Avalon Airport

Environmental Strategy

2024

Avalon Airport

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Acknowledgements

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Version Control

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Acronyms and abbreviations

AAA	Avalon Airport Australia Pty Ltd
AAV	Aboriginal Affairs Victoria
AES	Airport environment strategy
ANEF	Australian noise exposure forecast
AOM	Aerodrome Operations Manager
ARO	Aerodrome Reporting Officer
CEO	Chief Executive Officer
COO	Chief Operations Officer
DoD	Department of Defence
EPA	Environment Protection Authority
EMP	Environment Management Plan
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
HoAC	Head of Aviation Commercial
HoC	Head of Aviation Compliance
NPI	National pollutant inventory
OC	Operations Coordinator
PMP	Manager Property Management
SAO	Supervisor - Airfield Operations
SFM	Supervisor - Facilities Maintenance
TOC	Terminal Operations Coordinator
TEC	Threatened Ecological Community
WHS&E	Work, Health, Safety and Environment Manager

Glossary

Phrase	Description
Avalon Airport Australia Pty Ltd (AAA)	The airport lessee company.
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly, or partially resulting from the release of a substance in the environment.
Environmental objective	Overall environmental goal, arising from the environmental policy, that an organisation or parts thereof sets itself to achieve, and which is quantified where practicable.
Environmental target	Detailed performance requirement, quantified where practicable, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and accomplished in order to achieve those objectives.
Ramsar	The Ramsar Convention (The Convention on Wetlands of International Importance, especially as Waterfowl Habitat) is an international treaty which aims to conserve wetlands and ensure that they are sustainably utilised.

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1 Introduction

Melbourne Avalon Airport is operated by Avalon Airport Australia Pty Ltd (AAA), an exclusively owned subsidiary of the Linfox Group.

The Avalon Airport Environment Strategy (AES) 2024 - 2028 communicates the commitment of AAA to manage environmental issues arising from airport operations. This strategy has been prepared with consideration of the Avalon Airport Master Plan 2015 (AAA 2015).

This AES supersedes the previous strategy (2014-2019) and will commence once approved by the Department of Defence (DoD).

1.1 Location

Avalon Airport is situated on 1,753 hectares of land that is 55 kilometres south-west of the Melbourne central business district and 18 kilometres northeast of the centre of Geelong (Figure 1; from AAA 2015). The airport is bordered to the north by Beach Road, to the east by Pousties Road, to the south by Dandos Road, to the north-west by the Princes Freeway and to the west by Cheetham Salt, along with rural land.

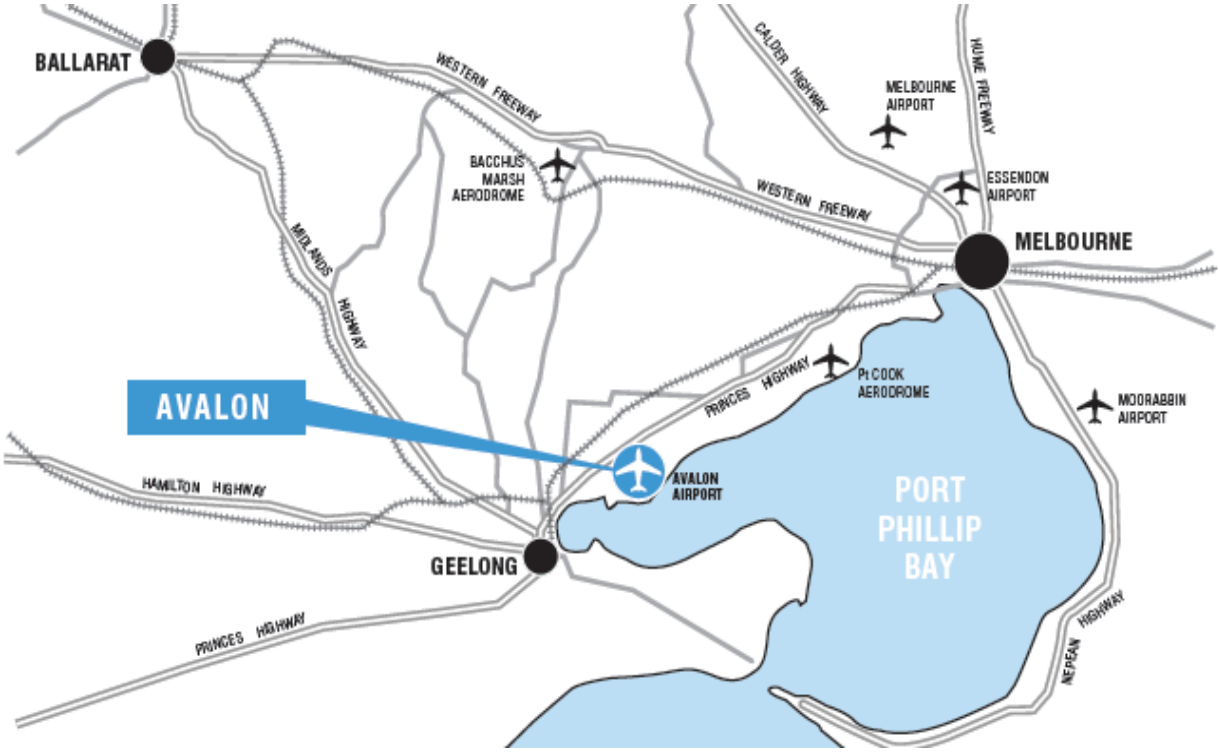


Figure 1 Site location

Most of the land in the vicinity of the airport is used for grazing and other agricultural purposes. Additional land use in the surrounding area includes industrial use, public use – service and utility, rural living and public conservation and resource (Figure 2; from AAA 2015).

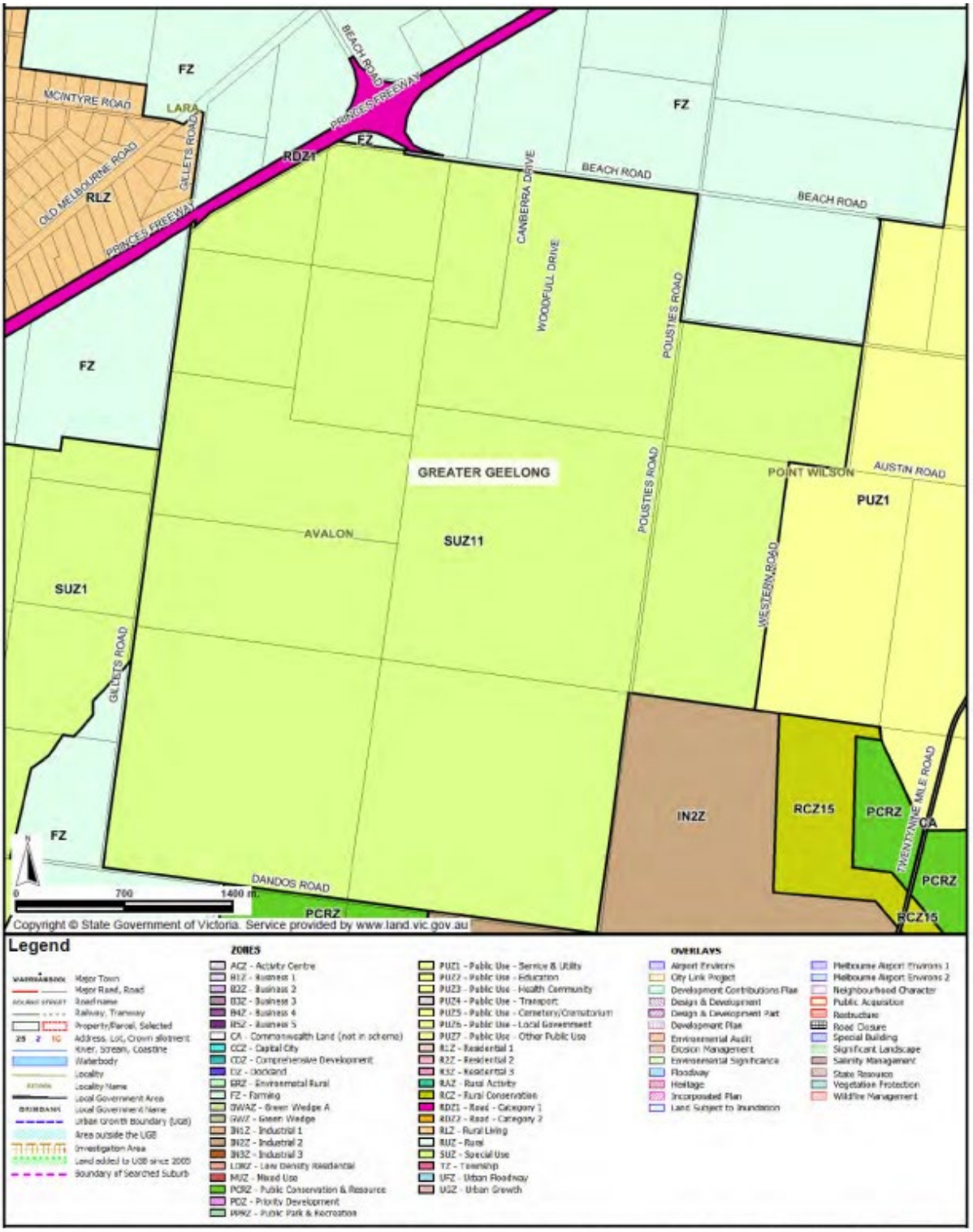


Figure 2 Land use surround the Avalon Airport

The airport is located approximately four kilometres east of the township of Lara and seven kilometres south-west of the township of Little River. Little River provides support to the rural sector in the region although in recent years has become a rural lifestyle choice for new residents, whereas Lara acts more as a satellite urban settlement of Geelong than a service centre to surrounding rural enterprise.

