL is committed to a beyond-comlpiance approach to air quality.

A desktop assessment of emissions from aviation and related ground-based activities commenced in 2017, which will underpin a broad, documented air quality management ans mintoring strategy.

PAL monitors the dust mitigation activities as detailed in construction environment management plans and monitors compliance during construction inspections.

Emissions from minor point sources, such as paint shops, machine shops and commercial kitchens, are extracted and filtered prior to discharge.

Aviation and industrial developments proposed for the Runways and Enterprise Precincts may incorporate paint and/or machine shops in their design. Extraction systems will be reviewed by PAL against Environment Protection Authority requirements and relevant criteria during the building application process and, if necessary, modelled for pollutant contribution to local ambient air quality.

10.9.3 Stormwater

Parafield Airport lies at the downstream end of several regional 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.

PAL is committed to improving stormwater quality and consequently the ecological health of the airport's waterways by supporting aquatic ecosystems, as detailed in the PAL Stormwater Quality Management and Improvement Plan. Implementation of this plan, which includes monitoring and assessment of the ecological health of the open drain network, installation of gross pollutant traps, drain revegetation, and adoption of water sensitive urban design principles, will allow 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. High-risk tenants are also regularly inspected to check compliance of hazardous substances storages and other potentially polluting activities. New aprons proposed in the Runways Precinct may pose an increased risk of impacting quality of stormwater run-off from refuelling and aircraft washing. Spill response and clean up in accordance with the Airport Emergency Plan is intended to minimise environmental impacts from fuel incidents and tenants are inspected for conformance to PAL's Aircraft Washing Guidelines.

Parafield Airport monitors stormwater for pollution in two areas: general surface water (runoff from sealed surfaces), and rainwater captured within the Vernal Pools Conservation Zone. The latter is addressed in Section 10.14 – Land and Heritage Strategy.

A two-tier structure is applied to stormwater monitoring, as detailed in the Stormwater Quality Management and Improvement Plan. Tier 1 sampling involves the collection of monthly composite samples from April through October at the airport's primary stormwater discharge point and the results compared against Commonwealth and State water quality criteria. 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).

10.9.4 Soil and Groundwater

Managing contamination is an ongoing priority and all practicable measures are undertaken to minimise the environmental and health risks posed by historic and new soil and groundwater contamination. High-risk sources include hazardous substance leaks and spills, principally those associated with aviation fuel storage and transport, and imported fill material.

The majority of operations that take place at the airport are on impervious surfaces, which greatly reduce the likelihood of contamination. Above ground hazardous substances storages are required to comply with relevant regulatory standards and are regularly inspected. There is a requirement for an integrity testing program to be implemented for underground storages, including the installation of monitoring wells. A comprehensive emergency response plan exists that is routinely practiced and reviewed.

Spill response and cleanup forms an integral part of the Airport Emergency Plan that is in place to minimise environmental impacts from such events. New hazardous substances stores will be assessed during the building approval process and then regularly inspected to ensure compliance with regulatory requirements. The proposed developments require excavation works that could potentially expose existing contamination, whether from hazardous substances or asbestos-containing materials. In this situation, contamination will be managed through implementation of construction environment management plans. Imported fill must also be certified clean in accordance with PAL's Waste Fill Importation Guidelines.

A relocated petrol station and vehicle wash facility possible for the Commercial Precinct would have underground and above ground storage tanks for fuel. A range of mitigation measures required to limit impacts on local soil and groundwater quality include tank integrity programs, installation of groundwater monitoring wells and compliance with relevant Australian Standards, as managed through the building approval process. Any simultaneous

decommissioning of the existing facility will be managed in accordance with national standards to achieve compliance with the scheduled criteria in the Regulations.

PAL's building approval process triggers the requirement for an environmental site assessment to be undertaken prior to development, upon a change in leasing arrangements or a change inland use. A suite of guidelines on the requirements for undertaking an environmental site assessment, importing clean fill onto airport, and fuel management are available to all tenants and contractors.

PAL oversees a contaminated site management program involving regular monitoring in accordance with the *National Environment Protection (Assessment of Site Contamination) Measure 1999* and liaison with responsible tenants on the progress of soil and groundwater monitoring programs and remediation action plans. Groundwater wells have been placed at specific locations (by either PAL or tenants) for the purpose of monitoring contamination levels. PAL has installed additional wells at locations suited to providing baseline groundwater quality data for comparison against known contaminated sites.

