PERTH AIRPORT

PRELIMINARY DRAFT ENVIRONMENT STRATEGY

2009 – 2014

PERTH
AIRPORT

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PERTH AIRPORT PRELIMINARY DRAFT ENVIRONMENT STRATEGY 2009–2014

INVITATION FOR SUBMISSIONS

Westralia Airports Corporation (WAC) appreciates the input received to date from key stakeholders and the local community in the preparation of this Preliminary Draft Airport Environment Strategy 2009 (AES). This document has been positively influenced by the information provided in a series of stakeholder workshops held in May and October 2008. WAC now invites further input from our stakeholders, including the local community, regarding the content of this Preliminary Draft AES.

Copies of the Preliminary Draft AES will be made publicly available for review and comment in accordance with the *Airports Act 1996* for a period of 60 business days beginning March 23, 2009 and ending June 18, 2009. The Preliminary Draft AES will be supplied to representatives of Commonwealth, State and Local Government, as well as being available for inspection at the following locations:

- Westralia Airports Corporation Offices, 2 George Wiencke Drive
  (Opposite Domestic Terminals)
- Local Government Offices of Belmont, Kalamunda, Bayswater, Canning and Swan.
- The State Library; and
- Available for download at **www.perthairport.com**

Free electronic copies may be requested from WAC. Hardcopies may be purchased from the WAC office, Level 2, 2 George Wiencke Drive, Perth Airport.

Formal submissions regarding the content of the Preliminary Draft AES must be made in writing to:

AES 2009 Submissions
C/O Westralia Airports Corporation
PO Box 6
Cloverdale WA 6985 or
Email: aes09.submissions@wac.com.au

Submissions must be received by 5pm (WST) on **June 18, 2009**.

DISCLAIMER

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CEO FOREWORD

It is with pleasure that I present Perth Airport's Preliminary Draft Environment Strategy (AES) 2009. This AES outlines the environmental direction including management objectives and action plans for the coming five years, whilst also providing a platform for sustainable environmental management over the longer term.

Perth Airport is a significant infrastructure asset in Western Australia providing the primary gateway to the state for international and domestic visitors and residents alike. To this end, WAC is committed to successfully upgrading Perth Airport to meet consumer demands. The airport is currently undergoing rapid expansion and development as a result. Perth Airport is also fortunate to have natural and heritage values within its boundaries which add to the richness and history of the airport and the local community. WAC recognises the importance of balancing the expansion program with our duty of care for the environment and believe this AES will support this approach.

As we embark on our 12th year of managing the airport environment, sustainability is now at the forefront of thinking and management at Perth Airport. Sustainability is a key theme for this AES and is considered in all aspects of environmental management.

Our vision is "to operate an outstanding airport business providing great customer service". Exceptional environmental management is a key aspect to achieving this vision and we look forward to accomplishing this throughout the term of this AES and beyond.

Brad Geatches
CHIEF EXECUTIVE OFFICER
Westralia Airports Corporation

EXECUTIVE SUMMARY

Perth Airport is the gateway to Western Australia and is one of Australia's major airports, strategically located in relation to Southeast Asia, Europe and Africa. The airport estate totals 2105ha including areas of significant environmental and heritage value.

The Perth Airport Preliminary Draft Environment Strategy 2009 (AES) outlines the strategic direction for environmental management of the estate over the next five years. In context of both a changing environment and an uncertain business climate, the AES is complemented by the Preliminary Draft Master Plan 2009 which outlines the long-term direction for land use at Perth Airport.

It is significant to note that since the first AES was developed in 1999, the term 'sustainability' has been expanded to include more than just environmental sustainability. Sustainability is a now a fundamental aspect of WAC's business operations as well as its corporate objectives and plans for growth.

In recent times, sustainability and the environment have escalated not only in the concerns of the community but also in the legislation being passed by governments. Legislation proposed for introduction early in this strategy period, the Carbon Pollution Reduction Scheme aims for a 5% reduction of greenhouse gas emissions in Australia by 2020. WAC realises its day-to-day business operations will be scrutinised by a broad stakeholder base and aims to lead by example in its environmental management of a diverse and valuable estate.

Already, a number of initiatives developed by preceding Environment Strategies are delivering returns and proving fundamental to successful environmental management. Of particular note, the relationships and collaboration with a broad stakeholder group, including community groups, has been integral to the success of rehabilitation activities within the conservation precincts and these relationships will continue to develop and broaden over the next five years. WAC's approach to stakeholder engagement foreshadows a number of policy directions being explored by the Commonwealth Government at the time of the development of this strategy.

Good practice environmental management systems and processes are already in place and these will continue to be progressively improved as new research and technology becomes available. Impact assessment and monitoring of factors such as soil, water and air quality will continue to be undertaken and results will be reviewed to ensure appropriate and effective management strategies are actioned.

A key initiative of this strategy is to produce an ultimate development vision for environmental management at Perth Airport so at the expiration of the lease in 2096, the estate retains the key environmental attributes existing today. Much research and work has already been completed to understand the true value of the airport estate, both from an environmental and cultural heritage perspective. Action and management plans are already in place to manage the Conservation Precincts as well as to manage key attributes such as soil, water and noise. Each WAC employee is aware of the part they play in environmental management and is trained to undertake their role with minimal environmental impact.

The opportunity exists to develop a comprehensive conservation plan with the aspiration to retain the key existing environmental attributes through to the end of the lease period. This plan will provide a platform for the environmental guidance of the airport over a longer timeframe than is currently addressed and will ensure airport developments and projects are structured to achieve minimal future environmental and societal impacts.

The ever-changing environment and ongoing scientific research are constantly reviewed to provide WAC with the most up-to-date information. Plans are subsequently structured to accommodate changes as information improves and technology progresses. WAC recognises the opportunity to provide and establish an effective response to climate change and this will be a priority in the early stages of this AES.

To ensure WAC operates in a transparent and accountable manner, regular discussion with key legislators and regulators takes place. WAC is at the forefront of legislative updates and changes and provides input when relevant to issues affecting the airport.

The key objectives of the Preliminary Draft AES 2009 include:

- promoting better understanding of environmental values at Perth Airport;
- providing community and corporate leadership in environmental excellence;
- ensuring WAC remains a responsible and valuable corporate citizen and neighbour;
- applying the concept of Sustainability to aspects of airport business;
- ensuring Perth Airport operates and grows in an ecologically sustainable manner; and
- ensuring compliance to legislative requirements.

Despite an uncertain economic climate and the changing environment, the opportunity exists for WAC to address current environmental issues and to demonstrate its leadership in environmental excellence. Embedding and strengthening many of its existing environmental action plans as well as developing a longer term focus with an ultimate conservation plan will place WAC in a prime position to deliver sustainable operations. Maintaining positive stakeholder relationships will assist WAC in continuing to achieve its environmental and business objectives.

ABBREVIATIONS

ABC	Airport Building Controller
A(BC) R's	*Airport (Building Control) Regulations 1996*
A(EP) R's	*Airport (Environment Protection) Regulations 1997*
ACI	Airport Council International
AEO	Airport Environment Officer
AER	Airport Environment Report
AES	Airport Environment Strategy
ALC	Airport Lessee Company
ANEC	Australian Noise Exposure Concept
ANEF	Australian Noise Exposure Forecast
ANEI	Australian Noise Exposure Index
ANMCC	Aircraft Noise Management Consultative Committee
AQMP	Air Quality Management Plan
ARFF	Aviation Rescue and Fire Fighting
ASS	Acid Sulphate Soils
CAMBA	China Australia Migratory Bird Agreement
CPRS	Carbon Pollution Reduction Scheme
CEMP	Construction Environmental Management Plan
DEC	Department of Environment and Conservation
DEWHA	Department of Environment, Water, Heritage and the Arts
DITRDLG	Department of Infrastructure, Transport, Regional Development and Local Government
EGR	Engine Ground Running
EMF	Environmental Management Framework
EMS	Environmental Management System
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESR	Environmental Site Register
FESA	Fire and Emergency Services Authority
GHG	Greenhouse Gas
ICM	Integrated Catchment Management
IWCM	Integrated Water Cycle Management
IWCMP	Integrated Water Cycle Management Plan
JAMBA	Japan-Australia Migratory Bird Agreement
MDP	Major Development Plan
MP	Master Plan
NATA	National Association of Testing Authorities
NEP(AQ)M	National Environment Protection (Ambient Air Quality) Measure
NEP(ASC)M	National Environment Protection (Assessment of Site Contamination) Measure
NFPMS	Noise and Flight Path Monitoring System
NGER	National Greenhouse and Energy Reporting Act 2007
NGO	Non Government Organisations
NMD	Northern Main Drain
NMT	Noise Monitoring Terminals
NPI	National Environment Protection (National Pollution Inventory) Measure
OEMP	Operational Environmental Management Plan
OLS	Obstacle Limitation Surface
OPA	Ozone Protection and Synthetic Greenhouse Gas Management Act 1989
PBP	Perth Biodiversity Project
$PM_{2.5}$	Particulate Matter 2.5 microns or less
PM_{10}	Particulate Matter 10 microns or less
RNE	Register of the National Estate
SMD	Southern Main Drain
SCP	Swan Coastal Plain
tCO_{2-e}	Tonnes of carbon dioxide equivalent
The *Act*	*Airports Act 1996*
The *Regulations*	*Airport (Environmental Protection) Regulations 1997*
WAC	Westralia Airports Corporation
WAPC	Western Australian Planning Commission
WEMP	Water Efficiency Management Plan
WONS	Weeds of National Significance

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1. INTRODUCTION

Perth Airport is one of Australia's major airports; it is the fourth largest based on passenger numbers and is the international, domestic and regional gateway to Western Australia. The airport site is also an important commercial centre within the Perth Metropolitan region. Information about the location and climatic region is included in Appendix A, Section 1.

In 1997 the Commonwealth Government entered into a 50 year lease with a further 49 year lease option with WAC to manage and develop Perth Airport. WAC's vision is "to operate an outstanding airport business providing great customer service".

This strategy represents the third Airport Environment Strategy (AES) developed by WAC and builds on the achievements of previous strategies. Additionally, this AES sets to establish a platform for long-term sustainable environmental management beyond the five year term.

1.1 SCOPE OF THE AIRPORT ENVIRONMENT STRATEGY (AES)

The Preliminary Draft AES 2009 has been produced in accordance with the *Airports Act 1996*. The key objectives of this AES are outlined in the Executive Summary and the environmental management aspects covered in the document include:

- land use planning;
- stakeholder engagement;
- climate change and resource use;
- soil and water;
- conservation;
- air quality;
- heritage; and
- noise.

Each environmental aspect is discussed in more detail in the relevant chapter and includes an overview of each aspect; management objectives; and a five year action program. Measurable and auditable actions are included and strategy commitments are confined to the five year action plan and these supersede all commitments made in previous strategies.

Action items are categorised to indicate the schedule for implementation. Categories include:

- (1) – Ongoing throughout AES term;
- (2) – Short-term implementation i.e. first two years of AES term;
- (3) – Mid-term implementation i.e. third to fourth year of AES term; and
- (4) – Long-term implementation i.e. Fifth year or beyond AES term.

Each chapter also provides a review of the existing environment or current situation for each aspect as well as outlining both the external and internal influences. The Annual Environment Report should be referred to for the most recent information.