Avalon Airport has a temperate climate with a cool winter. The mean maximum temperature ranges from 14.2°C in July to 26.5°C in January. The mean minimum temperature ranges from 5.2°C in July to 14.2°C in January (Avalon Airport – site 087113; BOM 2021). The average annual rainfall is 454.8 mm, while the average monthly rainfall ranges from 27.1 mm to 49 mm (Avalon Airport – site 087113; BOM 2021). Table 1 outlines the average rainfall and temperature at Avalon Airport (from BOM 2021).

Table 1 Average rainfall and temperature

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average rainfall (mm)	33.9	32.4	27.1	38.5	37.3	38.6	36.9	42.5	44.8	47.1	49.0	29.4	454.8
Average maximum temperature (°C)	26.5	26.2	24.3	20.5	17.3	14.7	14.2	15.4	17.8	20.3	22.6	24.5	20.3
Average minimum temperature (°C)	14.2	14.4	12.6	9.7	7.7	5.7	5.2	5.5	6.7	8.1	10.6	11.9	9.3

1.2 History

Avalon Airport is located within the area of the Wathaurong language group of clans (Alert Solutions 1996) and has undergone many changes over the past century. The following is a summary of historical milestones at the airport (Table 2).

Table 2 Historical milestones

Year	Milestone
Prior to 1952	Land was used for grazing sheep and dairy cattle.
1952	Airport constructed by the Federal Government for the production and testing of military aircraft.
1959	Airport runway extended to 3,048 metres. Qantas established a training base for heavy jet flight training.
1980s - 1996	Construction of military aircraft ceased in the 1980s, while maintenance continued until 1996.
1991	Two Aboriginal archaeological sites were found: · one to the north of the Avalon Airport property between Beach Road and Princes Freeway · one isolated stone scatter, approximately 500 metres west of the southern end of the runway.
1992	Inaugural Australian International Airshow and Aerospace Expo commenced, which has been held biennially ever since.

Year	Milestone
1997	The Commonwealth Government through the Department of Defence (DoD) granted the Linfox Group a 50-year plus 49-year option Head Lease for Avalon Airport from 7 February 1997.
1998	Two aboriginal archaeological sites confirmed by Aboriginal Affairs Victoria (AAV) as site AAV 7721-117. Boeing 747 aircraft maintenance for Qantas commenced.
2001	Development proposals for Avalon Airport over a twenty-year period were prepared by the Linfox Group forming the basis of the Avalon Airport Master Plan 2015.
2003	AAA marked the Aboriginal scatter-site area with a plaque to commemorate the Wathaurong Community's involvement with the area.
2004	Jetstar Airways commenced passenger flight services.
2010	Tiger Airways commenced passenger flight services out of Avalon Airport.
2011	Tiger Airways ceased passenger flight operations out of Avalon Airport.
2016	First of ongoing extensive Cultural Heritage Management Plans undertaken.
2017	Establishment of the industrial precinct, first tenant Cotton On.
2018	Cotton On Distribution Centre opened.
2018	International terminal opened.
2018	Air Asia X commenced passenger flight services out of Avalon
2019	CitiLink Airways commenced passenger flight services out of Avalon
2020	March 2020 COVID-19 Pandemic – Closure of Aviation Operations
2020	Air Asia X ceased passenger flight services out of Avalon Airport due to Pandemic
2020	CitiLink Airways ceased passenger flight services out of Avalon due to Pandemic
2022	December 2022 Jetstar recommenced consistent Domestic Flights
2023	Bonza commenced flights at Avalon Airport
2023	Australia Post Distribution Centre Opened
2023	Petstock Distribution Centre Opened
2023	Hanwha Defense Commenced Construction

1.3 Operations

Avalon Airport is used for a range of aviation related services including heavy jet flight training, B747 aircraft maintenance, international airfreight handling and passenger flight services. The Avalon Airport Master Plan 2015 (AAA 2015) estimates that the total passenger movement throughout Avalon Airport in 2018-19 was 1,650,000, which is forecast to increase to 9,444,000 in 2030-31.

Avalon Airport has significant infrastructure to support airport operations.

Airside Facilities

- 3,048 metre runway
- taxiways
- aircraft aprons
- air traffic control tower
- aviation communications, navigation and surveillance infrastructure
- aviation refuelling facilities including 1.5 million litre jet fuel (Jet A1) storage capacity
- runway lighting (pilot activated, Precision Approach Path Indicator)
- aviation rescue and firefighting service facilities
- navigation aids (Very High Frequency / Distance Measuring Equipment, Instrument Landing System)
- helipad
- POWERCOR (electricity distribution network).

Landside Facilities

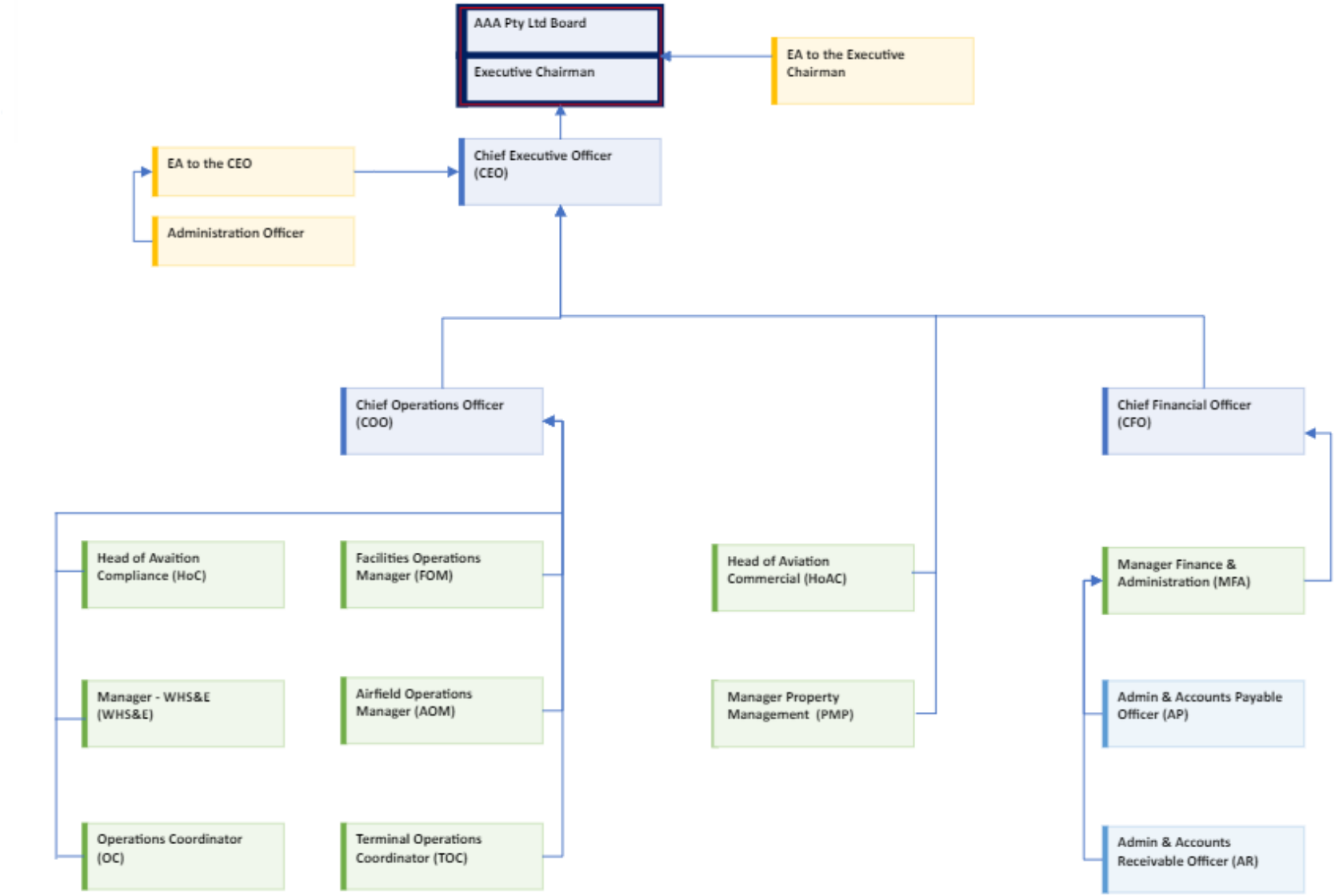
- domestic and international passenger terminals
- baggage handling facility
- 1,669 bay passenger car park
- 700 bay employee and rental car park
- 6 aviation hangars
- Cotton On distribution centre
- Australia Post distribution centre
- Petstock distribution centre
- Hanwha Defence manufacturing facility (under construction)
- administration offices
- 3 standalone wastewater treatment facilities
- maturation ponding
- retention basins
- gas pipeline
- sky advertising sign

- various tree plantations
- high and low voltage power lines.