The PAL Contaminated Site Risk Register is the primary tool used by PAL to prioritise and manage contamination risks. Figure 10.3 illustrates the contaminated site management process adopted by PAL in the Contaminated Site Management Plan. Both the PAL Contaminated Site Risk Register and Contaminated Site management Plan include consideration of suspected/potential contamination or pollution and these sites are managed alongside known contaminated sites in accordance with their risk ranking.

PAL liaises with tenants about newly identified contamination, educating them on the various components of contaminated site management such as monitoring, environmental and/or health risk assessments and remediation action plans, and tracking progress and implementation. The status of relevant sites is captured and regularly updated in the airport's Contaminated Site Register.

Per- and Poly-fluoro Alkyl Substances

Due to the historical use of firefighting foams containing per- and poly-fluoro alkyl substances (PFAS) between the early and late 1980s by a predecessor of Airservices Australia, a risk of soil and groundwater PFAS contamination exists at Parafield Airport. The Commonwealth is determining which current Commonwealth agency is responsible for the assessment and management of PFAS contamination at Parafield Airport. In the interim, PAL has undertaken its own soil and groundwater testing. The PFAS Human Health and Ecological Risk Assessment completed in May 2017 suggests that risks to the health of airport staff, visitors and neighbouring communities are low. PAL will continue to work with the Department of Infrastructure and Regional Development and other responsible parties to assess and manage potential PFAS contamination risks in accordance with guidelines.

10.9.5 Hazardous Substances

Hazardous substances, primarily aviation fuels, are used across the airport on a daily basis and have the potential to cause significant environmental and health impacts if they are not appropriately stored and managed.

Above ground hazardous substances storages, and associated spill response equipment, are regularly inspected for compliance with relevant regulatory standards, and underground storages must be subject to an integrity testing program. Details of all storages are included in the airport's Hazardous Substances Register.

Minor spills are routinely reported to PAL however cleanup is the responsibility of individual tenants and other airport users. PAL staff and key tenants receive spill response training and spill response equipment is kept in designated airside and landside locations. A comprehensive airport emergency response plan exists for large spill incidents.

Asbestos-containing materials are regularly inspected and managed in accordance with State regulations. An Asbestos Register is maintained for all PAL-owned buildings and selected materials are removed on a risk basis. Any demolition works are preceded by an asbestos audit by qualified contractors and occur in strict accordance with State regulatory standards prior to works commencing.

PAL maintains records of all ozone depleting substances on airport and staff hold relevant licences for handling refrigerants. PAL has identified no