1.2 OUT OF SCOPE

Several aspects of environmental management at the airport are outside the scope of this document as they are controlled by other legislation and managed by specific organisations. This includes:

- management of noise related to aircraft in-flight, at take off or taxiing, although information on current management practices has been provided; and
- management of air quality impacts from aircraft is also excluded.

These issues are managed directly by the Commonwealth Department of Infrastructure, Transport, Regional Development and Local Government (DITRDLG) under the *Air Navigation Act 1920, the Air Navigation (Aircraft Noise) Regulations 1984 and the Air Navigation (Aircraft Engine Emissions) Regulations.*

1.3 AIRPORT ENVIRONMENT STRATEGY ACHIEVEMENTS FROM PREVIOUS YEARS

Previous Environment Strategies have provided the framework for WAC to manage and continually improve the environmental management of Perth Airport. A full summary of the highlights can be found in Perth Airport's Annual Environment Report. The most significant achievements from the Airport Environment Strategy 2004 period are summarised below.

TABLE 1: KEY ENVIRONMENTAL ACHIEVEMENTS DURING THE AES 2004 – 2009 PERIOD

2004	• Established the Perth Airport Environmental Consultation Group.
2005	• Worked with the City of Belmont to develop and undertake a new revegetation project at Fauntleroy Basin. • Initiated community partnership to involve volunteers from both the Perth and international communities in on-the-ground environmental management projects at Perth Airport. • Conducted extensions to the track rehabilitation program and additional revegetation works in the constructed wetland in Conservation Precinct 5.
2006	• Established the Major Tenant Environment Forum. • Initiated a recycling trial for paper and cardboard, in consultation with Amcor Recycling Australasia. • Finalised and approved management plans for Conservation Precincts 5 and 7. • Established a Risk Management Sub-Committee. • Developed and finalised the Environmental Risk Register. • Implemented a new airport-wide incident management system, incorporating health, safety, security and environment.
2007	• Introduced recycling at both terminals in response to the success of the paper recycling trial paper. • Planted over 15,000 trees and shrubs at the Constructed Wetland assisted by students from local primary schools. • Six tenants provided Perth Airport with Environmental Management Plans (EMPs) during 2006/07, increasing tenant EMP compliance to 67%.
2008	• Developed and implemented the Perth Airport Sustainability Strategy. • Established on-site nursery for propagation of provenance stock. • Completed fauna surveys in Conservation Precincts and macro-invertebrate surveys in key wetlands. • Developed and implemented the Water Efficiency Management Plan. • Initiated development of Celebrating Aboriginal Culture at Perth Airport (a plan for the management of Aboriginal culture and heritage). • Developed the Environmental Management Framework.

Progress against all actions from the previous Strategy is detailed in Appendix B.

1.4 KEY LESSONS FROM PREVIOUS AIRPORT ENVIRONMENT STRATEGIES

ISSUE/ACTION	OUTCOME/LEARNING	MANAGEMENT APPROACH DURING AES 2009
Direct stakeholder engagement	Value in facilitating routine meetings with stakeholders providing: • direct line of communication; • clearer understanding of key influences and drivers between WAC and stakeholder groups; and • opportunity to receive feedback from stakeholders and incorporate into environmental planning and management	Continue with existing stakeholder forums and review effectiveness in collaboration with stakeholders
Process implementation	Improvements in formalising environmental review process such as the environmental screening checklist for land use approvals. This has provided improved outcomes regarding consistency and reliability of environmental assessment	Continue drive towards an effective and efficient process such as progress of electronic systems using the intranet and databases to supersede current manual and paper based system
Monitoring and reporting	Expansion of surface and groundwater monitoring network providing broad understanding of water quality across the estate	Increased use of monitoring data to influence management approach
Auditing of tenants	Routine auditing of tenants has served to raise environmental standards across the estate	Continue and strengthen audit program in this AES period
Information collection and availability	Preliminary introduction of a GIS system has proved an effective process for coordinating the large amount of data required in the Environmental Site Register	Continue to develop GIS capabilities to assist in environmental assessment and management
Clarity of expectation for operators of undertakings on airport	Some aspects of the AES applicable to operators of undertakings were ambiguous or unclear in context and therefore difficult to enforce	This ES accurately defines expectations for management of environmental issues for those operating at Perth Airport and therefore required to comply with the AES
Accuracy in projecting five year actions and emerging trends in environmental management	Long term actions may become obsolete or no longer appropriate based on advances in research and technology, higher priority issues arise during strategy period	Improved integration and implementation of AES commitments through AER, reporting to Commonwealth and public via AER

1.5 STRUCTURE OF THE AES

The following sections of the AES, excluding Environmental Management Framework and Land Use Planning are structured as follows:

- Introduction;
- Background;
- Five Year Action Program – outlines key targets and timeframes for implementation;
- External Influences – identifies key influences external to WAC's control with relevance to environmental management at Perth Airport;
- Internal Influences – identifies key influences on WAC approach to environmental management within direct ability to control; and
- Current Management – outlines existing management actions, correct at the time of publication.

Additional reference material relevant to the sections is incorporated as appendices.

1.6 AES COMMITMENTS

The Five Year Action Program provides high-level commitments for the term of the strategy. Details contained in other areas of the AES 2009 are provided as supporting information and are not intended as commitments.

As the AES 2009 is a five year strategic planning document, WAC will set and report more specific targets in the Annual Environment Report.

Commitments made in the AES 2009 supersede all commitments made in previous Environment Strategies for Perth Airport.

2. ENVIRONMENTAL MANAGEMENT FRAMEWORK (EMF)

Westralia Airports Corporation is committed to protecting the environment in accordance with its key strategic planning documents, including the Master Plan (MP), AES and the Sustainability Strategy. This commitment encompasses not only full compliance with all applicable laws and regulations, but also the encouragement of employees, tenants, contractors, suppliers and customers to exercise exemplary environmental practices that benefit the wider community.

Westralia Airports Corporation has structured business management processes, these are documented in the Perth Airport Business Management Framework (BMF - see Appendix A, Section 2) of which environmental management is a key component.

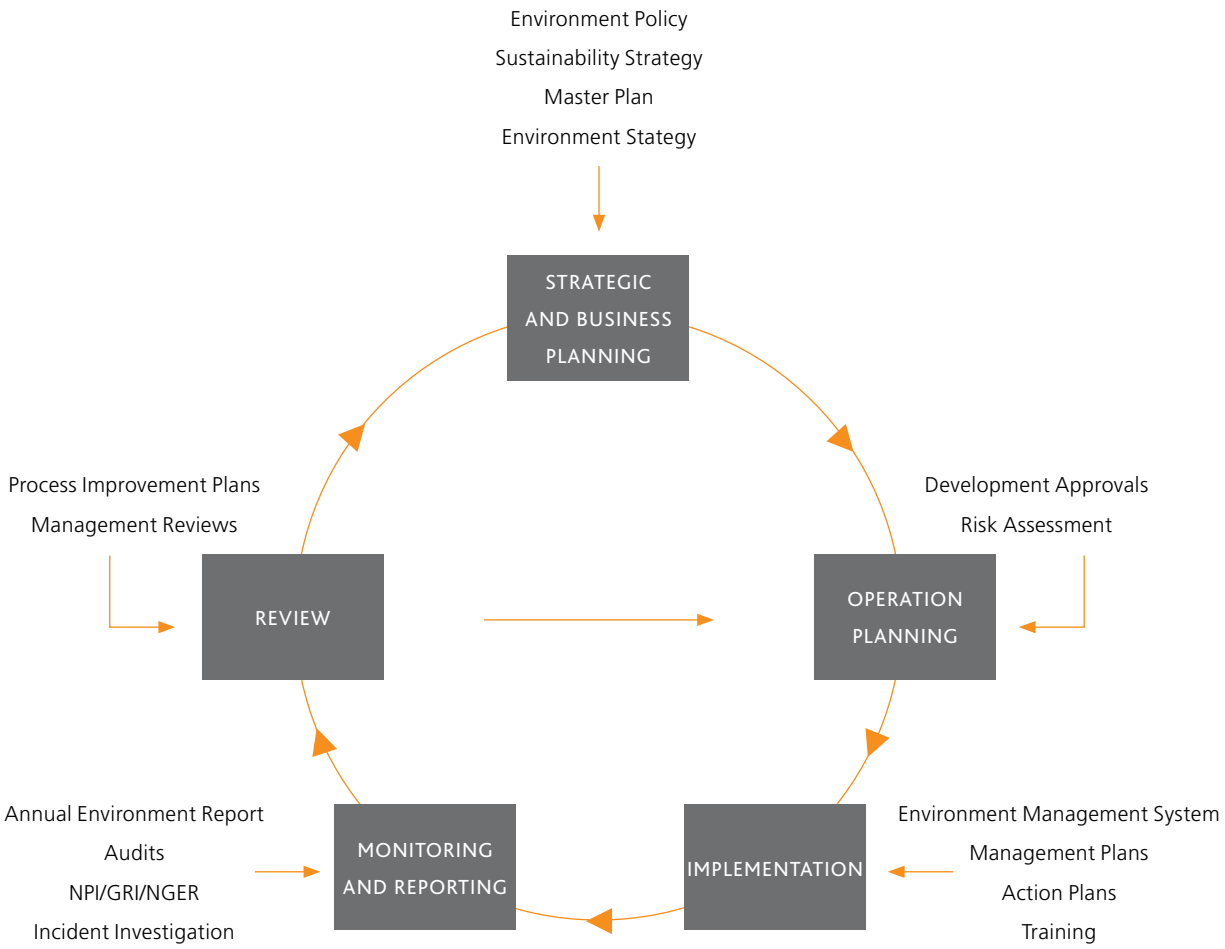
Westralia Airports Corporation has established an Environmental Management Framework (EMF) which summarises the Company's overarching approach to environmental management. It describes the Company's approach to compliance with legislation and other environmental management requirements, how WAC identifies, investigates and implements environmental opportunities and initiatives in accordance with Perth Airport's Environment Policy, Sustainability Strategy and Corporate Objectives.

The EMF is reviewed annually by the Executive Team and the Board of Directors Risk Management Committee and is illustrated in Figure 1.

Importantly the EMF shows the linkages, purpose and hierarchy of the various plans, policies and systems used in environmental management at Perth Airport. The following are key elements of WAC's EMF:

- Environmental Policy
- Strategic and Business Planning
- Operational Planning
- Implementation
- Monitoring and Reporting
- Review and Continuous Improvement
- Legislative Context
- Environmental Responsibilities

FIGURE 1: ENVIRONMENT MANAGEMENT FRAMEWORK



2.1 ENVIRONMENTAL POLICY

The Environmental Policy is the cornerstone of the EMF and identifies WAC's intentions, commitments and principles of environmental management.

PERTH AIRPORT ENVIRONMENTAL POLICY

OUR VISION

To operate and grow Perth Airport in a manner that reduces our ecological footprint through developing innovative solutions and management techniques and engaging our staff, contractors, tenants and the wider community in our growth.

OUR LEADERSHIP ROLE

Westralia Airports Corporation recognises and accepts our position of responsibility consistent with our standing as a high profile Western Australian industry leader and operator of an infrastructure asset of local and regional significance. Accordingly we will:

- operate and manage our activities and assets in a manner consistent with sound environmental management principles;
- actively engage our people, tenants, community and members of the aviation industry in environmental management in a local, regional and global context;
- support research in understanding and improving our environment;
- be innovative in our approach to the complex relationship between our aviation needs, land development opportunities and environmental values; and
- have vision and foresight for emerging trends in environmental issues pertaining to our aeronautical and land development activities, resource management, ecological and heritage values.