The Australian International Airshow and Aerospace Expo has been held at Avalon Airport biannually since 1992.

The AAA management team has been established as per Figure 3. The Chief Executive Officer reports to the Linfox Board and Board of Avalon Airport Australia Pty Ltd.

Figure 3 – Organisational Chart



1.3.1 Key Responsibilities

The primary responsibility for environmental management at Avalon Airport rests with the Chief Executive Officer. The Chief Executive Officer will:

- initiate the implementation of the five-yearly review of the airport Environmental Strategy
- ensure that the responsibilities of all Avalon Airport employees are clearly delineated and that all employees are aware of their responsibilities.

The responsibilities of the Management Lead Team includes:

- coordinating the conduct of environmental studies and programs
- ensuring that all environmental incidents are appropriately managed to minimise their impact on the environment and that necessary remedial actions are completed
- chair of the Avalon Airport Aircraft Noise Abatement Committee
- maintaining environmental records
- establishing the necessary environmental communications processes.

The Management Lead Team Consist of the following management positions;

- COO
- WHS&E
- PMP
- FOM
- AOM
- HoC

2 About this strategy

2.1 Airport Head Lease

The Commonwealth Government through the DoD granted the Linfox Group a 50 year plus 49 year option lease for the airport from 7 February 1997. The airport Head Lease requires an Environment Strategy be prepared to provide the framework for environmental management at the airport over a five-year period.

Under the terms of the lease, a new AES was required in 2020 to replace the 2014-2019 AES. Due to the extraordinary impact of the Covid-19 pandemic on aviation and the slow recovery of the aviation industry, the 2014-2019 AES was held over. The new 2024 - 2028 AES replaces the 2014-2019 AES once it is approved by the DoD.

In addition to the requirement to prepare and maintain a five yearly Environment Strategy, the Head Lease specifies that AAA must:

a) continue to operate and be maintained as an aerodrome in accordance with all applicable legislation

b) operate the airport having regard to the actual and anticipated future growth in, and pattern of, traffic demand for the airport site

c) operate the airport while ensuring the safety and security of the aerodrome in accordance with all laws.

Provided these requirements are met, AAA is granted the opportunity to develop the premises for other legal purposes. This environment strategy will contribute towards minimising the potential for damage to the environment resulting from ongoing development of the land.

Appendix 1 summarises the requirements for an environmental strategy under the Head Lease (Clause 9.2.1) and illustrates how these are met by this AES.

2.2 Master Plan

The Avalon Airport Master Plan 2015 (AAA 2015) is a 20-year plan which outlines Avalon Airport's vision to be a World Class Airport supporting both aviation operations and commercial development. It contains the strategies required to sustainably meet Melbourne's future air transport needs.

Development objectives proposed in the Master Plan 2015 include:

- maintain the safe, secure and efficient movement of passengers, freight and aircraft at all times
- establish and maintain a reputation as an efficient and delay-free airport by enhancing the flow of passengers, freight and aircraft through the airport

- ensure airport capacity is increased and delivered on-time to accommodate forecast demands
- strengthen the airports role as a major driver of economic activity in the Geelong, Melbourne and regional Victoria region
- realise commercial, retail and industrial development opportunities that are compatible with on-site aviation activity to support economic development and employment creation in Victoria
- provide high quality and essential aviation services for the benefit of airlines, community members and businesses at reasonable costs
- maintain adequate and sustained return on investment for shareholders to support continuing investment in airport facilities
- improve the integration of the airport with the surrounding community, and
- maintaining the curfew free status of the airport.

The Master Plan 2015 details proposed developments and provides a Precinct Plan (see www.avalonairport.com.au/). The Master Plan should be read in conjunction with this AES.

It is noted that a new Master Plan for Avalon Airport is expected to be finalised in 2025 following a public comment period and DoD approval.

2.3 Scope

The Avalon AES has been prepared in accordance with Part 9 of the Head Lease between the Commonwealth Government, DoD and the Linfox Group. Specifically, the strategy has been prepared to address Clause 9.1 of the lease. The strategy is the means through which AAA communicates its objectives for environmental management of the airport.

The scope of the Avalon AES covers all environmental matters within the airport boundary; however, some off-site environmental impacts are included where relevant. Noise, air and other environmental impacts associated with aircraft take off, landing, taxiing and flying are outside the scope of this Strategy.

In accordance with the Head Lease, this five-year AES supersedes the AES prepared in 2014. This current AES will commence once it is approved by the DoD. This document addresses overarching environmental matters in Section 3 (Environmental Management). Individual environmental features such as water, soil and biodiversity are addressed in subsequent chapters.

2.4 Consultation

The Head Lease Agreement between the Commonwealth Government, Defence (DoD) and the Linfox Group outlines the consultation required by AAA when preparing an AES. Each phase of this consultation is summarised in Figure 3.

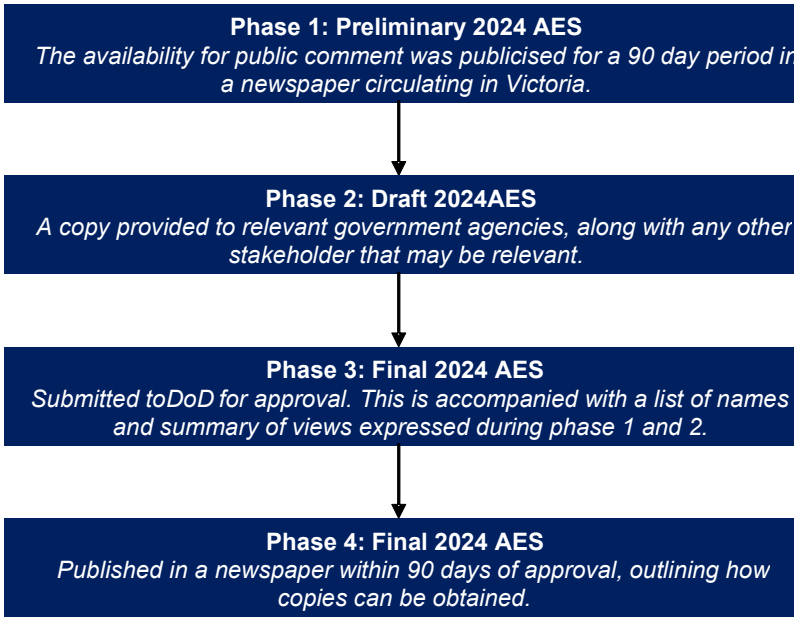


Figure 3 Phases of consultation for the AES approval

Appendix 2 summarises the consultation requirements for an environmental strategy under the Head Lease (Clause 9.9 and 9.10) and illustrates how these are met by this AES.

2.5 Legislation

Avalon Airport is located on land owned by the Department of Defence and jurisdiction is defined under the *Commonwealth Places (Applications of Laws) Act 1970*.

AAA is committed to compliance with all relevant environmental legislation (see Appendix 3 for the Linfox Group's Environment and Sustainability Policy). The principal piece of environmental legislation applicable to Avalon Airport is the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth). The objects of the EPBC Act provide for the protection and conservation of the environment and heritage, with particular regard to matters of national environmental significance. This includes Cultural Heritage matters, listed species and ecological communities and protected areas.

Although Avalon Airport is not subject to the provisions of the Commonwealth *Airports Act 1996* and Airports (Environment Protection) Regulations 1997, AAA considers the environmental requirements of this legislation in its management of the airport site.

3 Environmental Management

3.1 Avalon Airport Environment Policy

AAA operates under the Linfox Group's Environment and Sustainability Policy, which is included as Appendix 3.

3.2 Environment Management Plan

AAA has implemented an Environment Management Plan (EMP; Alert Solutions 2006) which identifies and manages environmental impacts associated with airport operations. The environmental elements considered in the EMP include:

- emissions to air
- emissions to surface water
- emissions to land and groundwater
- solid and hazardous wastes
- natural resources and energy
- onsite habitat.

For each of these elements the EMP outlines the applicable legislation, environmental risks, environmental objectives, and a plan to achieve the stated objectives. The management and monitoring plans outlined in the EMP aim to assess:

- regulatory compliance
- environmental impacts
- existing controls
- progress towards objectives.

3.3 Objective

The overarching objective is to minimise potential impacts arising from airport activities to the environment, both on and off airport and where possible improve the environmental values of the site.