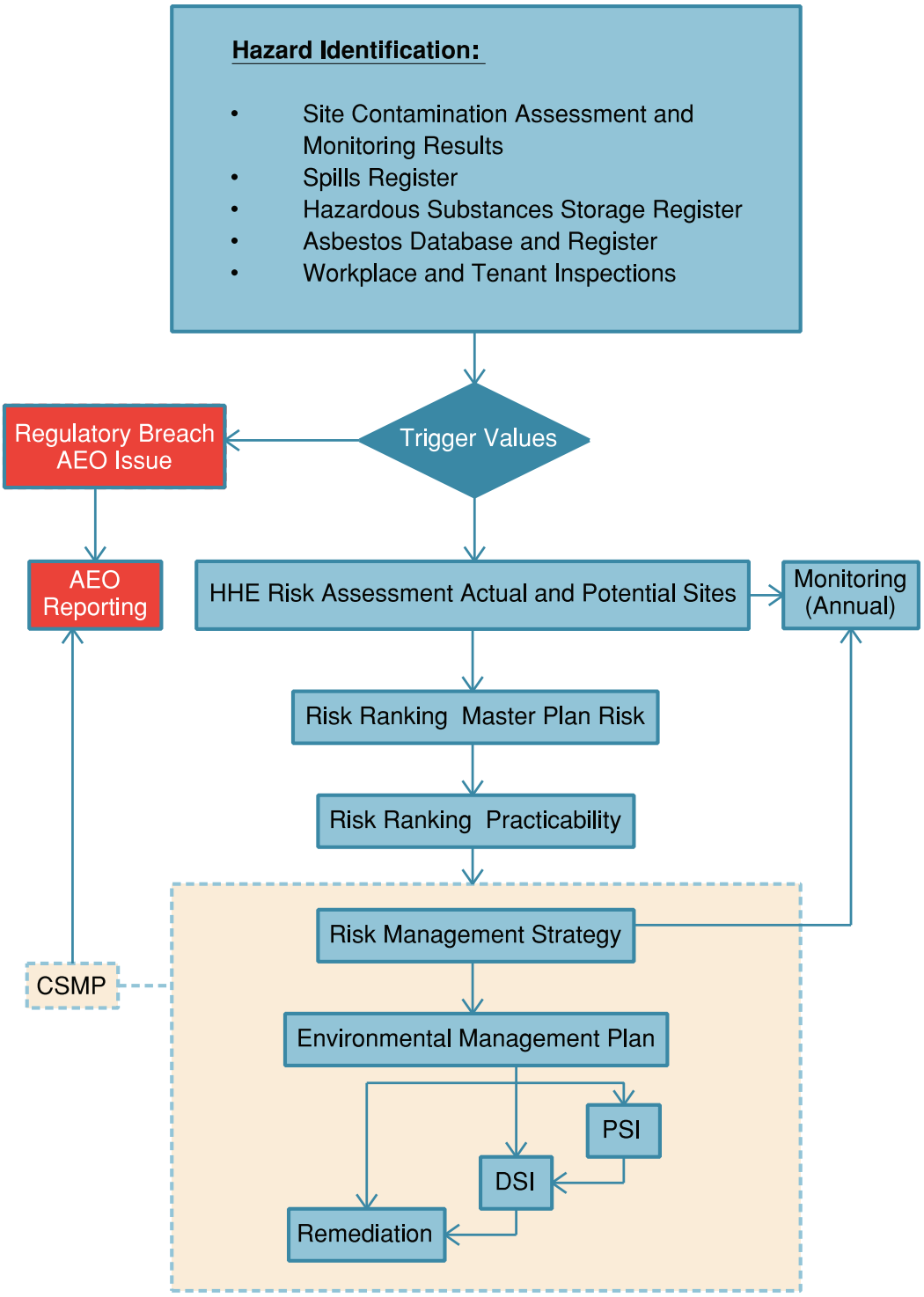

Figure 10.3 Contaminated Site Management Process Flowchart

products containing Polychlorinated Biphenyls to date, however, assessments may be undertaken as required. Compliance and continuous improvement goals and management actions have been outlined in Table 10.6.

10.10 Sustainable Development

Environmentally sustainable development is at the core of our vision for Parafield Airport and is therefore a central focus of our Environment Strategy. The impact that we have on the environment can have local, regional or even global consequences. Excess resource consumption, waste generation, degradation of biodiversity and heritage values, and pollution of land, air and waterways are all potential impacts that thoughtful, planned infrastructure design, construction and operation can minimise or eliminate.

At Parafield Airport, PAL intends to apply sustainable design thinking to each level of airport planning, development and operation. At the macro level, overarching design of the airport's built environment will seek to address in dynamic balance the principles of financial, environmental and social sustainability. Economic prosperity, strengthening links between the airport and surrounding community and striving, in consultation with stakeholders, to harmonise on-airport and off-airport planning will help foster positive, durable relationships between people and the airport. At the development level, these principles will manifest in the form of innovative, efficient and quality buildings. At the micro level, PAL is committed to implementing a change in its routine operations. Purchasing and process-related decisions will pass through a sustainable design filter, ensuring a mindful approach to airport management and reduced environmental impacts.

Sustainable development goals and management actions are outlined in Table 10.7. Measuring various components that make up a development's environmental footprint provides the foundation for better asset design and investment decisions and more efficient operation and maintenance. Metrics for building design and operation are increasingly used in capital development and asset management and can be applied to many developments proposed for Parafield Airport such as warehouses, hangars and workshops. PAL intends to adopt such metrics to benchmark design and operation of PAL owned and managed assets against internal targets and, where relevant, external rating systems. A process is already underway to establish quantifiable Sustainability Performance Indicators and Sustainability