OUR COMMITMENT

Continual improvement in environmental management is integral to the way we do business. This will be achieved by:

- viewing compliance to legal standards as a formality, where practicable we will operate and achieve above minimum standards;
- operating our environmental management process in an open, consultative and transparent manner;
- delivering in full on our environmental objectives and targets; and
- developing and implementing resource use reduction programs, in particular water and energy, commensurate with corporate objectives and growth targets.

All WAC employees are expected to be aware of the provisions of the policy and understand the importance of maintaining Perth Airport's environmental standards.

2.2 STRATEGIC AND BUSINESS PLANNING

Four key planning processes set the strategic direction for environmental management of Perth Airport:

(A) WAC BUSINESS PLANNING PROCESSES, VISION AND OBJECTIVES

Integral to the business planning processes for Perth Airport is the preparation of an annual Business Plan. This plan identifies:

- financial status of the business;
- target financial position;
- corporate direction; and
- processes to achieve targets.

An important component of the Business Plan is the feasibility assessment for proposed projects and new expenditure. Conservation management activities are considered and incorporated within the Business Plan from resourcing achieved through WAC's business activities.

Business decisions must be aligned to the Corporate Vision and Objectives as outlined below:

WAC'S VISION IS:

"To operate an outstanding airport business providing great customer service"

WAC'S CORPORATE OBJECTIVES:

Increase shareholder value by:

- conducting our business in a commercially astute manner;
- ensuring our facilities & services are safe & secure for all;
- helping our airline & other business partners develop their business;
- meeting the needs of our customers;
- providing our employees with satisfying employment;
- conducting operations in an ecologically sustainable manner;
- identifying & managing risk;
- facilitating travel, trade & industry in Western Australia; and
- ensuring we are a responsible & caring corporate citizen.

(B) SUSTAINABILITY STRATEGY

The Sustainability Strategy promotes an operating ethos considering social, environmental and economic factors in parallel to ensure present needs are not met at the expense of future generations. The Strategy is reviewed on an annual basis to continue to broaden its scope and focus in line with the corporate direction.

Whilst the AES provides broad strategic direction, the Sustainability Strategy provides substantially more detail, including actions down to a tactical level.

(C) AIRPORT MASTER PLAN (MP)

The Master Plan (MP) provides a guide to the long-term planning and development of Perth Airport.

Environmental factors have been integrated into the MP with environmental impacts of proposed development plans broadly described. All development occurring within the Perth Airport Estate must be in accordance with the principles of the MP.

Development of a MP is required under the *Act* and must be updated every five years.

(D) AIRPORT ENVIRONMENT STRATEGY (AES)

The AES provides the strategic direction for environmental management at Perth Airport. The AES determines areas of environmental and heritage significance, details a systematic approach to environmental management and ensures that the environmental impacts of operations at Perth Airport are evaluated, mitigated and monitored.

2.3 OPERATIONAL PLANNING

Westralia Airport Corporation has two key operational planning tools addressing environmental management outcomes:

- development approval processes; and
- risk assessments.

(A) DEVELOPMENT APPROVALS AND MAJOR DEVELOPMENT PLANS

All developments at the airport are subject to approval as required under the *Act* and *Airports (Building Control) Regulations 1996*. Other than for routine maintenance activities, a building permit, works permit or demolition authorisation must be obtained from the Department of Infrastructure, Transport Regional Development and Local Government (DITRDLG) prior to works commencing. Prior to issuing their approval, the DITRDLG must receive the consent of WAC confirming that the proposed activity is consistent with the AES and that environmental impacts have been assessed with an appropriate level of management control to ensure protection of the environment. Environmental conditions can be placed on approvals by the Airport Building Controller (ABC) in consultation with the Airport Environment Officer (AEO) and WAC.

The *Act* also establishes a rigorous identification and assessment process for major airport developments, requiring a Major Development Plan (MDP) to be produced. There are a number of environmental triggers for an MDP under Section 89 of the *Act*. Developments undertaken in accordance with an approved MDP may incorporate environmental requirements for WAC and/or tenants. WAC actively works with tenants and the DITRDLG to ensure ongoing compliance to Ministerial conditions arising from MDP's.

Development approvals and associated conditions form part of the operational planning processes integrated into WAC's EMF. These processes are described further in Perth Airport's Environmental Management System (EMS).

(B) RISK ASSESSMENT

Westralia Airport Corporation adopts a proactive approach to risk management. The Risk Management Policy integrates the principles of risk management to minimise reasonably foreseeable disruption to operations, harm to people, damage to the environment or property, and financial impacts.

The Risk Management Framework formalises the risk management processes to identify and control the risks associated with operational activities. Key environmental risks identified on the airport estate and forming the basis of operational planning include:

- ecosystem disruption and the subsequent loss of flora and fauna;
- changes in surface hydrology affecting wetland systems;
- disruption of sites of natural and Aboriginal significance;
- air pollution from vehicles and tenants;
- waste generation and inappropriate disposal;
- groundwater and soil pollution; and
- surface water pollution.

Once key environmental risks have been identified, controls are established and implemented to manage and reduce associated impacts to acceptable levels.

2.4 IMPLEMENTATION

Tools used at Perth Airport to achieve the objectives and implement strategic and operational plans include the EMS, Environmental Management Plans (EMPs), the Aerodrome Manual, and various training processes.

(A) PERTH AIRPORT ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

To ensure the procedural aspects of the EMF are effectively managed and implemented, WAC has developed an EMS in accordance with the principles of AS/NZS ISO14001:2004. This EMS provides a comprehensive, structured and reliable approach to environmental management and continuous improvement.

Westralia Airports Corporation has established operational procedures, work instructions, forms and registers to address environmental management issues such as risk mitigation and incident prevention, and to assist in formalising environmental management processes.

Formalised reviews of the EMS are undertaken to ensure procedures remain relevant.

(B) OPERATIONAL ENVIRONMENTAL MANAGEMENT PLANS (OEMPS)

Airport tenants are responsible for conducting their activities in an environmentally responsible manner in compliance with the *Regulations* and other applicable legislation.

Tenants are required to develop OEMPs, demonstrating how they will comply with environmental regulations. At WAC's discretion, tenants with low risk of environmental impact may be exempt from this requirement. Tenant OEMPs must:

- be developed to a standard acceptable to WAC;
- be submitted for assessment and approved by WAC prior to operations commencing for new tenants or within six months of this document being approved for existing tenants;
- include the requirement to report on their environmental management performance to Westralia Airports Corporation on an annual basis; and
- identify and manage the environmental impacts and risks of the tenant's activities.

(C) CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLANS (CEMP)

Westralia Airports Corporation requires the preparation of a CEMP where the potential for environmental impact exists during the construction phase of any project on airport land.

Guidelines for both major and minor CEMPs have been produced to assist construction contractors in developing good quality and appropriate management plans. Assessment by WAC of the potential environmental risks determines which CEMP is required.

Construction Environmental Management Plans are based on the ISO14001 system and involve the systematic evaluation of risk and the implementation of measures to control identified risks. CEMPs must be developed to a standard acceptable to WAC and they must be submitted for assessment and approved by WAC prior to works commencing.

(D) AERODROME MANUAL

The Aerodrome Manual details the activities and actions required to ensure airfield operations are maintained to the required standard. Requirements with an environmental implication, such as:

- management of bird and animal hazards;
- obstacle control including management of vegetation height; and
- management and handling of hazardous materials

are included in this Manual.

(E) EMERGENCY RESPONSE

The Airport Emergency Plan (AEP) ensures effective and efficient response to emergency or serious incidents. This plan identifies a range of potential emergency situations including spill management and provides specific response procedures. The plan is regularly reviewed by senior management and updated annually, or following an emergency event.

(F) TRAINING PROCESSES

To promote effective environmental management, all WAC employees are aware of their environmental roles and responsibilities, including conformance with policies and procedures. Training and communication processes and systems have been established and an induction program for new employees has been created to ensure employees meet this requirement.

Westralia Airports Corporation has developed an Environmental Management Framework which details the actions that will be undertaken to ensure employees are appropriately trained. Records of training are maintained.

2.5 MONITORING AND REPORTING

It is essential that environmental and management actions are monitored for effectiveness and reported to key stakeholders. All records on the condition of the Perth Airport estate are maintained within the Perth Airport Environmental Site Register. WAC has a number of tools to achieve this, as described below.

(A) ENVIRONMENTAL MONITORING

A number of programs have been established to monitor the health of the environment on the estate. Details for the environmental monitoring program at Perth Airport are outlined in Appendix A, Section 2, Table 4.

Monitoring is undertaken by qualified personnel and conducted in accordance with the relevant Australian or industry standard.

(B) MANAGEMENT SYSTEM MONITORING

Audits are carried out at Perth Airport to assess the level of tenant and contractor compliance with environmental management requirements.

Westralia Airports Corporation conducts tenant and contractor audits to assess compliance with their operational or construction EMPs on an annual, biennial or periodic basis. Audit schedules are determined in consultation with the AEO.

Internal audits of WAC's EMS are conducted to provide assurance that internal processes are being effectively implemented and maintained. These audits are conducted in accordance with a documented internal audit schedule that is developed on an annual basis by the Environment Manager.

(C) ANNUAL ENVIRONMENT REPORT (AER)

In accordance with the *Regulations*, WAC is required to submit an AER to the Secretary for Infrastructure, Transport, Regional Development and Local Government.

The AER includes the following content:

- an overview of achievements throughout the year;
- progress of AES commitments;
- compliance with legislative requirements;
- monitoring data;
- details, outcomes and courses of recovery of any major environmental incidents; and
- initiatives and actions proposed for the next reporting period.

Tenants that have OEMPs in place are required to submit an AER to WAC within 30 days of the end of the financial year including:

- status of commitments in EMPs;
- results of environmental monitoring;
- environmental incidents and complaints including prevention and corrective action;
- status of EMP audit actions; and
- other environmental initiatives or issues with potential for environmental impacts to Perth Airport.

(D) EMISSIONS REPORTING

The National Pollutant Inventory (NPI) is a publicly available internet-based database identifying emissions to the environment. Perth Airport reports annually to the NPI under the *National Environment Protection (National Pollutant Inventory) Measure 1998*.

In addition, WAC voluntarily reports under the internationally recognised sustainability reporting standard, the Global Reporting Index (GRI). The *National Greenhouse and Energy Reporting Act 2007 (NGER)* includes greenhouse gas (GHG) emissions and energy consumption, discussed further in Chapter 6 – Climate Change and Resource Use.

(E) INCIDENT INVESTIGATION

Westralia Airports Corporation has an Incident Reporting and Investigation Management System which records incident and complaint details. This process provides specific details on how incidents and complaints are managed and a Non-Conformance and Corrective Action procedure describes the process for addressing environmental non-conformities and the identification and tracking of associated preventative and corrective actions.

A summary of environmental incidents and complaints is prepared and presented monthly to the AEO, quarterly to Perth Airport's Board of Director's Risk Management Committee and is publicly available annually in the AER.

(F) AIRPORT ENVIRONMENT OFFICER REPORTING

Westralia Airports Corporation staff meet monthly with the AEO to review matters relevant to environmental management at the site. Standing agenda items include:

- incidents;
- tenant Audits;
- status of AES and AER initiatives; and
- new and terminating subleases and licenses.