3.4 Recent Achievements

Table 3 Recent achievements

Environmental Aspect	Achievement
Water	AAA has conducted a survey of all sources of wastewater on the property and of all water emissions, including stormwater and wastewater in accordance with the State Environment Protection Policy (Waters of Victoria). Surface drains directing water offsite are sampled at critical points as prescribed by the Environment Protection Authority (EPA) Licence No. EW 725/2 monthly
Soil	Since 2000, AAA, Avalon Landcare Group and the Victorian Government's Department of Environment, Land, Water and Planning have addressed salinity at the Airport by planting more than 200,000 native trees and grasses to reduce the water table and restore the soil. The revegetation program has met with considerable success.
Biodiversity	AAA monitor and manage weeds and pests within the Airport.
Cultural Heritage	In 2003, AAA marked the Aboriginal stone scatter site with a plaque to commemorate the Wathaurong Community's involvement with the area. Since the 2001-2006 AES the AAA has consulted with, and gained the consent of, Wathaurong representatives prior to planting trees. AAA have ongoing liaisons with the Wathaurong pertaining to site developments and preparation of Cultural Heritage Management Plans.
Air Quality and Emissions	Between 2002 and 2007, AAA has removed approximately 30 air conditioning units (ranging from 3 kilowatts to 25 kilowatts) at a cost of $40,000. Exhaust emissions from aircraft using Avalon Airport during the biannual air show were reviewed by Consulting Environmental Engineers (in 1995), who concluded that exhaust emissions would have little impact on ground level concentrations of pollutants under conditions of poor dispersion.
Noise	Avalon Airport has a Noise Abatement Committee which meets every six months to discuss noise complaints and noise abatement procedures.
Resource use and sustainability	A waste management programme for Avalon Airport has been developed and implemented in accordance with the Airport's EMP. The programme is structured to enable AAA to meet the standards of the Victorian Industrial Waste Resource Guidelines). It includes management of the generation, storage, transport, and disposal of all solid and hazardous wastes, generated at Avalon Airport by AAA.

3.5 AES 2014 – 2019 targets completed.

Table 4 AES 2014 - 2019 targets completed.

Targets	Responsibility
Review and update the risk register for Avalon Airport.	PMP
Ensure standard operating procedures exist for all operations with the potential for significant environmental impact (as part of the EMP update).	PMP
Develop and implement an environmental awareness training program for staff and contractors that covers all environmental aspects and incident responses relevant to the airport (as part of the EMP update). Include key aspects of this program in the staff and contractor induction package.	PMP

3.6 Targets for 2024 - 2028

Table 5 Targets for 2024 - 2028

Targets	Anticipated Completion Date	Responsibility
Meet with the Department of Defence to communicate changes to monitoring, achievements of targets, new reports, etc.	September Annually	CEO/COO
Communicate the 2024 - 2028 AES through inductions and training for existing Avalon Airport tenants and staff.	Within two months of AES approval	COO/FOM/WHS&E
Provide a copy of the 2024 - 2028 AES to new Avalon Airport tenants and staff.	As part of their site induction	FOM/WHS&E
Develop and implement an Environment Policy specific to Avalon Airport.	December 2024	CEO/COO/WHS&E
Establish an environmental committee for AAA staff and airport tenants to discuss new or changing environmental impacts and management options and determine appropriate meeting schedule.	December 2024	COO/FOM/WHS&E
Environmental committee to audit Avalon Airport tenants on environmental aspects relevant to their activities.	Every year for high-risk activities/ every 3 years for medium risk every 5 years for low-risk activities	FOM/PMP/WHS&E
Categorise new tenants through risk assessment process and develop controls and audit requirements depending on the allocated risk level.	Two months after commencement of a new tenant lease	FOM/WHS&E
Review AES objectives and targets to ensure continual improvement.	December each year	CEO/COO/CFO
Review of AAA Environment Policy for relevance.	December each year	CEO/COO/WHS&E
Develop an environmental legislation register relevant to AAA operations and implement a schedule to monitor and respond to changes in legislation.	December 2024	CEO/COO/WHS&E
Monitor and respond to any changes in legislation (based on AAA's legislation register).	Ongoing	WHS&E
Update the EMP (including an annual program of internal and external reviews and audits of the EMP).	December 2024	WHS&E
Develop Construction Environment Management Plan(s) and environmental inspections required prior to the commencement of all significant developments.	As required	WHS&E
Conduct frequent audits, determine trends to ensure ongoing compliance	Annually	WHS&E
All follow-up actions from audits and inspections closed out.	Annually	WHS&E

4 Water

4.1 Objective

To maintain, and where possible improve, surface water and groundwater quality to protect existing and future resources both on and off site.

4.2 Environmental Aspects

Most of the Avalon Airport property is relatively flat resulting in a poorly defined drainage pattern. There have been several natural wetlands present on the property in the past, however only one of these remains (Lodges Wetland) as the others have been filled in. Constructed open drains transfer surface water to the west and east of the property and ultimately flow into Corio Bay.

There is a monthly surface water quality monitoring program which is reported to the EPA (see Section 4.4). No significant water contamination has been found in the last ten years.

4.3 Potential Environmental Impacts

Past and current activities at Avalon Airport have the potential to result in impacts to surface water and groundwater both on the airport and downstream. Potential water contaminants and their likely sources include:

- fuel and chemical stores and transfer points (fuel and chemicals)
- aircraft wash bay and shot blast areas[1] (oils, suspended solids and detergents)
- car parking (oils, suspended solids and litter)
- stationary and mobile engines (exhaust particulate)
- fire training area (fuel, firefighting material)
- grounds maintenance (herbicides)
- maintenance areas (solvents and oils)
- high salinity soil (soluble salts, mobilised particulate matter)
- sewage treatment plant (sewage treatment plant effluent)
- chemicals and solvent stores (solvents and paints)
- ground works (i.e., associated with construction) (suspended solids).

Pollution of surface and groundwater through these activities on airport grounds may adversely impact the environment both on the airport and the surrounds, including adjacent wetlands. Outcomes of any such pollution may include:

[1] This is done inside buildings with wash waters contained for offsite treatment and disposal and/or pretreated prior to any discharge

- failure to comply with water quality objectives and targets
- death of aquatic organisms
- potentially harmful algal blooms
- danger to public health.

4.3.1 Per- and ploy-fluoroalkyl substances (PFAS)

The PFAS National Environmental Management Plan (NEMP) was introduced in February 2018 to provide nationally consistent guidance and standards for managing PFAS contamination. The PFAS NEMP was developed by Heads of EPAs Australia and New Zealand (HEPA) at the request of Environmental Ministers around Australia. It focuses on perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS) and recognises that these are usually indicators of the presence of a broad range of PFAS compounds.

PFAS are manufactured chemicals used to make products non-stick, and water, fire, weather, and stain resistant. These chemicals are highly resistant to physical, biological, and chemical degradation and have been widely used in a range of household and commercial products (such as firefighting foams, non-stick cookware, food packaging, textile treatments, pesticides) for more than 70 years. AAA has conducted a full site assessment in relation to PFAS. This assessment found historical PFAS impact within the hangar precinct, which is likely due to PFAS-containing foams being formerly used in hangar fire-suppression systems. PFAS was detected in the drinking water and the source has been identified as groundwater leaching. It is noted that the presence of PFAS predates the Airport Head Lease to AAA. Remedial actions will be implemented from the assessment, these are detailed in Section 4.4 below.

Airservices Australia has provided aviation rescue and firefighting services at Avalon Airport since 2005 and has used PFAS-free firefighting foam at Avalon Airport since 2010. Airservices is separately undertaking investigations as part of its National PFAS Management Program to determine the nature and extent of PFAS at its sites at Avalon Airport.

4.4 Measures to Manage Impacts

AAA implements several measures to prevent or reduce potential impacts to water quality. General measures include:

- an emergency plan that includes procedures to control impacts to the environment should a fuel spill or contamination occur. In addition, the fuel facility also has a comprehensive manual issued by Shell Australia providing safety and operational procedures for the refuelling facility.
- a monthly surface water quality monitoring program which is measured against ANZG (2018) or Airport (Environment Protection) Regulations 1997 water quality guidelines. The findings of this monitoring program are annually reported to the EPA.
- monthly testing of groundwater bores and stormwater in the open drains to ensure the nearby treated sewerage water does not breach the stormwater drain

(parameters tested include pH, E.coli MPN Colilert, biochemical oxygen demand and suspended solids).

- establishing a stand of new trees and bushes near the sewage treatment plant to extract the majority of treated water and ensure that minimal (if any) treated water leaves the site.

Measures specific to PFAS have been identified by AAA environmental management consultants and includes:

- document review and gap analysis: consolidating the dataset collected to date, assessing, and recommending additional assessment to fill gaps that may give rise to exposure risk.
- review of the Avalon Airport Conceptual Site Model (and Preliminary Site Investigation review): after gap analysis, review (and if required, update) the existing Detailed estate-wide Conceptual Site Model
- undertake a Strategic Risk Assessment to identify source-pathway-receptor linkages that represent risk, prioritising risks for management or further investigation.
- prepare a Strategic PFAS Management Framework for the management of PFAS on the Avalon Airport in various media, developing an understanding of costs associated with different options with a focus on the areas identified in recent investigations (Hangar 5 and Building 52)
- the strategic approach must consider the nuances of Avalon Airport and align with DoD's national approach to PFAS assessment and management including:
    - any remediation and management should be underpinned by appropriate site characterisation and assessment of risk, which may include more quantitative risk assessment (as opposed to qualitative), followed by prioritisation of efforts for optimal effect.
    - primary focus is on pragmatic PFAS risk reduction. This typically takes the form of source management (i.e., reduction of PFAS mass at source via a number of different methods depending on the specifics of the site), reduction in mass flux (i.e., reducing as far as is practicable the migration of impacts toward sensitive) and receptor protection (focused, localised address of impacts if receptors are deemed at risk)
    - large scale remediation of diffuse impacts (e.g., distal groundwater plumes, broad-scale, low level soil impacts) are typically eschewed based on comparatively elevated costs versus diminished returns with regards to PFAS removal from the environment, and minimal likelihood or reduction in risk profile.
    - engagement with external stakeholders (e.g., state-based regulators and offsite landholders) should be undertaken carefully, and with due regard to limitations presented by differing legal jurisdictions and the primacy of being within the Defence estate.