Table 10.7 Sustainable Development Goals and Management Actions

Objective (by 2037)		
Develop Parafield Airport through quality buildings of contemporary, sustainable design Manage PAL facilities in a manner that minimises cost and natural resource use		
Goal (2017-2022)	**Management Actions (2017-2022)**	**Timeframe**
Design, construct and manage PAL assets to meet targets aligned to key Sustainability Performance Indicators	Encourage and facilitate design and construction of buildings and infrastructure beyond Building Code of Australia requirements where feasible	Ongoing
	Measure PAL's asset operation in alignment with Sustainability Performance Indicators	Ongoing
	Create a reporting tool to convey asset management results	2020
	Improve building performance through cost-effective improvements to operation and maintenance practices	Ongoing
	Encourage the adoption of green leases where appropriate	2020
Embed principles of stewardship into corporate processes and through the supply chain	Encourage customers, partners and suppliers to adopt sustainability principles and practices	2020
	Promote stewardship initiatives throughout the supply chain through preferred 'suppliers of choice'	2020
	Incorporate Sustainability Performance Indicators into standard works contracts	2022

Performance Targets to enable us to assess the environmental sustainability of current and future PAL buildings.

For larger scale development zones, PAL will continue to draft and update development design guidelines that not only include built form and amenity provisions, but environmental sustainability principles directed at energy efficiency (beyond the mandated requirements within the Building Code of Australia, where feasible) and building orientation and configuration appropriate for the age and type of development.

As the airport grows, significant opportunities will also exist for developers and tenants to demonstrate sustainability initiatives. Over the next five years, PAL will encourage and influence developers to strive for green building standards and employ, as a minimum, the sustainable design elements embedded in the Principles of Development Control (see Section 6) and relevant PAL Development Design Guidelines.

10.11 Energy and Climate Change

10.11.1 Energy

Parafield Airport is a relatively modest consumer of energy resources. Electricity in airport buildings is predominantly used for heating, cooling and lighting. Of these buildings, only a small percentage are owned and occupied by PAL; the remainder either leased to, or owned and occupied by tenants. Reduced energy consumption goals and management actions are outlined in Table 10.8.

10.11.2 Climate Change

The Australian government has committed to reduce greenhouse gas emissions to 25 per cent below 2000 levels by 2020. The *National Greenhouse Gas and Energy Reporting Act 2007* was subsequently established to provide a framework for mandatory corporate carbon reporting. The global trend is towards a carbon-constrained future that demands that businesses address the various risks associated with climate change. A prudent carbon management program addresses:

- carbon risk (the potential financial and business impact associated with a carbon constrained economy); and
- climate risk (the potential impact on assets and operations associated with more variable climate).

To manage carbon risk PAL is committed to continue measuring emissions through its greenhouse gas accounting system and reduce its company carbon footprint through implementation of its Carbon Management Plan, verified externally under the Airports Council International Airport Carbon Accreditation Scheme. PAL was the first Australian airport to be awarded Level 2 (reduction) under the scheme. PAL's challenge is also to educate and guide stakeholders on strategies that support the dual aims of tempering their appetite for energy and realising commercial growth.

PAL developed the first Climate Adaptation Plan by an Australian airport and will look to continue implementing the strategies it contains to address climate risk, as well as align this with regional climate plans under development by local and State governments. Reduced carbon footprint goals and management actions are outlined in Table 10.9.

10.12 Water Resources

Recent drought, uncertainty with respect to South Australia's long-term water availability and rising supply costs has led to water emerging as a priority issue for PAL. Security of water supply and best practice water conservation are critical goals, building on our solid track record of leadership in water sensitive urban design.

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. Where feasible, PAL is committed to securing non-potable water supplies for new and existing developments.

Developments with a large roof area, such as warehouses and hangars, provide opportunity for rainwater capture and reuse, supplementing recycled water supplies from the existing network. The integration of water sensitive urban design principles in new development design and adoption of the airport's Landscape Guidelines will also be promoted.