(G) ENVIRONMENTAL SITE REGISTER (ESR)

In accordance with Section 6.02 of the *Regulations*, WAC maintains a written record of the environmental condition of the airport and its general environmental management through the Environmental Site Register (ESR).

The ESR incorporates monitoring data, information regarding existing pollution, details of remedial plans and details of the nature, date and place of any occurrence of environmental significance (detrimental or beneficial) at the airport. Changes made to the ESR are reported in the AER.

2.6 REVIEW AND CONTINUOUS IMPROVEMENT

The planning, implementation, monitoring and reporting stages of the EMF are dynamic in nature and therefore review processes are important in maintaining effectiveness and relevance.

Westralia Airports Corporation promotes a culture of continuous improvement throughout the organisation and this is supported by its annual Management Review Process. This process enables senior management to assess current issues and evaluate the effectiveness of the management system and environmental performance. Following review, Process Improvement Plans are developed and implemented to ensure continuous improvement is achieved. Risk Treatment Plans developed under the Risk Management Framework are also important in achieving continuous improvement.

2.7 LEGISLATIVE CONTEXT

Westralia Airports Corporation and its tenants have a diverse range of environmental obligations as a result of legislation, licences, lease conditions, permits and development approvals.

Legal and other requirements applicable to WAC are managed and maintained through an environmental legal compliance system, including a compliance management database and a Register of Legal and Other Requirements, as part of WAC's EMS. The database also facilitates monitoring the status of management plans, approvals, licences and permits required for the organisation.

The legislative context established for environmental management of Perth Airport includes:

- *Airports Act 1996*, Part 5 and Part 6 ("*Act*");
- *Airports (Environmental Protection) Regulations 1997 ("Regulations")*;
- *Environment Protection and Biodiversity Conservation Act 1999 ("EPBC Act")*; and
- *National Environment Protection Council Act (1994) ("NEPC Act")*.

More information about each of these Acts/Regulations is included in Appendix A, Section 2. It is of note, that a number of National Environment Protection Measures (NEPMs), produced by the NEPC, are directly relevant to Perth Airport, these include Ambient Air Quality, National Pollutant Inventory and Site Contamination.

2.8 ENVIRONMENTAL RESPONSIBILITIES

Environmental management at Perth Airport is the responsibility of all staff, airline operators, business partners and contractors. The broad responsibilities for environmental management are outlined in Figure 2 and described below:

(A) WAC'S RESPONSIBILITIES

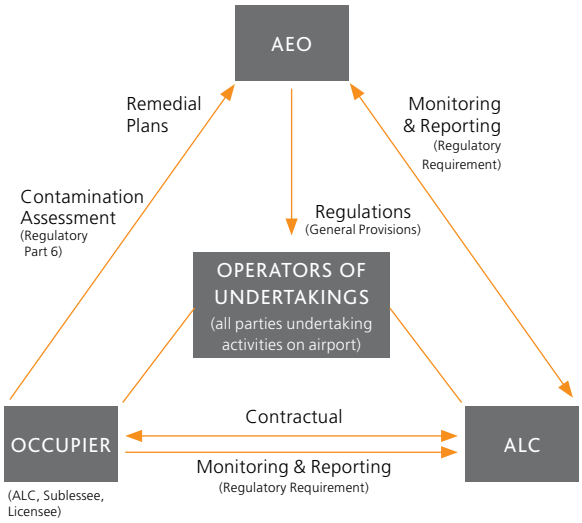
Westralia Airports Corporation, as the Airport Lessee Company (ALC), has a responsibility, to develop and operate in accordance with an approved Environment Strategy. Under Section 115(2) of the *Act*, the Environment Strategy must:

- ensure all operations are undertaken in accordance with relevant environmental legislation and standards;
- establish a framework for assessing compliance; and
- promote the continual improvement of environmental management at the airport.

The structure of responsibilities for environmental management at WAC is depicted in Figure 3.

Westralia Airports Corporation staff responsible for environmental management will have appropriate industry recognised qualifications, training and/or experience.

FIGURE 2: ENVIRONMENTAL RESPONSIBILITIES UNDER THE *AIRPORTS (ENVIRONMENT PROTECTION) REGULATIONS 1997*



Key WAC responsibilities are attributed as per Appendix A, Section 2.

(B) TENANT RESPONSIBILITIES

Airport tenants, as operators of undertakings at airports, must take all reasonable and practicable measures to prevent the generation of pollution. Tenants must comply with relevant legislation, the AES and WAC's Environmental Policy. Tenants are required to develop and comply with an OEMP. The OEMP must be developed to the satisfaction of WAC, consistent with the Perth Airport Environmental Management Plan guidelines. Tenants identified as posing minimal risk to the environment may be exempted from developing an OEMP at the discretion of WAC.

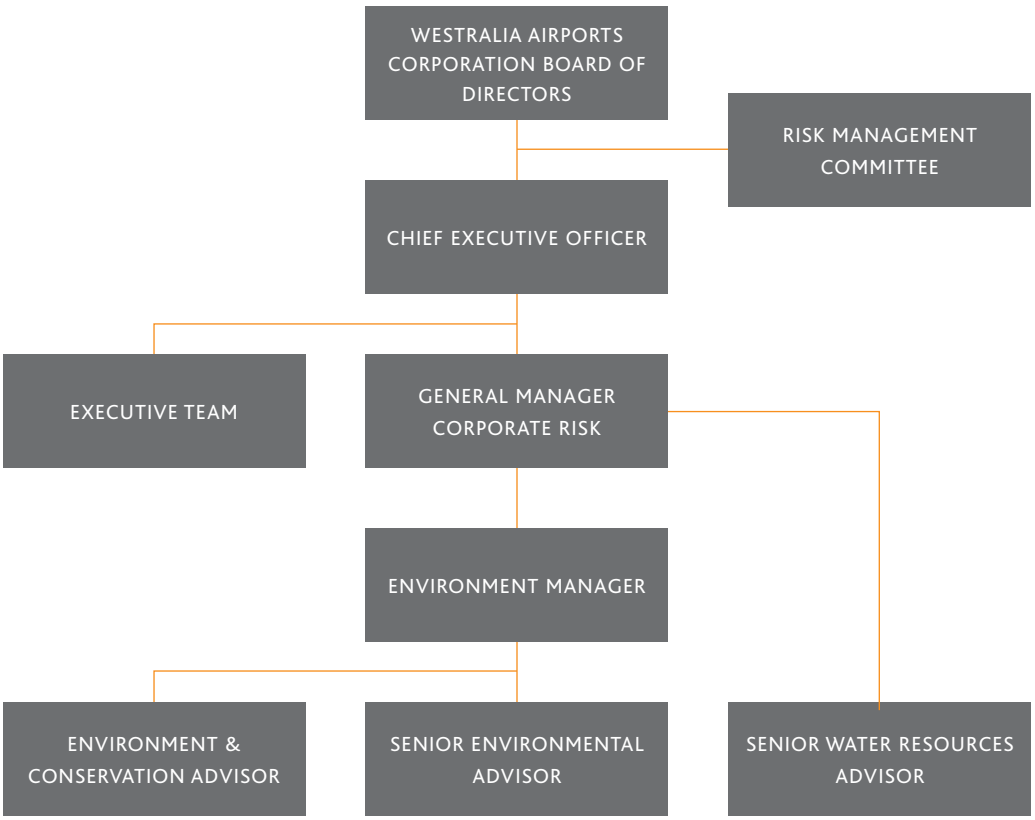
(C) CONTRACTOR RESPONSIBILITIES

All contractors operating on the airport estate are deemed to be operators of undertakings at airports and must take all reasonable and practicable measures to prevent the generation of pollution. Contractors engaged by WAC are required to comply with the AES, Environmental Policy and EMF. Where activities may result in potential environmental risks, a CEMP must be developed and implemented by the contractor, to the satisfaction of WAC.

(D) DEPARTMENT OF INFRASTRUCTURE TRANSPORT, REGIONAL DEVELOPMENT AND LOCAL GOVERNMENT RESPONSIBILITIES (DITRDLG)

The DITRDLG is responsible for administering the *Act* and *Regulations*, as well as appointing and overseeing the role of the AEO. The AEO is a statutory office holder appointed by the Secretary of the DITRDLG and is responsible for day-to-day administration of the *Regulations*.

FIGURE 3: CURRENT ENVIRONMENTAL MANAGEMENT STRUCTURE



3. STAKEHOLDER ENGAGEMENT

3.1 INTRODUCTION

Operations and activities at Perth Airport are integral to the continued economic and social development of Western Australia. WAC recognises their role as a key member of the Western Australian community. Close engagement with stakeholders and interest groups is maintained through an established stakeholder engagement program.

Westralia Airports Corporation has established the following objectives to facilitate open and consultative relationships through:

- transparent and inclusive engagement with airport stakeholders and the wider community on current and emerging environmental issues towards the long-term sustainability of the airport's environmental values; and
- promoting continuous improvement of the organisation's stakeholder engagement processes.

3.2 BACKGROUND

Airport development, both aviation and non-aviation related has experienced growth well in excess of forecast during the period of the AES 2004. Commensurate with this growth, WAC has recognised the importance of enhancing direct lines of communication with key stakeholder groups pre-empting a number of legislative initiatives foreshadowed in the 2009 Commonwealth Aviation Green Paper. Stakeholder engagement is fundamental to business success, particularly for a business such as WAC with a broad and diverse range of operations.

Perth Airport has a broad stakeholder base due to the distinctive features associated with the estate. Such features include:

- a blend of built and natural environment and cultural heritage attributes;
- a site of significance for the WA economy and an important site for cultural heritage values;
- a major land holding within the Metropolitan area;
- Situation within three Local Government Areas;
- a significant employer within the region;
- numerous and varied businesses operating from the site; and
- being the gateway to Western Australia for interstate and international visitors.

Planned development is also likely to lead to an increase in the number and diversity of tenants and associated stakeholders. Consequently WAC recognises the value in effective engagement processes to capture and respond to stakeholder issues and develop a common approach to environmental management of the airport.

Existing stakeholder groups have demonstrated interest in the following focus areas:

- aviation-related activities;
- non-aviation related industries at the airport;
- planning;
- Aboriginal heritage;
- environment and conservation; and
- Local, State and Commonwealth Government relationships.

3.3 FIVE YEAR ACTION PROGRAM

This five year action program has been developed to recognise the importance of stakeholder engagement as WAC embarks on a major phase in the redevelopment of the airport and to ensure the accuracy of information disseminated to the community through direct communication. WAC's strategy to achieve the stated objectives is to develop a greater level of stakeholder engagement through more effective interaction with existing stakeholder forums, rather than the creation of new forums.