- the strategy will incorporate useful and practical elements of “best practice” approaches taken by other airports at a national level, specific airports with highly advanced PFAS management strategies.
- while the gap analysis is being undertaken and the strategy developed, data will continue to be collected that captures temporal fluctuations over longer timeframes and will be the primary focus of third-party engagement and liaison. There will be a focus on quantifying PFAS mass flux leaving Avalon Airport, which is a surface water dominated system requiring quantification of both surface water flows and PFAS concentrations over time.

Further measures to manage impacts of water pollution include appropriate training for AAA, tenant, and contractor personnel whose duties may pose a risk to water quality at the airport.

4.5 Targets for 2024 - 2028

Table 6 Targets for 2024 - 2028

Target	Anticipated Completion Date	Responsibility
Review water quality monitoring program (e.g., to ensure an appropriate testing regime at each discharge point from the airport).	Quarterly, ongoing	FOM/WHS&E
Undertake routine inspection of housekeeping and cleanliness of non-leased and sub leased areas.	Ongoing	FOM/WHS&E
Review previous analytical results and confirm the status of surface and groundwater quality in relation to appropriate current criteria.	June each year	WHS&E
Annual integrity testing of all underground storage tanks and active hydrant lines for all airport facilities.	June each year	COO/FOM/WHS&E
Upon identification of surface and groundwater that exceeds the appropriate assessment criteria, undertake a risk assessment to determine the management action required.	As required	COO/FOM/WHS&E
Undertake a site wide PFAS investigation and associated risk assessments and manage accordingly.	Ongoing	COO/FOM//WHS&E
Document review, gap analysis and review Conceptual Site Model	December 2026	COO/FOM/WHS&E
Undertake a Strategic Risk Assessment and prepare a Strategic PFAS Management Framework	June 2026	COO/FOM/WHS&E
Continual monitoring of PFAS to capture temporal fluctuations over time	Ongoing	COO/FOM/WHS&E

5 Soil

5.1 Objective

To maintain and where appropriate improve the condition of land, including reducing salinity.

5.2 Environmental Aspects

Avalon Airport is located on a surface layer of basaltic clays which overlay Quaternary aged basalts. The basaltic lava flows are part of the newer volcanics which underlie most of the north-western and western areas of the Melbourne region. The surface clays can vary in depth from being very shallow to around seven metres in depth and contain pockets of sands and gravels. The transition layer between the surface clays and the basalt layer is characterised by a zone of mixed clays and basalt boulders.

The basalt layer, which varies in thickness from one to 10 metres, overlies a layer of tertiary clays. Weathering of basaltic lava flows has resulted in the clayey surface to the depth of up to 3 metres (Synnot and Wilkinson 1997). Soils at Avalon Airport are mainly stiff sandy clays overlaid by a thin layer of topsoil.

An assessment of soil contamination within the Avalon Airport property identified some localised contamination of soil as a result of fuel storage and the use of solvents and other chemicals associated with the aerospace industry (Woodward-Clyde 1997, cited within Synnot and Wilkinson 1997).

5.3 Potential Environmental Impacts

Past and current activities at Avalon Airport have the potential to result in the following environmental impacts:

- contamination from spills and/or leaks
- erosion and sedimentation
- particulate air pollution
- increase in soil salinity.

The main potential sources of soil contaminants are:

- fuel and chemical stores and transfer points (fuel and chemicals)
- aircraft wash bay and shot blast areas[2] (oils, suspended solids and detergents)
- car parking (oils, suspended solids and litter)
- stationary and mobile engines (exhaust particulate)

[2] This is done inside buildings, and wash waters are contained for offsite treatment and disposal and/or pretreated prior to any discharge

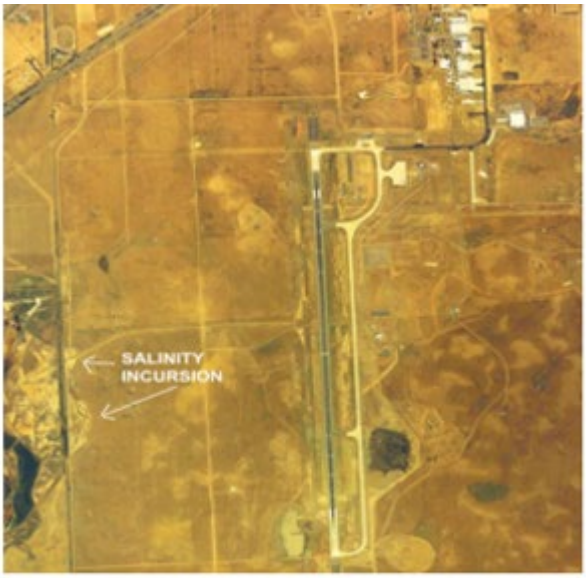
- fire training area (fuel, firefighting material)
- grounds maintenance (herbicides)
- maintenance areas (solvents and oils)
- high salinity soil (soluble salts, mobilised particulate matter)
- sewage treatment plant (sewage treatment plant effluent)
- chemicals and solvent stores (solvents and paints)
- ground works (i.e. associated with construction) (suspended solids).

Contaminated soil may have adverse impacts on the environment on and surrounding Avalon Airport and may influence other environmental factors such as surface and ground water, as well as biodiversity.

Salinity is a particular issue at Avalon Airport. Between the 1960s and the 1990s there was severe leeching of salt from the salt evaporators into Avalon Airport on the western boundary.

In early 2000 Avalon Airport planted approx. 200 thousand trees throughout the site, specifically in the salinity impacted areas. Of recent time the salinity incursion has reduced, and natural grasses have revegetated in the area. Salt tolerable trees, through their deep root systems, help lower the water table by absorbing water from the ground. This has assisted in preventing further rise of saline groundwater toward the soil surface.

Shows the incursion of salt into Avalon Airport.



1995

2021

5.4 Measures to Manage Impacts

AAA implements several measures to prevent or reduce potential impacts to soil. These include:

- planting more than 200,000 native trees and grasses since 2000 to lower the water table and restore the soil. AAA, the Landcare Group and the Victorian Government assessed the risks and impacts of the previous leeching of salt onto Avalon Airport and responded by planting trees and grasses. AAA has established an onsite nursery to grow native trees for ongoing plantings. The revegetation program has met with considerable success and will be continued during this strategy period.
- most of the airport operations take place over concrete or other sealed surfaces which reduces the risk of causing soil contamination.

Further measures to manage impacts of soil pollution include appropriate training for AAA, tenant, and contractor personnel whose duties may pose a risk to soil at the airport.

5.5 AES 2014 – 2019 targets completed.

Table 7 AES 2014 - 2019 targets completed.

Target	Responsibility
Monitor the success of trees and grasses around the salinity contamination site through photo monitoring.	PMP
Develop an inventory of known and potential contaminated sites (including a map identifying these sites).	PMP

5.6 Targets for 2024 - 2028

Table 8 Targets for 2024 - 2028

Target	Anticipated Completion Date	Responsibility
Continue active land management practices, including working with the Avalon Landcare Group to monitor and assess the salinity risk on Avalon Airport.	Ongoing	FOM/WHS&E
Develop erosion/sedimentation control plans for all earth works and development activities.	Prior to all earth work and development activities	FOM/WHS&E
Monitor the success of trees and grasses around the salinity contamination site through photo monitoring	On-going	FOM/WHS&E
Update the inventory of known and potential contaminated sites (including a map identifying sites).	As required	COO/FOM/WHS&E
Update contaminated sites inventory and map based on any new information that comes to light.	As required	FOM/WHS&E

Target	Anticipated Completion Date	Responsibility
Undertake internal audit program for the use, handling and storage of hazardous substances and dangerous goods.	Annually	FOM/WHS&E
Upon identification of soil that exceeds the appropriate assessment criteria, undertake a risk assessment to determine the management required.	As required	COO/FOM/WHS&E
Undertake a site wide PFAS investigation and associated risk assessments and manage accordingly.	Ongoing	COO/FOM/WHS&E

6 Biodiversity

6.1 Objective

To preserve, maintain and restore natural areas on the airport, with a focus on enhancing environmentally significant areas such as Lodges Wetland.