Table 10.8 Reduced Energy Consumption Goals and Management Actions

Objective (2037)			
Minimise future electricity load growth through energy conservation measures and renewable energy			
Goal (2017-2022)	**Management Actions (2017-2022)**	**Responsibility**	**Timing (years)**
Reduce electricity consumption in buildings owned and occupied by PAL (10% of 2017 levels by 2022)	Implement Carbon Management Plan and maintain ACI Level 2 accreditation	PAL/ Contractors	2020
	Implement Carbon Management Plan and obtain ACI Level 3 accreditation	PAL/ Contractors	2020
	Continue to assess feasibility of renewable energy installations	PAL/ Contractors	2020
Increase proportion of PAL's electricity consumption from on-airport renewable energy generation (40% of total by 2022)	Install battery storage where economically feasible	PAL/ Contractors	2022
Encourage tenants to implement energy efficiency measures	Develop tools and provide guidance to tenants on techniques for measuring emissions and reducing energy consumption	PAL/State Government	2020
	Run specialist information sessions on opportunities for purchasing green energy and participating in carbon off-set schemes	PAL/Tenants	2022
	Provide support to tenants who are filing funding applications for energy efficiency projects	PAL/Tenants	2022

Table 10.9 Reduced Carbon Footprint Goals and Management Actions

Objective (2037)			
Minimise PAL's carbon footprint and Influence and guide other airport users to reduce their carbon footprint Adapt to future climate change impacts			
Goal (2017-2022)	**Management Actions (2017-2022)**	**Responsibility**	**Timing (years)**
Reduce PAL's company carbon footprint (30% of 2017 levels by 2022)	Continue annual measurement of the company carbon footprint	PAL	Ongoing
	Detail and enforce minimum energy efficiency standards for all equipment, including motor vehicles, in the company purchasing policy	PAL	2020
Encourage and, where feasible, facilitate tenants to measure and reduce their carbon footprint	Support and facilitate fuel reduction initiatives by aircraft operators where possible	PAL/Operators	2020
	Encourage adoption of cleaner lower carbon aircraft	PAL/Operators	2022
Improve PAL's preparedness against the likely impacts of climate change on infrastructure and operations	Continue to implement the Climate Adaptation Plan	PAL	2020
Strive to increase the proportion of airport visitors and tenants using alternative forms of transport or changing their transport habits	Incorporate, where required, new pavement and building standards into development and construction guidelines	PAL	2022
	Develop a Bicycle/Pedestrian Access and Safety Plan for the airport (dependent on integration with Council shared-use pathway schemes)	PAL	2020

Table 10.10 Reduced Potable Water Consumption Goals and Management Actions

Objective (2037)			
Minimise the proportion of potable water consumption at Parafield Airport			
Goal (2017-2022)	**Management Actions (2017-2022)**	**Responsibility**	**Timing (years)**
Reduce mains water consumption in buildings owned and occupied by PAL (10% of 2017 levels by 2022)	Continue to seek opportunities for implementing water efficiency and water sensitive urban design principles	PAL/Contractors	Ongoing
	Continue to update the water meter network to improve data accuracy, where required, and identify leaks	PAL/Contractors	Ongoing
Increase the number of connections made to non-potable water sources, where practicable	Continue to seek to connect irrigation to City of Salisbury's recycled water network	PAL/Council	2020
	Encourage new developments to connect to the recycled water network	PAL/Developers	2020
	All new developments to incorporate water sensitive urban design features such as rainwater tanks or other water harvesting systems	Tenants/ Developers	2020
Increase the number tenants implementing water efficiency measures, where possible	Continue to identify high water-use tenants	PAL	Ongoing
	Continue to develop tools and provide guidance to tenants on techniques for measuring and reducing water consumption	PAL/Tenants	Ongoing
	Run specialist information sessions on opportunities for water harvesting and efficiency	PAL/Tenants	Ongoing

Water use objectives and goals are included in Table 10.10.

10.13 Waste

PAL embraces the waste management hierarchy espoused by Zero Waste South Australia – in order of highest to lowest efficacy, and therefore priority, is avoidance, reduction, reuse, recycle, recovery, treatment and disposal.

Waste avoidance has been achieved within PAL through numerous initiatives. Recycling programs exist for paper and cardboard, printer cartridges, waste oil, batteries, drink containers, construction waste and food waste. Further reduction of waste to landfill can be achieved through the development and implementation of a waste management strategy and planned introduction of a green purchasing policy. PAL works collaboratively with tenants to reduce waste, and seeks to positively influence their environmental performance (Table 10.11).