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Transparent and inclusive engagement with airport stakeholders and the wider community on current and emerging environmental issues towards the long-term sustainability of the airport's environmental values	Lack of awareness within the community resulting in uncertainties and misinformation	**Existing** Engage with key stakeholders, to discuss opportunities for achieving long-term sustainable outcomes	1	Summary of outcomes in AER
		Use electronic media as an efficient means of information dissemination within the organisation, for stakeholders and the wider community	1	Detail provided in AER
		Support environmental and cultural projects and/or groups	1	Specific projects detailed annually in AER Outcomes from previous years projects including key learnings detailed in AER
		Establish project specific consultative processes where WAC considers significant community interest is likely	1	Annually detail forums established in AER
		Investigate opportunities for environmental initiatives involving stakeholders such as tenants, school groups, community groups and airport staff	1	Detail proposed for following year in AER. Annually assess success of programs and provide summary in AER
		Implement environmental education and awareness initiatives at Perth Airport	1	Detail proposed for following year in AER. Annually assess success of programs and provide summary in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
		New Document and report on methods to achieve clear communication to tenants regarding WAC's expectations of cultural awareness activities	2	Develop in conjunction with key stakeholders. Report outcome to AEO and provide summary of progress in AER
		Undertake voluntary reporting/ auditing to recognised benchmarks in consultation with the Commonwealth Government	2	Provide details of reporting standard to AEO Report in AER
Promoting continuous improvement of the organisation's stakeholder engagement processes	Participation and value in stakeholder engagement processes is reduced	**New** Establish a stakeholder feedback and review process to facilitate continuous improvement of consultative processes	2	Develop in conjunction with Stakeholder forums. Detail process to AEO and summaries in AER

3.4 EXTERNAL INFLUENCES ON STAKEHOLDER ENGAGEMENT

The key external drivers of effective stakeholder engagement are:

(A) LEGISLATION, POLICY AND GUIDELINES

- The *Act* – The *Act* specifies requirements for consultation and public comment during development of an Environment Strategy; a list of those consulted with a summary of views is to be provided to the Minister. The *Act* also specifies that a Preliminary Draft AES must be made available for public comment for a period of 60 business days.
- The *Regulations* – in accordance with Division 2 of the *Regulations*, WAC must undertake a range of consultations with relevant stakeholder groups in determining the significant environmental and cultural attributes of the airport estate. Once approved the AES must be publicised to all airport sublessees and licensees.
- *Airport Development Consultation Guidelines 2007* - These guidelines assist ALCs in the process of stakeholder consultation, in particular with the development of MPs, Environment Strategies and MDP's.

(B) STAKEHOLDER EXPECTATIONS AND SOCIETAL TRENDS

An increase in the number of external stakeholders interested in airport activities is expected in parallel with the continuing development of off-airport commercial, industrial and residential development. Additionally, increased commercial developments on the fringes of the airport estate will:

- increase the number of parties within ANEF zones that may be impacted by aircraft noise;
- increase receptors for potential air quality impacts such as odour and dust; and
- contribute to, and be impacted by, traffic flows associated with road networks surrounding the airport estate.

An increase in the number of stakeholders interested in land use, environmental and heritage management is also expected.

Westralia Airports Corporation recognises that stakeholders expect organisations to provide a comprehensive and effective consultation process and is already working to collaborate, be transparent and accountable with its diverse stakeholder groups.

3.5 INTERNAL INFLUENCES ON STAKEHOLDER ENGAGEMENT

Stakeholder management is influenced by WAC's business direction and corporate objectives as outlined in Section 2.

To continue to align with the Company's corporate direction, WAC recognises that stakeholder engagement is fundamental and essential to its business success and achieving its vision.

3.6 CURRENT MANAGEMENT

Westralia Airports Corporation recognises the need for regular and ongoing consultation with key stakeholders and has implemented the following initiatives to facilitate this process:

- establishment of consultative groups;
- public and Government environmental reporting;
- provision of information through electronic media; and
- promotion of environmental awareness and sponsorship.

(A) CONSULTATIVE GROUPS

Westralia Airports Corporation has established the following major groups to facilitate stakeholder consultation for environmental and heritage issues and broader airport operations:

- Environmental Consultative Group (ECG) - includes representatives from WAC, catchment and conservation groups, Commonwealth, State and Local Government;
- Major Tenant Environment Forum (MTEF) - includes representatives from WAC, major aeronautical and non-aeronautical tenants;
- Aircraft Noise Management Consultative Committee (ANMCC) - includes representatives from WAC, Commonwealth, State and Local Government, community groups and airlines; and
- Perth Airport Advisory Board - a group including senior leaders from the community, State and Local Government.

The ECG and MTEF meet quarterly to discuss key environmental and heritage topics including: heritage management; waste management; land use; conservation management; and the implementation of the AES.

The ANMCC's initial purpose was to develop the Noise Management Strategy which was finalised in 2000. Its current purpose includes monitoring and implementation of the strategy. The Noise Management Strategy and the Committee's activities are discussed further in Chapter 10 – Ground-Based Noise.

(B) PUBLIC AND GOVERNMENT REPORTING

Perth Airport's AER is an important part of WAC's goal setting and reporting. It tracks progress against commitments made in the AES relating to environmental improvements, rehabilitation and conservation initiatives. It also allows WAC to inform stakeholders of its ongoing plans to address emerging issues, such as climate change, and to show how management plans are being adapted to changing internal and external drivers.

The AER, as part of WAC's statutory requirements, also includes information on environmental incidents, contaminated site management and the results of environmental monitoring. This report is submitted to the Secretary for Infrastructure, Transport, Regional Development and Local Government for review and is made publicly available to ensure key stakeholders have the opportunity to review environmental performance.

In addition to the AER, WAC regularly reports to DITRDLG through the AEO. WAC and the AEO meet on a monthly basis to discuss environmental management and project specific issues.

Westralia Airports Corporation undertakes monitoring and reporting of environmental performance in a manner consistent with leading industry practice. All monitoring is undertaken in accordance with relevant Australian Standards by appropriately trained staff. Since the 2003/2004 period, WAC has reported environmental matters against the Global Reporting Index (GRI), a universally accepted measure for sustainability reporting.

(C) INFORMATION AVAILABILITY

The provision of up-to-date information to key stakeholders and the broader community is a priority for WAC. The use of electronic media for this purpose, especially the internet and email, is an invaluable mechanism for ensuring the most up-to-date information is readily available.

The AES is made available to all sublessees and licensees on the Perth Airport website. Airport tenants will be notified in writing upon Ministerial approval for the AES 2009. WAC will offer information sessions to airport tenants to ensure a broad understanding for tenant requirements and the broader AES concepts.

(D) ENVIRONMENTAL AWARENESS

Westralia Airports Corporation recognises the importance of environmental awareness and promoting community engagement at the airport, and engages in a number of initiatives to promote and enhance the environmental and heritage values of the estate, including:

- providing awareness sessions to relevant WAC staff;
- involving school groups in land management activities;
- sponsorship programs for environmental and cultural heritage events;
- research initiatives for conservation and cultural heritage programs; and
- local community interaction.

(E) STAKEHOLDER ENGAGEMENT FOR THE AES

In order to identify broad issues for consideration in the AES, WAC held preliminary stakeholder consultation sessions in May 2008 involving members of the ECG, MTEF and ANCCC. The purpose of these workshops was to establish key issues in determining objectives of the AES.

Westralia Airports Corporation convened a workshop in October 2008 to provide an opportunity for key stakeholders to further contribute to the development of the AES and present information on how the documents are progressing prior to the formal public comment period. The workshop involved representatives of Commonwealth, State and Local Government Agencies, businesses operating at Perth Airport, NGO's and community groups. The key objectives of this workshop were to:

- discuss the current and proposed approach to environmental management, land use planning and aeronautical activities at Perth Airport for the term of the AES and Master Plan;
- provide an overview of the proposed Master Plan and AES structure and objectives;
- outline proposed responses to the issues raised at the initial workshop; and
- provide an opportunity for stakeholder identification of additional issues not previously addressed.

4. CULTURAL HERITAGE

4.1 INTRODUCTION

Aboriginal culture and heritage is of continuing importance and significance to the community, particularly the Traditional Owners. A number of processes are already in place to manage these values, including the involvement of Traditional Owners in airport planning and development and creating awareness of Aboriginal culture at Perth Airport.

Westralia Airports Corporation has established the following objectives to promote and protect cultural values on the estate:

- acknowledge and respect the role of Aboriginal people as Traditional Owners of the land;
- manage Aboriginal heritage in a culturally sensitive manner through consultation with the Aboriginal community;
- raise awareness of Aboriginal heritage with or among stakeholders and the wider community through systems, activities and processes; and
- investigate and implement employment, training and sponsorship opportunities for Aboriginal people at Perth Airport.

4.2 BACKGROUND

The land on which Perth Airport is located forms part of the traditional network of communication routes, meeting places and camping sites. The Nyoongar people, as the Traditional Owners, have a strong interest in the current land use and its management. A number of archaeological and ethnographic sites at Perth Airport are registered on the WA Department of Indigenous Affairs Register of Aboriginal Sites, the most important being Munday Swamp.

4.3 FIVE YEAR ACTION PROGRAM

The strategy within this five year program is to work with the Aboriginal community in relation to cultural heritage at Perth Airport and to explore other opportunities to assist the Aboriginal community. The following table outlines actions designed to leverage from the high profile of Perth Airport and resultant opportunities for promoting awareness of Aboriginal culture to a broad audience. The Perth Airport estate includes Munday Swamp, an area of spiritual importance to the Nyoongar people requiring ongoing protection through a consultative process. The airport estate comprises a major economic hub within the Perth Metropolitan area and WAC will seek to facilitate training and development opportunities for the Aboriginal community with tenants and key business partners.

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Acknowledge and respect the role of Aboriginal people as Traditional Owners of the land	Work collaboratively with the Aboriginal community in land management and planning	**Existing** Fly the Aboriginal Flag at Perth Airport to acknowledge the Traditional Owners	1	Permanently flown at Terminal 1
		Celebrate Aboriginal cultural events eg NAIDOC week	1	Details reported in AER
		New Consult with the Traditional Owners to enhance recognition of Aboriginal heritage values at Perth Airport	2	Minimum 3 meetings per year with local Elders
Manage Aboriginal heritage in a culturally sensitive manner through consultation with the Aboriginal community	Integration of Aboriginal land management practices Involvement of the Aboriginal community in land management activities Disturbance to sites of Indigenous significance	**Existing** Implement the development assessment process, ensuring heritage impacts are considered, including the potential for new sites to be identified, and management measures are adequate prior to granting development approval	1	CEMPs and OEMP provided to AEO
		New Implement the principles of *Celebrating Aboriginal Culture at the Perth Airport*	2	Report activities in AER Regular meeting with local Aboriginal elders
		Consult with the Traditional Owners in the management of the natural ecology at Perth Airport, particularly in and around Munday Swamp	2	Details provided in AER
		Encourage further involvement of relevant Aboriginal Elders during planning processes for the airport	2	Details provided in AER
		Incorporate Aboriginal heritage considerations into CEMP guidelines	2	Details provided in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Raise awareness of Aboriginal heritage to stakeholders and the wider community through systems, activities and processes	Provide opportunities for enhancing cultural awareness	Implement procedures to acknowledge the Traditional Owners for events held at Perth Airport	1	Details provided in AER
		New Annually, produce and implement a schedule of events to: • assist in developing annual actions to increase awareness of Aboriginal heritage at Perth Airport; • develop employment opportunities for Aboriginal people; and • review and provide feedback on success of prior events	2	Details of events, including outcomes provided in AER
		Integrate permanent recognition for the Traditional Owners such as plaques, artworks and terminal themes	3	Details provided in AER
		Conduct cultural awareness training for WAC staff and contractors	2	Details of cultural awareness training provided in AER
Investigate and implement employment, training and sponsorship opportunities for Aboriginal people at Perth Airport	Cross-cultural knowledge sharing through integration Training and development opportunities for members of the local Aboriginal community	**New** Collaborate with Commonwealth and State agencies in establishing programs to assist in higher education and employment opportunities for Aboriginal people	2	Details provided in AER

4.4 EXTERNAL INFLUENCES ON CULTURAL HERITAGE

External factors influencing the management and promotion of cultural heritage values at Perth Airport include:

- legislation, policy and guidelines; and
- stakeholder expectations and future trends.