6.2 Environmental Aspects

Avalon Airport is located in the vicinity of habitat areas which hold international, national, and regional significance. Significant habitats occur both on Avalon Airport and in the surrounding region. The Port Phillip Bay (Western Shoreline) Ramsar Site includes Avalon Airport and surrounding natural wetlands. This area is considered to be the very important in Victoria for migratory wader species and is classified as a Ramsar Site (Department of Environment, Land, Water and Planning 2017):

- is a good representative example of a natural/near natural wetland:
  - characteristic of the appropriate biogeographical region
  - that contains examples of more than one biogeographical region.
- is a wetland that is of special value for maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora and fauna
- regularly supports 20,000 water birds.
- regularly supports substantial numbers of water birds from particular groups.
- regularly supports 1% on the individuals in a population of one species or subspecies.

6.2.1 Significant Habitats in the Vicinity of the Airport

Avalon Airport is one of eight areas which are included in the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site (Department of Environment, Land, Water and Planning 2008). This means the airport is considered to be part of a Wetland of International Significance, listed under the Ramsar Convention. Under the Convention, Australia has an obligation to ensure that listed sites are managed to maintain their ecological character. However, there is some debate as to whether the inclusion of Avalon Airport as a Ramsar site is merited. This is primarily due to the generally low habitat quality present on the airport (McMahon 1995). This is reflected in the exclusion of Avalon Airport from the Murtcaim Wildlife Reserve, the Spit Nature Reserve, and the Australian Heritage Commission National Estate Point Wilson/Avalon Coastal Reserve. Despite this assertion, AAA's restoration efforts at Lodges Wetland ensures that habitat has been improved.

The Port Phillip Bay (Western Shoreline) Ramsar Site includes natural and artificial wetlands that support a large number of waterbirds, especially migratory shorebirds. Key features of this Ramsar Site are (from Department of Environment, Land, Water and Planning 2008):

- more than 285 native fauna species, including 50% of the global population of the endangered, orange-bellied parrot (*Neophema chrysogaster)*. The Strategic Management Plan for this Ramsar Site also states that this area is the most important known wintering site for this species (Department of Sustainability and Environment 2003)
- more than 332 native non-marine flora species, including nationally endangered spiny rice flower (*Pimelea spinescens*)
- waterbirds using it as a drought refuge when inland lakes and wetlands dry out
- cultural heritage sites, due to Aboriginal tribes being attracted to the wetlands' plentiful in resources for thousands of years.

The Point Wilson/Werribee Coastal Area between Limeburners Bay and Little River is included on the now closed Register of the National Estate. Despite this Register now having no statutory value, it indicates that the area is considered to have natural significance. The area generally encompasses the coastal fringe and skirts to the south of Avalon Airport. The area is described in the register as being a highly productive and diverse wetland and saltmarsh habitat supporting a wide range and large number of avifauna.

Significant waterbird habitats are located to the west, south and east of Avalon Airport. These include The Spit State Nature Reserve, further sections of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site, which includes the Western Treatment Plant, the Cheetham Salt evaporators, and the Point Wilson Explosives Area. These areas have international, national, state, and regional waterbird habitat significance and provide an important drought refuge for a number of these species when inland lakes and wetlands dry out (Department of Sustainability and Environment 2003).

6.2.2 Significant Habitats within the Airport Grounds

Avalon Airport has generally low conservation value, particularly when compared to the adjacent coastal wetlands.

Most of the airport supports exotic pasture and numerous declared weed species listed under the *Catchment and Land Protection Act 1994* such as Bathurst burr (*Xanthium spinosum*) and African lovegrass (*Eragrostis curvula*) where areas throughout the north-west and south-east of the airport also support degraded remnant native grassland. The listing of Natural Temperate Grassland of the Victorian Volcanic Plain as a threatened ecological community (TEC; under the EPBC Act) occurred in June 2008 (DSEWPaC 2011).

Avalon Airport contains several ephemeral freshwater wetlands. The best-preserved wetland area is Lodges Wetland named after the Lodge Family who settled the area and commenced farming it over 100 years ago. Lodges Wetland is located on the eastern side of the southern end of the runway. Previous studies have shown that the vegetation present at this wetland is of regional significance and has the potential to provide habitat for bird species such as:

- Australasian bittern (*Botaurus poiciloptilus*; listed as endangered under the EPBC Act)

- spotless crake (*Porzana tabuensis*; listed as marine under the EPBC Act)
- black falcon (*Falco subniger*).

The condition of the wetland has been improved by restoration efforts which commenced in 1995. In recent years, habitat improvement has included planting eucalyptus trees from seeds harvested from the present trees in the wetlands.

The remaining wetland areas on Avalon Airport have been severely degraded. The potential for Lodges Wetland to provide valuable habitat is moderated due to its propensity to dry up during summer. Summer is the season when waterfowl would be expected to move from inland areas and utilise coastal areas such as Werribee/Avalon.

6.3 Potential Environmental Impacts

Biodiversity values at Avalon Airport may be adversely impacted in the following ways:

- habitat loss and mortality as a result of construction, earthworks and vegetation clearing activities.
- habitat loss and mortality resulting from fires degradation of habitat and food sources through water or soil pollution events.
- disturbance to roosting and nesting sites as a result of noise.
- competition for resources and predation by exotic wildlife, including declared pest species (listed under the *Catchment and Land Protection Act 1994*) such as the European rabbit (*Oryctolagus cuniculus*), red fox (*Vulpes vulpes*) and European hare (*Lepus europaeus*)
- competition for resources by exotic flora species
- direct mortality via bird and wildlife strike with aircraft.

6.4 Measures to Manage Impacts

AAA actively manages the risk of adverse impact to biodiversity both within the airport and the surrounds. Habitat management measures include:

- re-vegetation, landscaping, and regular weed management
- maintaining water quality on the airport
- specific provision for Lodges Wetlands ongoing feral animal control through shooting and baiting
- fire management including grazing, slash fire breaks and controlled burns.

Of particular emphasis for habitat management will be the continuation of AAA's involvement in the Avalon Landcare Group.

In addition, ongoing airport operations and any proposed modifications to operations need to be monitored to identify their impact on the surrounding habitat. The Wildlife Hazard Management Plan guides the mitigation of bird and wildlife strike risk (Avisure 2020). Operations staff has been trained in the relevant procedures designed to ensure safety yet minimise impacts on native species.

6.5 AES 2014 – 2019 targets completed.

Table 9 AES 2014 - 2019 targets completed.

Targets	Responsibility
Complete an ecological assessment of Lodges wetland to determine fauna and flora species/communities present.	FOM/PMP
Develop and implement a fire management plan (in consultation with the local Fire Authority).	FOM/PMP

6.6 Targets for 2024 - 2028

Table 10 Targets for 2024 - 2028

Targets	Anticipated Completion Date	Responsibility
Complete appropriate ecological assessments prior to the commencement of all developments on greenfield sites.	As required	FOM/PMP/WHS&E
Based on the results of the ecological assessment completed for Lodges wetland, develop, and implement a flora and fauna monitoring program for AAA (which includes monitoring impacts of major events and future assessments required for areas identified in the Master Plan as being subject to future developments).	Ongoing	COO/FOM/WHS&E
Review and document AAA's pest and weed control programs.	Ongoing	FOM/WHS&E
Review the ecological maintenance program for the airport's natural areas (including revegetation/regeneration, weed management, feral animal eradication, rubbish removal etc.)	Ongoing	FOM/WHS&E
Continued implementation and revision of AAA's Wildlife Hazard Management Plan.	Ongoing	HoC/AOM
Develop and implement a Biodiversity and Conservation Management Plan.	June 2027	COO/FOM/WHS&E
Review and update the environmental management plan for onsite construction works.	June 2027	FOM/WHS&E

7 Cultural Heritage

7.1 Objective

To comply with relevant heritage legislation and manage Avalon Airport with sensitivity to the traditional owners.

7.2 Environmental Aspects

Indigenous Cultural Heritage

Avalon Airport is located within the area of the Wathaurong language group of clans (Alert Solutions 1996). A survey of the region in 1991 identified two archaeological sites, one to the north of Avalon Airport between Beach Road and Princes Freeway and one within the Airport, an isolated stone scatter which is approximately 500 metres west of the southern end of the runway (Figure 6). Aboriginal Affairs Victoria confirmed this in a letter dated 29 July 1998, which referred to site AAV 7721-117. In 2003 AAA marked the area with a plaque to commemorate the Wathaurong Community's involvement with the area.

During the previous strategy period (2014 - 2019), AAA consulted with and gained the consent of Wathaurong representatives prior to planting any new trees. This practice will continue during this AES period.

Non-Indigenous Heritage

Land on which Avalon Airport is located was developed for pastoral purposes in the early and mid-1800s. The Avalon Homestead and outbuildings on Avalon Road, 6.5 kilometres south of Lara, and the Point Wilson Farm Complex on Dando's Road, 9 kilometres south of Lara, are included on the now closed Register of the National Estate. Despite this Register now having no statutory value, it indicates that the area is considered to have historical significance. However, these buildings are outside of Avalon Airport and no structures of heritage significance exist within Avalon Airport itself.

7.3 Potential Environmental Impacts

Accidental disturbance to the stone scatter site at Avalon Airport could lead to loss of anthropological insight to the Aboriginal communities who utilised the area in the past. The activities with the greatest risk of impacting the stone scatter are likely to include construction and land clearing.