Table 10.11 Increased Waste Diversion Goals and Management Actions

Objective (2037)			
Increase the proportion of airport waste diverted from landfill			
Goal (2017-2022)	**Management Actions (2017-2022)**	**Responsibility**	**Timing (years)**
PAL Management Centre to remain a zero-waste facility by 2022	Assess options for recycling of dumped waste	PAL/Contractors	2020
	Continue to run a Waste Management Strategy	PAL	2022
Improve environmental purchasing program	Include green principles in revision of PAL procurement process	PAL	2020
	Run a staff education campaign on green purchasing	PAL	2020
Increase waste reuse and recycling, where feasible	Run a tenant awareness campaign on the opportunities and benefits of effective green purchasing and waste management	PAL/Tenants	2020
	Continue to support airport tenants to expand their waste avoidance, reuse and recycling programs	PAL/Tenants	Ongoing
	Continue to encourage recycling and rejuvenation of demolition and construction waste	PAL/Contractors	Ongoing
	Develop guidelines on recyclable construction materials	PAL	2020

10.14 Land and Heritage Strategy

10.14.1 Sites of Significance

Conservation

There is one site of environmental significance at Parafield Airport, the Vernal Pools Conservation Zone (VPCZ). The VPCZ hosts the last known array of vernal pools within metropolitan Adelaide. The pools as a habitat were found to have high wetland values, hosting significant vegetation to both the region and the State and uncommon aquatic fauna and meeting at least one important wetland criterion listed by the Australian and New Zealand Environment and Conservation Council (ANZECC). An example of a vernal pool is shown in Figure 10.4.

Indigenous

Large areas of the airport have been surveyed in previous years and from which two sites of indigenous significance were recorded, both containing indigenous artefact scatters, and both situated within the VPCZ in the Bennett Precinct (PAL 2004).).Their location within the Conservation Zone will ensure the scatters continue to be protected from disturbance.

Heritage

There are no sites of heritage significance within Parafield Airport under ownership or control of PAL that are listed or that qualify for listing on the Commonwealth Heritage Register.

Figure 10.4 Example of a Vernal Pool

The air traffic control tower (Figure 10.5), which is owned and occupied by Airservices Australia, has been added to the Commonwealth Heritage List (DEE, 2016) following a nomination from Airservices Australia. PAL has developed a Heritage Strategy in consultation with key government stakeholders that will guide future management of infrastructure with heritage value.

10.14.2 Biodiversity and Conservation

Prior to European settlement the region around Parafield Airport was likely to have consisted of grassy plains interspersed by riparian woodlands hugging the Little Para and Gawler Rivers. Later referred to as the Northern Adelaide Plains, these were dominated by Wallaby (*Austrodanthonia*) and Spear (*Austrostipa* spp) grasses, which gave way to samphire shrublands to the west and eucalypt woodlands (*Eucalyptus porosa*) to the east.

Despite drastic modification of the Northern Adelaide Plains landscape, Parafield Airport has retained some native 'threatened' habitat, namely the last known population of vernal pools. The pools fill with rainwater in winter and dry out over summer, resulting in a specific environment that requires specialist adaptations by their flora and fauna populations.

Figure 10.5 Air Traffic Control Tower

The Conservation Zone hosts five species with State conservation ratings and 17 with a regional conservation rating, including Black Cotton Bush (*Maireana decalvans*) and a number of other vernal pool specialist species. The pools themselves support several species of native birds, reptiles, amphibians and unusual invertebrates, such as the Shield and Clam Shrimps. A recent ecological health assessment—following higher than average spring rainfall in 2016—confirmed the diversity of flora, invertebrate and bird species that exists across the pools as well as the ongoing challenges faced in managing the Conservation Zone, particularly controlling invasive weeds (Delta Environmental Consulting 2016).

The pools and surrounding uplands are preserved within the VPCZ, contained within portions of the Bennett and Enterprise Precincts. They are managed in accordance with the VPCZ Management Plan based upon the findings of extensive monitoring and impact mitigation studies.

As detailed in the VPCZ Management Plan, PAL enlists the specialist services of Conservation Volunteers Australia to plant tubestock, control weeds, collect litter, monitor habitat health, and mobilise help from their extensive pool of volunteers. Uni SA staff and students assist the program by conducting annual monitoring of pool flora and water quality.