(A) LEGISLATION, POLICY AND GUIDELINES

Commonwealth

- The *Regulations* – stipulate sites of Indigenous significance must be specified in the Environment Strategy following consultation with relevant Aboriginal communities or organisations, as well as State and Commonwealth agencies. In addition the *Regulations* provide for the duty of the operator of an undertaking at the airport to give notice of culturally significant discoveries;
- *Environmental Protection and Biodiversity Conservation Act, 1999 (EPBC Act)* – provides for the protection of National Heritage sites listed under the *EPBC Act* on the National Heritage List. The *EPBC Act* stipulates approvals are required where significant impacts to the values of National Heritage sites may result;
- *Australian Heritage Council Act, 2003* – under this *Act* the Australian Government maintained the Register of the National Estate (RNE). The Register contained places of natural, historic and indigenous cultural significance. The Register was superseded by the *EPBC Act* (National Heritage List) in 2006 and is currently frozen, however protection of registered sites will continue until 2012 (DEWHA 2008b); and
- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* – provides for the protection of sites identified as significant to Aboriginal people.

(B) STAKEHOLDER EXPECTATIONS AND FUTURE TRENDS

The promotion of indigenous culture in Australia has raised community awareness of its richness and value, and it is anticipated the promotion of cultural values and acceptance of indigenous cultures will continue into the future.

In February 2008, an historic apology was made by Prime Minister Kevin Rudd to the Stolen Generation on behalf of the Australian people. This apology was an important event in ongoing reconciliation between Aboriginal and non-Aboriginal Australians.

The relationship between private organisations and Traditional Owners is recognised as an important aspect of corporate social responsibility. It is expected that trends in establishing and maintaining relationships with Traditional Owners will continue as the mutual value of these relationships is realised.

Consultation with key stakeholders has identified the following focus areas in relation to Cultural Heritage management:

- increase consultation with the Aboriginal community;
- involve the Aboriginal community in land management; and
- recognise the importance of sites to Aboriginal people, especially Munday Swamp and Allawah Grove.

4.5 INTERNAL INFLUENCES ON CULTURAL HERITAGE

There are three key internal influences of heritage management at Perth Airport:

- existing environment;
- corporate direction;
- land management; and
- airport development activities.

EXISTING ENVIRONMENT

Westralia Airports Corporation recognises the estate holds considerable cultural value for the local Aboriginal community and incorporates the historical territory of the Nyoongar People. The succession of wetlands, lakes and watercourses in the region, including Munday Swamp, were important traditional centres for food and water resources.

Munday Swamp is a culturally and spiritually important place for the Nyoongar people. It has been recognised on the (now superseded) RNE as containing sites of significance for conservation and cultural heritage values (RNE sites 100871 and 102483) and is also considered to be an important archaeological site.

Allawah Grove, in the northern section, was occupied by Aboriginal people during various periods from the 1930s, including being the only non-institutionalised Aboriginal settlement in WA. Allawah Grove remains an important site to the identity of the Aboriginal families who resided or visited relations there.

Further details on Munday Swamp and Allawah Grove are available in Appendix A, Section 3 and additional information on the Traditional Owners and sites of significance are provided in *Celebrating Aboriginal Culture at Perth Airport* (WAC 2008a).

In 2008, WAC commissioned an audit of Aboriginal heritage sites on the estate in comparison with the WA Department of Indigenous Affairs (DIA) Register of Aboriginal Sites. The audit comprised:

- a review of previous survey reports;
- a review of sites listed on the State Aboriginal Sites Register at Perth Airport;
- a field study to re-record and define previously recorded sites; and
- a report on the current status of sites.

The survey discovered little artefactual evidence still remaining at the majority of the archaeological sites identified by the review as a result of complete surface collections during prior archaeological surveys, previous land uses, developments or erosion.

CORPORATE DIRECTION

Westralia Airports Corporation's direction for Aboriginal heritage management is based on the key Corporate Objective – *'to ensure we are a responsible and caring corporate citizen'*.

Westralia Airports Corporation's approach involves acknowledging Aboriginal people through the promotion and celebration of Aboriginal culture and heritage, and providing opportunities for Aboriginal people to be directly involved in airport projects, activities and employment.

LAND MANAGEMENT

Land management is an integral component of the business philosophy of WAC, highlighted by the Corporate Objective *'to operate in an ecologically sustainable manner'*. As outlined earlier, an annual Conservation Precinct Management Plan is developed and implemented.

Westralia Airports Corporation recognises the value in collaborating with the Traditional Owners in aspects of land management, particularly in areas of importance such as Munday Swamp.

AIRPORT DEVELOPMENT ACTIVITIES

Airport development activities have the potential to influence heritage values on the estate. Key considerations include:

- locations of known archaeological and ethnographic sites;
- risks of disturbing sites of cultural significance; and
- potential to uncover new sites.

The location and current status of known archaeological and ethnographic sites have been comprehensively documented on the airport estate (Artefaxion 2008). This information forms an integral component of the environmental screening process during the planning phase of airport development activities.

Management protocols are in place to protect against unauthorised disturbance to Aboriginal sites during airport development activities such as vegetation clearing, excavation or construction.

Development activities may also result in the discovery of previously unrecorded culturally important sites. The responsibility for reporting a suspected Aboriginal site is placed on the operator of the given undertaking.

4.6 CURRENT MANAGEMENT

Westralia Airports Corporation has established processes for managing heritage values at Perth Airport and recognises the Aboriginal people as being the Traditional Owners of the land by:

- engaging with relevant Aboriginal Elders during planning for the Perth Airport Precinct;
- collaborating with the Traditional Owners in developing land management strategies;
- consulting the Traditional Owners in relation to the protection of Aboriginal sites located at Perth Airport;
- acknowledging the Traditional Owners at formal events; and
- flying the Aboriginal flag permanently at Perth Airport to recognise the Traditional Owners.

CELEBRATING ABORIGINAL CULTURE AT PERTH AIRPORT

The development of the *Celebrating Aboriginal Culture at Perth Airport* publication reinforces WAC's commitment to appropriately managing heritage values at Perth Airport. The document has been developed in consultation with local Aboriginal people and outlines WAC's approach to managing heritage and promoting the values of Aboriginal culture at Perth Airport.

Through *Celebrating Aboriginal Culture at Perth Airport, WAC* has also established *'The Yearly'*, an action plan produced annually in consultation with the Traditional Owners. *The Yearly* outlines activities to promote Aboriginal culture at Perth Airport and in the community. It includes initiatives and activities for the upcoming year, as well as a review of the previous year's events and achievements. *The Yearly* assists in the continual improvement of the relationship and dialogue between WAC and the Traditional Owners as well as ensuring the quality of future activities.

MANAGEMENT OF ABORIGINAL SITES

Westralia Airports Corporation aims to manage heritage sites at Perth Airport in a culturally sensitive manner. Maps of identified sites for the airport estate are maintained and developments are subject to approval processes including the identification and management of heritage sites.

Site of Indigenous Significance

In accordance with section 3.03 of the *Regulations* WAC has identified two sites of indigenous significance. Discussions with the Aboriginal Community have indicated that Munday Swamp is the most significant cultural heritage place at Perth Airport, and is identified as a site of indigenous significance within the AES 2009. Due to its contemporary connections Allawah Grove is also considered a site of indigenous significance.

As previously described there are a number of other sites which are considered important, these include those archaeological sites that still contain artefacts. These sites have been fully catalogued and WAC's intentions regarding the areas are described in the Master Plan 2009.

Westralia Airports Corporation will consult with the Aboriginal community on the management of these sites.

Westralia Airports Corporation also requires that all airport users, including sublessees, take appropriate measures to manage Aboriginal sites, and encourages all airport users to appropriately recognise the Traditional Owners. Heritage management requirements are incorporated into:

- development approvals – where risks to heritage values or sites are apparent, appropriate management options are required in development applications. The risks to heritage sites are considered as part of the assessment and approval process; and
- Major and Minor CEMPs are required to assess the risks to heritage sites and values associated with construction activities. Where a level of risk is apparent, controls are defined to effectively manage the risk.

ENGAGEMENT WITH THE ABORIGINAL COMMUNITY

Westralia Airport Corporation encourages the involvement of relevant Aboriginal groups in the planning and development at Perth Airport. *Celebrating Aboriginal Culture at Perth Airport* identifies Aboriginal groups and families with recognised links to Perth Airport. Consultation with these groups is targeted to ensure engagement is conducted with the appropriate Aboriginal people with knowledge and recognised connections to the land at Perth Airport.

5. LAND USE PLANNING

5.1 INTRODUCTION

Perth Airport comprises 2105ha, leased to WAC by the Commonwealth Government. In accordance with the *Act*, WAC outlines its intended land use plans in the Airport Master Plan (MP) spanning a 20 year planning period and beyond.

Westralia Airports Corporation has the following environmental objectives for land use planning:

- ensuring land use planning is undertaken in a manner that maintains the long-term viability of the airport estate as a key infrastructure asset to Western Australia whilst recognising its key biodiversity values; and
- ensuring environmental and cultural values are integrated into the land use planning and development approvals process.

5.2 BACKGROUND

This section aims to provide the overview of key land use and development areas for the period 2009 – 2014 so that the key environmental values of these developments are considered in full in the relevant sections.

To aid development of the land use plan the following four categories are used:

- runways, taxiways and aprons;
- aeronautical development;
- non-aeronautical property; and
- conservation areas.

The planning phase for all land development includes consideration of environmental impacts, including but not limited to:

- dust generation during the construction phase;
- construction and operational noise;
- increased resource use;
- increased traffic movements;
- increased potential for soil, water and air pollution;
- ecosystem disruption due to clearing of vegetation and habitat fragmentation;
- increased waste generation;
- modifications to hydrological regimes; and
- disturbance of indigenous heritage sites.

5.3 FIVE YEAR ACTION PROGRAM

Westralia Airports Corporation operates, maintains and develops the airport estate to meet the economic and social needs of Western Australia. The strategy for the five-year action program is to develop an end of lease vision for conservation management on the estate. This will be achieved through development of a Conservation Completion Plan and then ensuring all activities work towards this plan by embedding and strengthening systems which integrate environmental considerations into the land use planning and approvals process. The following table shows the actions that are proposed to achieve this by considering the environmental and cultural values of the estate in the context of an expanding airport business.

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Ensuring land use planning is undertaken in a manner that maintains the long-term viability of the airport estate as a key infrastructure asset to Western Australia whilst recognising its key biodiversity values	Viability of environmentally significant areas are compromised	**Existing** Undertake developments in accordance with the Master Plan to ensure that environmentally significant areas are conserved and protected	1	Assessed as part of A(BC) R's
		New Develop and implement the Conservation Completion Plan to complement the Airport's Ultimate Development as indicated in the Master Plan	3	Report progress as part of AER
Ensuring environmental and cultural values are fully integrated into land use planning and development approval processes	Loss of significant environmental and cultural values	**Existing** Ensure all projects are evaluated for potential environmental impacts through the internal EMS and project approval process	1	Assessed as part of A(BC) R's Summary of developments included in AER
		Require and monitor CEMPs for construction identified as moderate to high environmental risk	1	Monthly reporting to AEO Summary in AER
		Require and monitor OEMPs from tenants with moderate to high environmental risk	1	Status of compliance reported in AER
		Continue to monitor and report to the Commonwealth Government on compliance with MDP conditions	1	Monthly reporting to AEO. Undertake audits and report outcomes in AES
		New Provide improved documentation and processes in relation to the above processes.	2	Monthly report to the AEO. Provide summary in AER

5.4 DEVELOPMENT CONSIDERATIONS

CONTROLS AND CONSTRAINTS OF AIRPORT DEVELOPMENT

Approval by the Commonwealth Government is required prior to any development on the airport estate. Both Local and State Government planning policies were considered during the preparation of the non-aeronautical land use planning. The MP describes development controls in more detail.