7.4 Measures to Manage Impacts

AAA implements several measures to prevent or reduce potential impacts to cultural heritage. These include:

- marking the stone scatter with a plaque and three-star pickets denoting a ‘no go zone’
- consultation with Wathaurong representatives to gain consent prior to planting any new trees in designated sensitive areas.

Further measures to manage impacts of cultural heritage include appropriate training for AAA, tenant, and contractor personnel whose duties may pose a risk to these sites or artefacts at the airport.

7.5 AES 2014 – 2019 targets completed.

Table 11 AES 2014 - 2019 targets completed.

Targets	Responsibility
Develop map with the location of the stone scatter site identified on site (to be included in the updated EMP).	PMP
Develop and implement a procedure to minimise the risk of harm to any significant artifact as a result of construction activities on Airport.	PMP

7.6 Targets for 2024 - 2028

Table 12 Targets for 2024 - 2028

Targets	Anticipated Completion Date	Responsibility
Maintain an on-going relationship with the Wathaurong language group of clans	Ongoing	PMP/WHS&E
Complete a detailed risk assessment of activities that could impact cultural heritage within or surrounding Avalon Airport prior to the commencement of all developments.	As required	PMP/WHS&E

8 Air Quality and Emissions

8.1 Objective

To comply with relevant State and Commonwealth legislation and regulations relevant to air quality.

8.2 Environmental Aspects

Emissions from aircraft is the most obvious environmental impact of airports on the environment. However, AAA is not responsible for the emissions created when aircraft are in flight, landing, taking off, or taxiing (as outlined in Section 2.3).

AAA is responsible for ground-based emission sources on the airport which may affect the surrounding environment. The pattern of emissions will vary depending on the intensity of operations and construction activity occurring at the airport.

Air quality is affected when unsustainable amounts of gases, fumes, odours, or dust are emitted into the atmosphere that affect human health and wellbeing, as defined in relevant legislation. Although specific air quality data for Avalon Airport is not available, according to Synnot and Wilkinson (1996) emissions from Avalon Airport would satisfy EPA air quality objectives.

8.3 Potential Environmental Impacts

The main sources of atmospheric pollutants at Avalon Airport (excluding emissions from aircraft) are:

- emissions from ground power units
- emissions from freight and passenger transport vehicles
- fuel transfer to storage tanks and to aircraft
- engine testing
- aircraft painting
- smoke from fire training exercises
- exhaust emissions from construction equipment
- refrigerant emissions
- dust from construction and operations.

Ozone-depleting substances are a range of compounds that have the potential to destroy ozone molecules that occur in the upper atmosphere. The ozone layer serves as a shield to absorb ultraviolet radiation in the stratosphere, protecting organisms on the earth's surface from the harmful effects of excessive amounts of such radiation. Ozone depleting substances include the chlorofluorocarbon compounds used as refrigerant liquids in air conditioning systems and as blowing agents in some foam plastics.

Potential sources of chlorofluorocarbons at Avalon Airport are:

- vehicle air conditioners
- office air conditioners
- refrigeration equipment.

Past and current activities at Avalon Airport have the potential to result in the following environmental impacts:

- public health hazard
- degradation of surrounding habitat
- damage to equipment and materials.

8.4 Measures to Manage Impacts

Emissions to air are identified in AAA's EMP. This inventory of identified emissions is reviewed every two years. The standard used for estimation techniques of air emissions from Avalon Airport is the National Pollutant Inventory Emissions Estimations Techniques Handbook for Airports (Department of the Environment, Water, Heritage, and the Arts 2008).

8.5 AES 2014 – 2019 targets completed.

Table 13 AES 2014 - 2019 targets completed.

Target	Responsibility
Confirm National Pollutant Inventory (NPI) requirement status, then monitor and report as appropriate.	FOM/PMP

8.6 Targets for 2024 - 2028 Table 14 Targets for 2024 - 2028

Target	Anticipated Completion Date	Responsibility
Monitor and report in accordance with the National Pollutant Inventory (NPI) requirements.	On-going	FOM/WHS&E
Review inventory of identified air emissions present at Avalon Airport.	December 2027	FOM/WHS&E
Develop and implement an action plan from the air emission inventory to identify possible reductions through appropriate control measures.	Two months after completion of emission inventory review	FOM/WHS&E
Develop and implement an internal audit process to ensure compliance with licensing requirements for refrigerant recovery/disposal.	December 2027	HoC/WHS&E
Phase out remaining CFC containing air conditioning units.	June 2028	FOM/WHS&E

9 Noise

9.1 Objective

To minimise ground-based noise and comply with relevant legislative requirements.

9.2 Environmental Aspects

AAA is responsible for ground-based noise sources on the airport which may affect the surrounding environment. Although AAA is not responsible for the noise created when aircraft are in flight, landing, taking off, or taxiing (as outlined in Section 2.3), AAA does liaise with the airlines and Airservices Australia to assist in managing noise created by aircraft. The low frequency of aircraft movements at Avalon Airport and the location of the airport away from densely populated areas mean that noise emissions from operations at the airport have a relatively low impact on the surrounding communities.

Noise disturbance can affect all personnel working at the airport, visitors to the airport, and fauna on Avalon Airport. Sensitive noise receptors in the area surrounding the airport include residential housing and commercial areas such as Little River Township and Geelong for certain flight paths. No on-ground noise complaints have been received for Avalon Airport operations.

9.3 Potential Environmental Impacts

Ground based noise can be generated from activities such as (excluding noise from aircraft):

- aircraft refuelling
- operation of plant or machinery
- support facilities such as road traffic
- construction activities
- freight operations
- grounds maintenance.

Past and current activities at Avalon Airport have the potential to result in the following environmental impacts:

- negative health affects to humans.
- disturbance and annoyance to the local residential communities of Little River and Lara along with personnel working at or visiting the airport.
- disturbance to terrestrial and avifauna within and surrounding the airport.

9.4 Measures to Manage Impacts

While AAA does not have responsibility for noise generated by aircraft movement, it is committed to managing noise generated by aircraft. This is supported in the Head Lease, which requires AAA to produce forecasts for noise exposure levels.

An Australian Noise Exposure Forecast (ANEF), which is the noise metric adopted in Australian for land use planning purposes, is published in the airport Master Plan. AAA consults with the following stakeholders regarding the ANEF:

- Airservices Australia
- Avalon Airport Noise Abatement Committee
- City of Greater Geelong
- Committee for Wyndham
- Victorian Government.

The Victorian Planning Provisions (clause 18.02-7S Airports and Airfields) considers the ANEF contours for the assessment of aircraft noise exposure in land use and development planning in areas in the vicinity of the airport.

The Australian Standard AS 2021:2015 (Acoustics – Aircraft noise intrusion – Building siting and construction) applies ANEF zones.

AAA also hosts the Avalon Airport Noise Abatement Committee, which meets every six months to discuss noise complaints and noise abatement procedures. Membership of this committee is determined by the Avalon Airport CEO and currently comprises local government, airlines, and local stakeholders.

AAA's EMP outlines how ground-based noise should be reduced through efficient site planning (e.g., during construction activities, ensuring that operating hours and the speed of trucks are managed). Also, during all works, AAA encourages control of vehicle noise emissions through regular maintenance to manufacturers' specifications.

9.5 Targets for 2024 - 2028

Table 15 Targets for 2024 - 2028

Targets	Anticipated Completion Date	Responsibility
Liaise with Airservices Australia on aircraft noise management strategies.	Ongoing and as new destinations are introduced	HoC/WHS&E/AOM
AAA to continue to facilitate and attend the Avalon Airport Noise Abatement Committee to discuss noise complaints and noise abatement procedures.	Every six months	COO/AOM/HoC/WHS&E

10 Resource Use & Sustainability

10.1 Objective

To promote sustainability and increase awareness of good waste management and resource use principles for all staff, tenants, contractors, and users of the airport.

10.2 Environmental Aspects

Energy

Electricity and fuels are vital to the operation of Avalon Airport. Their manufacture and use create greenhouse gas emissions. The emission of carbon dioxide and other greenhouse gases is of international concern given the potential for climatic variation and associated consequences.

Waste

Wastes produced at Avalon Airport include waste oil, spent chemicals, sewage, packaging wastes and office wastes. A facility for the treatment of sewage from both the airport terminal and the maintenance facilities are present within Avalon Airport grounds. All liquid wastes are treated onsite and reused in an existing and ongoing expanding tree plantation area (AAA 2010).

Natural Resources

Consumption of natural resources such as soil, water and minerals occur at Avalon Airport. These include both renewable and non-renewable natural resources.

10.3 Potential Environmental Impacts

Energy

Activities at the airport that lead to the emission of greenhouse gases include:

- heating/cooling of buildings
- air conditioning
- aircraft operations
- refrigeration
- operation of emergency generators and external power units
- production of steam and hot water
- ground running of aircraft
- testing of aircraft engines
- operation of vehicles during construction and operation of the airport

- lighting of buildings and grounds
- grounds maintenance
- operation of fans and compressors
- operation of pumps
- transport of personnel to and from the airport
- transport of freight to and from the airport.