The VPCZ encompasses all but one pool (Pool 11), located in the Runways Precinct. Given its location and highly degraded, low biodiversity status it has been classified as a control pool and, under the current monitoring regime, used for benchmarking the remediation success of other pools in the VPCZ (Delta Environmental Consulting 2006c). Whilst situated outside the VPCZ, the pool will continue to be protected and monitored. Its status as a control pool is reflected in the VPCZ Management Plan and managed accordingly. The future 03-21R runway extension will necessitate an extension of the security fence, which will place this pool within the secure airside environment and which may impact the ongoing retention of this pool.

10.14.3 Wildlife Risk Management

Many bird species frequent the airport grasslands, including those in the VPCZ, such as White-fronted Chats, Stubble Quails and Fairy Wrens. Of the species recorded, none are listed in the *Environment Protection and Biodiversity Conservation Act 1999* or the *National Parks and Wildlife Act 1972*, with the exception of the Peregrine Falcon.

PAL balances the dual interests of aviation safety and wildlife conservation through implementation of both the intended VPCZ Management Plan and its Wildlife Hazard Management Plan. The latter is required under the *Civil Aviation Safety Regulations 1998* and regulated by CASA.

10.14.4 Archaeology

In the Bennett Precinct only, State Government archival information identifies several local archaeological (Kaurna) sites, including isolated artefacts, stone artefact scatters, burial and 'mound' sites (often containing human burials, animal remains, oven stones and stone artefacts). Such records point to a rich and varied history of occupation by the Kaurna people across the region, which included a practical and cultural relationship with the ephemeral creeks, swamps and basins in and around the current airport site.

Two artefact scatters and six isolated artefacts have previously been found on airport. The artefact scatters consist of quartz flakes, deemed of social importance to the indigenous community, and are protected within the VPCZ. Their specific locations are recorded in the Environment Site Register and procedures are in place to ensure that sites of indigenous significance are appropriately protected from airport operational activities and new developments.

10.14.5 Built Heritage

Parafield Airport also has a vibrant post-European settlement history, marked by several distinct development periods: establishment as a civilian aviation facility (1927-38); a WW2 defence training facility (1939-44); South Australia's commercial aviation gateway; and a center 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 and is listed on the Commonwealth Heritage Register (DEE 2016).

The Parafield air traffic control tower is of historical significance in a national context for its associations with a key phase in the development of air traffic control services and airport facilities in Australia. It is also of significance as a rare early surviving example of a building designed for the purposes of air traffic control (integrated with other administrative and terminal facilities).

10.14.6 Heritage Management

As a result of the listing of Parafield air traffic control tower on the Commonwealth Heritage Register, PAL in its Heritage Management Strategy has identified the building, together with several others of lower heritage value. The Strategy aligns with the objectives of this Master Plan and its implementation driven through PAL's Environment Management System. The Commonwealth Government's building approval process, regulated under the *Airports Act 1996*, will provide the mechanism for development control and trigger any relevant management actions relating to heritage.

10.14.7 Flooding

Areas of Parafield Airport are susceptible to a degree of flooding with the risk increasing as a result of climate change. Future flood risk scenarios will continue to be assessed and considered by PAL in land use planning and heritage management under the Climate Adaptation Plan (see Table 10.12).

10.14.8 Community Partnerships

As stated in the Sustainability Policy, PAL's corporate vision and ongoing success is founded on building and maintaining the three pillars of responsible business practice – sustainable financial, environmental and social management. To ensure that our business thrives and is managed in a manner that promises to meet the needs of future generations, PAL must respond positively and innovatively to local and global financial, environmental and social challenges.

Located in suburban Adelaide, PAL respects and values its relationship with the communities it serves, in particular, those of the northern suburbs including the immediate neighbouring communities of Parafield Gardens, Salisbury, The Levels, Para Hills, Mawson Lakes and Greenfields.

Sustainability is at the core of PAL's business, with environmental management and community needs considered in all stages of planning, development and facility management. PAL aims to provide infrastructure and developments that are of the highest quality in alignment with the broader social needs of staff, tenants, airport users and the wider community in addition to operational and economic objectives.

PAL takes an active role in the development of Parafield Airport and supports the economic development of the surrounding northern suburbs as well as a place where people can enjoy a better quality of life now and into the future.