Westralia Airports Corporation also has a set of controls in place to manage the impact of development. These controls are enforced from the inception of development concepts to the management of facilities once built and are detailed in their relevant sections further in this document.

SURROUNDING LAND USE

Current land use reserves and zoning in the vicinity of Perth Airport as depicted in the MRS include:

- urban (Residential);
- rural;
- industrial;
- parks and recreation; and
- major roads.

More information about each zone is available in Appendix A, Section 4.

POTENTIAL FUTURE LAND USES SURROUNDING PERTH AIRPORT

Development and land uses within the vicinity of Perth Airport require the approval of the relevant Local Government. In some instances, approval from the Western Australian Planning Commission (WAPC) is also required.

Since the Master Plan 2004 was produced, much of the surrounding areas zoned for "Urban Development" have been developed primarily at a residential density of 20 houses per hectare. This residential density is not envisaged to increase significantly in the foreseeable future given that any proposal to do so requires an extensive public consultation period and approval of the WAPC subject to the provisions of *Statement Planning Policy No. 5.1: Land Use Planning in the Vicinity of Perth Airport.*

5.5 EXISTING DEVELOPMENT STRATEGIES

The MP is the primary land use planning document at Perth Airport. Detailed information pertaining to land use intentions is provided in the MP.

AERONAUTICAL DEVELOPMENT

In line with WAC's business objectives, upgrades and expansion developments to increase efficiency and capacity are being undertaken at Perth Airport. Key initiatives in support of the development of aeronautical property include:

(A) CONSOLIDATED TERMINAL DEVELOPMENT:

The consolidation of the three existing terminals and their respective support infrastructures. The MP positions the consolidated terminal in the area surrounding the existing international terminal. This location provides convenient and efficient access to the proposed ultimate development of runways and taxiways.

(B) RUNWAYS AND TAXIWAYS:

The MP forecasts aviation demand and simulation modelling for runway capacities to aid development plans. The ultimate design of Perth Airport incorporates a third runway parallel to the existing main runway and to the east of the existing International Terminal. Further detail is provided in the MP.

NON-AERONAUTICAL PROPERTY (COMMERCIAL)

Non-aeronautical property at Perth Airport is divided into seven geographical precincts with sub precincts, as illustrated in Figure 4. Land use is categorised into eight areas as described in Appendix A, Section 4. Table 2 provides an overview of the land use in each precinct. Detailed information is provided in the MP.

Conservation

As detailed in Section 8-Conservation land at Perth Airport is divided into two precincts. Permitted uses within these zones are land management activities (weeding, track maintenance, etc), works to facilitate public awareness and access to the areas (visitor/education centres, tracks, walk trails, viewing platforms, educational signage, etc). These activities are not considered to have a significant environmental or ecological impact nor affect the conservation areas identified.

TABLE 2: ASSIGNED LAND USES WITHIN PERTH AIRPORT PRECINCTS

PRECINCT	COMMERCIAL	AVIATION COMMERCIAL	GENERAL WAREHOUSE	SHORT STAY ACCOMMODATION	RECREATIONAL	INDUSTRIAL	CONSERVATION AREAS
1A	X	X	X	X		X	
1B	X	X	X	X		X	
1C	X	X	X		X	X	
2A	X		X	X	X	X	
2B	X	X	X	X	X	X	
2C	X	X	X	X		X	
3A			X			X	
3B			X			X	
4	X		X			X	
5							X
6	X		X	X		X	
7					X		X
Terminal Development Precinct	X	X	X	X	X		

5.6 KEY DEVELOPMENT PLANS 2009 – 2014

The MP contains a number of significant development initiatives for Perth Airport. In accordance with WAC's policies and relevant legislation, land use and development is designed to be achieved with minimum environmental impact whilst aiding the achievement of corporate objectives. Key environmental impacts have been reviewed with regard to each key aspect below.

NON-AERONAUTICAL DEVELOPMENT

With approximately 900ha of land available for commercial development, WAC intends to develop its commercial property assets in line with the MP. Timing of development will be in response to market expectations, commercial constraints and opportunities. Perth Airport will continue to expand whilst meeting the environmental requirements and utilising the adaptive management processes available during its development.

TERMINAL CONSOLIDATION

Westralia Airports Corporation has announced the intention to bring forward the timing for consolidation of large scale regular passenger transport and charter air services to the current international precinct. This consolidation, consistent with the MP is planned to result in the phased relocation of domestic air services to the eastern side of the main runway over the next 7 years.

The first phase of consolidation involves construction of a new terminal, named 'Terminal WA'. The draft MDP for this new terminal is being finalised at the time of writing this AES following a period of public consultation.

ROAD NETWORK UPGRADE

A number of improvements to the existing ground access system are proposed on and around Perth Airport, as outlined in Appendix A, Section 4. Upgrading the road network will increase the effectiveness of the road system and produce some environmental benefits from increased efficiency and reduced traffic congestion. Greater detail on road upgrades is provided in the Master Plan.

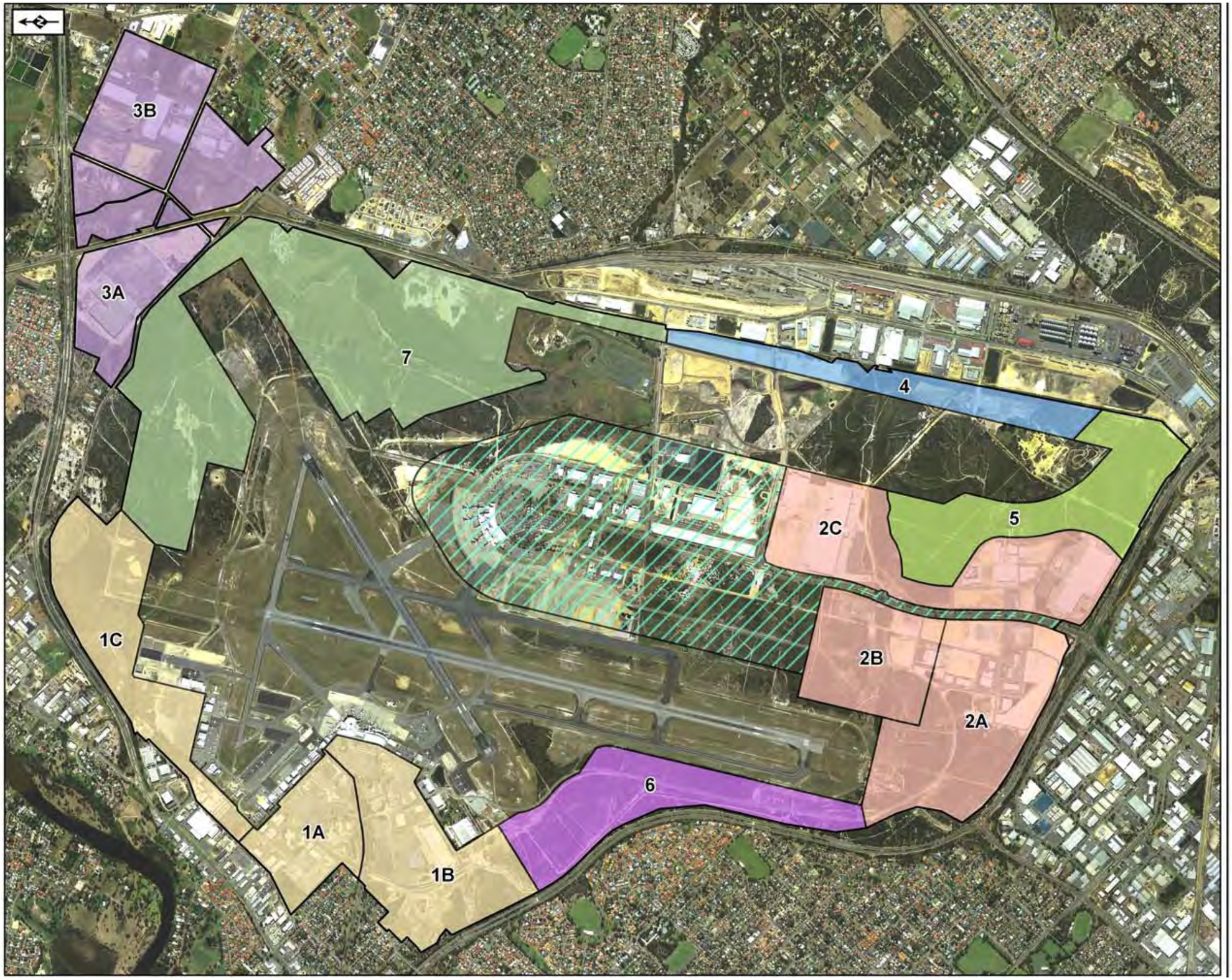


FIGURE 4: NON-AERONAUTICAL PRECINCTS

6. CLIMATE CHANGE AND RESOURCE USE

6.1 INTRODUCTION

Westralia Airports Corporation recognises and accepts the findings of the UN's Environment Program, the Intergovernmental Panel on Climate Change (IPCC), that in all probability accelerated climate change is occurring and is a direct result of anthropogenic activities.

Climate change has the potential to significantly impact the ecological values, infrastructure and assets at Perth Airport. WAC is committed to a sustainable approach to business management and has developed its Sustainability Strategy to focus on the areas of climate change and sustainable resource use.

Westralia Airports Corporation has the following objectives to guide management on the issues of climate change and sustainable resource use:

- provide leadership in the area of sustainability;
- assess and mitigate the risks of both direct and indirect impacts of climate change; and
- sustainable use of resources.

6.2 BACKGROUND

Climate change has become an increasingly relevant topic. Public awareness has increased and there have been significant milestones such as the ratification of the Kyoto Treaty by the Australian Government in 2008. Climate change and how WAC responds to the issues of both climate change and sustainable resource use, is fundamental to the achievement of the company's corporate objectives. WAC understands the importance of being actively engaged in addressing these issues.

THE CURRENT SITUATION

Westralia Airports Corporations' Sustainability Strategy recognises the United Nation's IPCC finding overwhelming evidence that anthropogenic activities are causing climate change. The CSIRO's Technical Report – Climate Change in Australia (2007) indicates WA has been impacted and is likely to continue to be affected by climate change in a number of ways including:

- a 0.9°C temperature increase since 1950 and projected 2°C additional increase by 2050;
- annual average number of days over 35°C in Perth to increase from the current 27 to 29-38 days by 2030;
- a 20% rainfall decrease in south west WA since 1950 and a projected additional 15% to 20% decrease by 2050;
- a 17cm sea level rise in the 20th century and projected additional 60cm rise in the 21st century;
- warmer conditions helping to spread vector-borne diseases further south in Australia; and
- tropical cyclones are projected to intensify, leading to more flooding across northern Australia and an increase in extreme storm events.