Waste

Potential sources of waste creation at Avalon Airport are:

- the tank farm and refuelling area (aircraft fuel)
- workshops (drained lubricating, hydraulic and machining oils)
- aircraft painting area (paint and solvents)
- aircraft wash bay (wash water)
- administration and training offices (office papers)
- offices and terminal (food scraps, plastics, glass)
- freight handling areas, warehouses and stores (packaging wastes)
- firefighting training area (fire water)
- construction area (construction wastes)
- sewage treatment plant (treated sewage)
- landscaping and land management (green waste)
- waste collected from incoming overseas aircraft (quarantine waste).

Natural Resources

Activities at Avalon Airport which involve the consumption of natural resources include:

- aircraft painting area (paints and solvents) (note: aircraft painting very rarely occurs at Avalon Airport)
- aircraft wash bays (water and detergents)
- workshops and related areas (chemicals, solvents, oils and greases)
- construction area (construction wastes)
- fire training (water)
- construction area (construction materials and equipment, water for dust control)
- offices (office papers, equipment, and general supplies)
- grounds maintenance (water, herbicides, and pesticides).

Past and current activities at Avalon Airport have the potential to result in the following environmental impacts:

- generation of greenhouse gas and other toxic emissions

- generation of waste, including hazardous waste
- consumption of natural resources.

10.4 Measures to Manage Impacts

Natural Resources and Energy

Efficient use of natural resources and energy serves to both reduce the impact of operations on the environment and to reduce costs of operation. An inventory of greenhouse gas emissions for Avalon Airport has been established through the annual report to NPI. Appropriate performance indicators have been selected and targets established for the reduction in emissions of carbon dioxides and CFCs. The use of natural resources and energy consumption has always been lower than average.

Waste

The central concept of waste management is that of resource efficiency. The waste management approach of AAA considers the hierarchy of preferences for waste management options:

- avoidance
- re-use
- recycling
- recovery of energy
- treatment
- containment
- disposal.

10.5 AES 2014 – 2019 targets completed.

Table 16 AES 2014 - 2019 targets completed.

Targets	Responsibility
Install signage at waste disposal areas (where appropriate).	FOM/PMP
Provide appropriate waste segregation and recycling opportunities at the airport terminals.	FOM/PMP
Complete an energy, water and waste audit to determine the sources and quantity of these resources used at the airport.	FOM/PMP
Develop appropriate resource consumption register, for monitoring of resource use (from the energy, water, waste audit).	FOM/PMP
Develop and implement an action plan to minimise resource consumption and greenhouse gas emissions.	FOM/PMP
Develop and implement a waste management plan for Avalon Airport and communicate to all tenants.	FOM/AOM/PMP

10.6 Targets for 2024 - 2028

Table 17 Targets for 2024 - 2028

Targets	Anticipated Completion Date	Responsibility
Confirm NPI reporting requirements then monitor and report as appropriate.	Ongoing	FOM/WHS&E
Investigate options of recycling or re-using stormwater and rainwater.	Ongoing and for the commencement of new projects	FOM/WHS&E
Investigate feasibility of treating organic and food waste on site.	June 2024	FOM/PMP/WHS&E
15% of the energy consumed by runway, taxiway, and apron lighting to be sourced from renewable energy sources.	December 2026	FOM/WHS&E
25% of the energy consumed by runway, taxiway, and apron lighting to be sourced from renewable energy sources.	December 2028	CEO/COO/WHS&E/FOM
Monitor changes in waste management best practice technologies and approaches.	Ongoing	FOM/WHS&E
AAA to continue to liaise with the Victorian Government regarding public transport options.	Ongoing	CEO/COO

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Appendix 1 Requirements for an Environment Strategy as per the Airport Head Lease (Clause 9.2.1)

Airport Head Lease (Clause 9.2.1) Requirements for an Environment Strategy	Relevant Section of this Environment Strategy
the Lessee's objective for the Head of Property & Compliance of the Premises	Sections 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1
the sources of environmental impact associated with operations at the Premises	Sections 4.3, 5.3,6.3, 7.3, 8.3, 9.3, 10.3
the studies, reviews and monitoring to be carried out by the Lessee in connection with the environmental impact associated with operations at the Premises	Sections 3.6, 4.4, 4.5, 5.4, 5.5, 6.4, 6.5, 7.4, 7.5, 8.4, 8.5, 9.4, 9.5, 10.4, 10.5
the time frames for completion of those studies and reviews and for reporting on that monitoring	Sections 3.6, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5, 10.5
the specific measures to be carried out by the Lessee for the purposes of preventing, controlling or reducing the environmental impact associated with operations at the Premises	Sections 3.6, 4.4, 4.5, 5.4, 5.5, 6.4, 6.5, 7.4, 7.5, 8.4, 8.5, 9.4, 9.5, 10.4, 10.5
the time frames for completion of those specific measures	Sections 3.6, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5, 10.5
details of the consultations undertaken in preparing the strategy (including the outcome of the consultations)	Appendix 4
such other matters (if any) as are reasonably required by the Lessor.	

Appendix 2 Requirements for Consultation as per the Airport Head Lease (Clause 9.9 and 9.10)

Airport Head Lease (Clause 9.9) - Public Comment in a Newspaper	Relevant Section of this Environment Strategy
Stating that the Lessee has prepared a preliminary version of the draft strategy	Appendix 4
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 ninety (90) days after the publication of the notice; and	Appendix 4
Specifying the place or places where the copies will be available for inspection and purchase; and	Appendix 4
Inviting members of the public to give written comments about the preliminary version to the Lessee within ninety (90) days after the publication of the notice; and	Appendix 4
Listing the names of those members of the public; and	Appendix 4
Summarising those comments; and	Appendix 4
Stating that the Lessee has had due regard to those comments in preparing the Environment Strategy; and	Appendix 4
Setting out such other information (if any) about those comments as is reasonably necessary.	
Airport Head Lease (Clause 9.10) - Consultations	**Relevant Section of this Environment Strategy**
In preparation of an Environment Strategy the Lessee must consult and disclose the contents of the Environment Strategy to the relevant local government body, State Government of Victoria, Environment Protection Agency (Commonwealth) and any other person that may be relevant.	Appendix 4
The Environment Strategy submitted to the Lessor must be accompanied by a written statement signed on behalf of the Lessee: listing the names of the persons consulted; and summarising the views expressed by the persons consulted.	Appendix 4

Appendix 3 Environment and Sustainability Policy

Linfox Environmental Sustainability Policy

Linfox works with some of the world's largest and most successful companies, delivering food, resources and medicine on road and rail from an extensive network of warehouse and distribution centres. The values, systems and technology behind our people, fleet and facilities make Linfox one of the most sustainable and efficient logistics companies in Australia and New Zealand.

Scope

This policy applies to all Linfox Logistics workers, agency employees, contractors and visitors.

Our commitment

At Linfox, we must operate in a way that is compatible with the planet and our people. We work to create prosperity in the regions we operate while managing the transition to a sustainable future to protect our planet.

A key focus of our efforts is to reduce our greenhouse gas emissions and thereby help mitigate climate change. In line with Linfox's Leading the Way 2025 business strategy, we strive to Act Sustainably through our GreenFox program. We are working towards carbon neutrality by implementing energy efficiency, water and waste reduction programs and promoting eco-behaviours to minimise our net environmental emissions.

Our actions:

To Act Sustainably, we must:

- Minimise pollution and our impact on the environment and the communities in which we operate.
- Strive for carbon neutrality through the GreenFox greenhouse gas reduction and abatement initiatives, based on renewable energy, greener vehicles and waste management. Continuously seek efficiencies in the use and reuse of resources.
- Expand opportunities for employees to participate in the GreenFox Champions program through initiatives that encourage eco-behaviours, contribute to protecting the environment and mitigate climate change.
- Work collaboratively with our customers, governments and suppliers to reduce carbon emissions and environmental impacts.
- Implement sustainable design and energy efficiency in the development of our facilities.
- Ensure compliance and continuous improvement of environmental systems to reduce environmental risk and minimise pollution.
- Implement procedures and systems to check, review and report our company's environmental sustainability performance.

Mark Mazurek
CEO Linfox Logistics Australia and New Zealand

vision ZERO
ZERO Fatalities
ZERO Injuries
ZERO Motor Vehicle Incidents
ZERO Net Environmental Emissions
ZERO Tolerance of Unsafe Behaviour & Practices

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GreenFox The Linfox commitment to the environment

Appendix 4 Proposed Consultation Process

Avalon Airport Australia will make the preliminary Airport Environment Strategy available to public comment through advertisements in the Geelong Advertiser and the Age newspapers, as well as via the Avalon Airport website.

The preliminary Airport Environment Strategy will be made available as a free download from the Avalon Airport website, for inspection at the City of Greater Geelong offices, and for hard copy purchase through Avalon Airport. In addition, the following organisations were also invited to comment:

- Department of Defence
- City of Greater Geelong (CEO and Environment Manager)
- Department of Transport
- Airservices Australia
- Civil Aviation Safety Authority
- Victorian Government
- Wyndham City Council
- State Parliament Member for Lara
- Avalon Land Care
- Little River Rural Action Group
- Committee for Geelong
- EPA (Victoria)
- Airport Tenants and Communities.

Avalon Airport