Since inception, PAL has prided itself on being an active community stakeholder and responsive corporate citizen, listening to and working with our neighbours to better understand, empathise with and act on issues of concern.

Table 10.12 Land and Heritage Goals and Management Actions

Objective (2037)		
Conserve places of significant natural, indigenous and heritage value Enhance biodiversity, in particular within the Vernal Pools Conservation Zone Mitigate the risk of flooding Encourage community partnerships		
Goal (2017-2022)	**Management Actions (2012-2017)**	**Timing (years)**
Increase the proportion of native, endemic flora to exotic flora within the VPCZ (20% of 2017 levels by 2022)	Continue to implement the VPCZ Management Plan and revegetate the upland areas	Ongoing
	Assess options to incorporate a boardwalk and interpretation signage in the VPCZ	2022
	Continue to regularly monitor flora and fauna in the VPCZ	Ongoing
	Continue to apply biodiversity no net loss policy to VPCZ	Ongoing
Increase the annual number of native species planted on airport	Continue to expand replanting of the open stormwater network	2020
	Identify sources of pollution as per the SQMIP and mitigate sources of pollution where identified	Ongoing
	Partner with external stakeholders to support a biodiversity program in Council controlled easements or drains adjacent the airport	2020
	Continue to implement the PAL Landscape Guidelines	Ongoing
Establish a holistic heritage management framework	Continue to implement the Heritage Management Strategy based on the findings of heritage surveys and the ATC Tower's listing on the Commonwealth Heritage Register	Ongoing
	Develop Heritage Management Plans, where required	Ongoing
	Continue to implement procedures for identifying and protecting archaeological artefacts	Ongoing
	Continue to provide avenues for consultation between PAL and the Kaurna people	Ongoing
Mitigate flood risk	Continue to engage with external stakeholders on flooding	Ongoing
	Continue to implement Climate Adaptation Plan	Ongoing
Community Partnerships	Be a good neighbour to the surrounding residents and businesses	Ongoing
	Support economic development in northern Adelaide	Ongoing
	Increase outreach with tenants and the community related to sustainability	Ongoing

Direct investment into the local community has been an ongoing feature of PAL's Sustainability Program. The company provides funds each year to grants, sponsorships and concessions to local community and service groups. PAL also offers a fully paid scholarship to a local northern Adelaide student to obtain their Commercial Pilot training.

To remain at the forefront of social and environmental sustainability PAL has and will continue to foster partnerships with leading research, government and industry-based institutions.

PAL believes in being an active participant in the community and reaching out beyond the company to external stakeholders. This proactive, 'open door' approach is a vital component of PAL's strategy and is pursued by PAL 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. A summary of PAL's community partnerships goals and management actions is presented in Table 10.13.

Table 10.13 Community Partnerships Goals and Management Actions

Objective (2037)		
Be a good neighbour to the surrounding residents and businesses Support economic development in northern Adelaide Increase outreach with tenants and the community related to sustainability		
Goal (2017-2022)	**Management Actions (2017-2022)**	**Timing (years)**
Direct invest each year in to community groups, not-for-profit organisations and charities	Continue to provide support through a targeted sponsorship program	Ongoing
Establish and maintain partnerships with community, schools and tertiary institutions	Continue to offer a Commercial Pilots scholarship to a local northern Adelaide student	Ongoing
	Partner with Education Agencies by participating in programs that assist in creating a vocational bridge for young people transitioning from school to the workforce	Ongoing
	Maintain a research partnership with University of South Australia	Ongoing
	Establish a partnership with local schools to develop and deliver a curriculum covering PAL's environmental sustainability program	2022
Engage proactively with surrounding residents and businesses, with particular focus on noise impact	Continue to speak to local social, service and business groups	Ongoing
	Improve the information on airport operations available on the website	Ongoing
	Continue to facilitate the Fly Friendly program	Ongoing
	Develop and implement a community engagement strategy	2022
	Continue to establish community-friendly spaces on airport	Ongoing
Consult effectively with stakeholders on land use planning	Continue to facilitate consultation with stakeholders on Major Development Plans	Ongoing
	Conduct the 2017 Master Plan consultation program with airport stakeholders	2017
	Continue to host the Parafield Airport Consultative Committee and Planning Coordination Forum	Ongoing


Adelaide
Airport