These predicted impacts are likely to result in increased pressure on water supplies, a growth in peak summer energy demands and altered hydrological regimes. This will place direct pressure on both infrastructure and emergency services, and will increase resource use if mitigating measures are not implemented. Ecological values may also be affected.

The best estimates of the impacts of climate change and mechanisms to address the issue are constantly evolving. The information provided in this report represents an understanding of the science and legislative frameworks at the time of preparation. A key element of WAC's approach during the strategy period is to continue to build its scientific understanding, to remain relevant and keep abreast of all aspects of climate change and be actively engaged in debate on responses.

6.3 FIVE YEAR ACTION PROGRAM

The strategy for the five year action program is to use a risk based approach to develop a comprehensive program of actions to respond to climate change in a manner consistent with being a responsible and caring corporate citizen and to clearly communicate this program with all stakeholders. The approach, as detailed below, recognises that whilst WAC is not a major CO_2 emitter it has the opportunity to provide a leadership role in the community, thus it is designed to leverage from this position by facilitating awareness of climate change, and to identify, implement and communicate the potential impacts and mitigation opportunities on vulnerable natural values resulting from climate change.

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Provide leadership in the area of sustainability	Leverage from high profile position to provide awareness and education to stakeholders and the wider community	**New** Annually review the Sustainability Strategy to ensure AES commitments are reflected and implement Sustainability Strategy actions. Make the Sustainability Strategy available to the public	2	Details of progress included in AER Implementation of Sustainability Strategy
		Assist and encourage tenants and business partners to adopt the sustainable practices within their businesses, through education and the provision of relevant information held by WAC	3	Details of progress included in AER
Assess and mitigate the risks of both direct and indirect impacts of climate change	Adverse impacts on ecological and environmental values resulting from climate change	**New** Undertake vulnerability assessment of key environmental assets to climate variation and evaluate contingency measures	2	Details of progress included in AER
		Ensure the impact of climate change and resource requirements are evaluated to: • assess the impacts on environmental and heritage values; • assess the impacts on existing critical infrastructure; and • assess impacts of all new critical infrastructure	2	Details of progress included in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Sustainable use of resources	Depletion of resources Diversion of waste from landfill	**Existing** Undertake waste recycling program	1	Details of progress included in AER
		New Carbon reduction targets will be set, published and publicly reported	2	Update provided to Board of Directors quarterly Monthly reporting to AEO
		Conduct energy audits and collaborate with tenants to undertake energy audits of their facilities	2	Details of progress included in AER
		Develop a Resource Use Reduction Strategy targeting energy, water and waste	3	Details of progress included in AER

6.4 EXTERNAL INFLUENCES ON CLIMATE CHANGE AND RESOURCE USE

The key external influences on WAC's response to climate change and sustainable resource use are:

- legislation, policy and guidelines; and
- stakeholder expectations and future trends.

(A) LEGISLATION, POLICY AND GUIDLINES

Commonwealth

- The *Regulations* – the *Regulations* provide for a general duty to prevent, control and reduce environmental impacts;
- *National Greenhouse and Energy Reporting Act 2007 (NGER)* – the NGER establishes trigger levels for reporting Green House Gas (GHG) emissions, reductions, removals, offsets and energy consumption. Current energy use and CO_2 emission calculations identify WAC as below the reporting threshold at the facility level. WAC however, reports GHG emissions in a manner consistent with the NGER;
- *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (OPA)* – the OPA provides measures to protect ozone in the atmosphere through minimising the emissions of these gases. Operators of undertakings on the airport estate are required to comply with the OPA;

- *National Environmental Protection (National Pollution Inventory) Measure 1998 (NPI)* – the NPI is an internet database on the emissions to air, land and water of 93 toxic substances (DEWHA 2008c). Identified industries, including airports, are required to report to the NPI annually when threshold levels are exceeded;
- The current political arena surrounding climate change is dynamic, as improved scientific data is made available. Therefore, further support for legislative and policy responses to climate change is likely. Known legislative and policies initiatives in relation to climate change may include:
  - National Environment Protection (Movement of Controlled Waste Between States and Territories) Measure – this measure aims to ensure that controlled waste that are to be moved between States and Territories are properly identified, transported, and handled in ways that are consistent with environmentally sound practices.
  - Carbon Pollution Reduction Scheme (CPRS) – administered by the Commonwealth Department of Climate Change, the CPRS may come into effect on 1 July 2010. Key components of the scheme will be a cap on the total emissions and a National Emissions (Carbon) Trading Scheme (NETS). The NETS will aim to reduce carbon emissions by providing a market for emissions to be traded (DCC 2008). Based on existing energy use calculations, it is unlikely WAC will be directly involved in the NETS; and
  - National Aviation Policy – the Minister for Infrastructure, Transport, Regional Development and Local Government has committed to the development of a National Aviation Policy. The impact of climate change relative to the aviation industry is likely to be addressed in the Policy (DITRDLG 2008).

State

State legislation and initiatives, although not legally binding, provide valuable reference material. State considerations for climate change and resource use include:

- *Western Australian Greenhouse Strategy 2004* – this Strategy identified opportunities and risk management initiatives associated with climate change. It established research programs, provided Government leadership and represented WA interests nationally and internationally (DEC 2004);
- *Waste Avoidance and Resource Recovery Act 2007* – under this *Act*, the WA Waste Authority administers its Towards Zero Waste Initiative. This initiative aimed at the reduction of waste to a zero waste society (WMA 2004); and
- *Water Agencies (Water Restrictions) By-laws 2007* – these by-laws require non-residential lots consuming more than 20 ML of scheme water to undertake annual water management assessments, develop a Water Efficiency Management Plan (WEMP), and report on the efficacy of the Plan to the WA Water Corporation annually.

(B) SOCIETAL EXPECTATIONS AND TRENDS

Community and Stakeholder Expectations

Community expectations to address and respond appropriately to climate change are being increasingly raised. With additional scientific research and evolving government policies climate change is expected to become increasingly significant throughout and beyond the period of this AES. This has direct application to the aviation industry where emissions from airline travel are a material consideration.

Climatic Changes and Impacts

As a result of expected global climatic changes Perth Airport may be impacted by the following issues in the future:

- lowering of the water table due to lower rainfall and runoff;
- changes to the ecology of the conservation areas in response to lower water levels;
- changes to the structure and stability of soils;
- an increased risk to infrastructure due to severe storm events;
- acidification of groundwater;
- more frequent power disruptions due to storm events and excessive demands during heatwaves;
- increasing costs and energy required to produce potable water;
- higher costs for resources such as power and water; and
- costs associated with emitting carbon.

Resource Use

Demands on non-renewable resources to meet global energy needs are high and result in the depletion of resources and negative environmental impacts. Further environmental, social and economic impacts related to unsustainable use of resources are also expected to emerge over time. In response, there is likely to be an increasing trend toward the adoption of renewable energy and sustainable practices during the AES period.

The aviation industry is making a concerted effort to minimise resource use and emissions, which is expected to continue over this AES period. The Airport Council International (ACI) has acknowledged the issues of climate change and resource use and, at the Aviation and Environment Summit 2008, signed a declaration outlining a cross-industry strategy to deal with the aviation industry's impact on climate change. The approach will include using technological innovation, operational efficiency, infrastructure improvements and economic incentives to commit to a pathway of carbon neutral growth (ACI 2008).

6.5 INTERNAL INFLUENCES ON CLIMATE CHANGE AND RESOURCE USE

Westralia Airports Corporation has identified six key internal influences on the management of resources and climate change:

- corporate direction;
- resource reduction – target setting;
- environment and heritage values;
- airport development activities;
- energy requirements; and
- integrated Water Cycle Management (IWCM).

(A) CORPORATE DIRECTION

As mentioned previously, WAC's Environmental Policy outlines its intent to undertake a leadership role in environmental management and in support of this goal, WAC has a Sustainability Strategy to guide our response to climate change.

Westralia Airports Corporation views sustainability as a business philosophy and an overarching management approach – sustainability is integrated throughout the normal operations of the business. Additionally, WAC recognises a broader view of value, encompassing financial performance in parallel to both environmental and social performance. This is reflected in the company's corporate objectives, which include:

- conducting business in a commercially astute manner;
- conducting operations in an ecologically sustainable manner;
- identifying and managing risk; and
- ensuring we are a responsible and caring corporate citizen.

(B) RESOURCE REDUCTION – TARGET SETTING

The Commonwealth Government's proposed approach to carbon pollution reduction within Australia is through a market based cap and trade system. The use of market based systems is the approach used by economies within the developed world at the forefront of addressing climate change such as Europe and New Zealand.

The national approach recognises the importance of establishing targets consistent with the internationally recognised Kyoto Protocol, whilst ensuring economic and social values are maintained. This approach is supported by WAC.

The aim of the proposed scheme is to undertake emission reduction in an economically efficient manner through the use of price signals to ensure actions are focussed towards emissions most economically viable to mitigate. WAC supports this market based approach and within the strategy period will develop internal processes to identify and mitigate emissions inline with the Australian Government established targets.

Westralia Airports Corporation is progressively developing energy efficiency measures. Integral to the development of energy targets is the establishment of accurate, auditable energy baseline data. The key short term target for the strategy period is to complete energy audits of WAC facilities to inform development of the Resource Use Reduction Strategy to be progressively implemented through the period of the AES.

Westralia Airports Corporation has made commitments to reduce water consumption within the Water Efficiency Management Plan (WEMP). These are revised annually in consultation with the Water Corporation and the Airport Environment Officer, and reported publicly in the AER.

The following water efficiency measures are incorporated into WAC facilities:

- installation of low water use and waterless urinals in upgrades and new installations, resulting in savings or nearly 4000kl/year; and
- use of low grade groundwater for dust suppression.

(C) ENVIRONMENT AND HERITAGE VALUES

Westralia Airports Corporation acknowledges climatic changes may influence the environment and heritage values at Perth Airport, including significant sites such as Munday Swamp and the airport's Conservation Precincts. Potential impacts include:

- increases in temperature may place vegetation under drought stress, reduce habitat ranges and threaten rare and endangered species;
- decreases in rainfall and aquifer recharge may place the water dependant wetland ecosystems at risk; and
- severe storms may place pressure on the drainage systems potentially threatening the natural environs and airport infrastructure.

(D) AIRPORT DEVELOPMENT ACTIVITIES

As discussed in Section 5 – Land Use Planning, Perth Airport is undergoing expansion to ensure it remains a valuable infrastructure asset for aviation and land development opportunities in WA. Development activities have the potential to influence resource use and climate change, with associated risks that include:

- increased use of resources for building and construction purposes;
- an increase in water and energy demand resulting from an increase in businesses operating at the airport;
- increased energy use from lighting in new development precincts; and
- increased waste generation.

Westralia Airports Corporation recognises that appropriate planning, building and operating standards are required to enable a sustainable approach to development activities and long-term airport operation.

(E) ENERGY REQUIREMENTS

Energy is an essential component to airport operations. Energy use is driven by normal airport and tenant operations and the requirement to maintain health and safety standards. Critical infrastructure at Perth Airport requires energy to operate effectively and meet safety standards which includes:

- terminal buildings;
- the Control Tower;
- operational equipment necessary for aircraft movement;
- runways and taxiways;
- road, car park and pathway lighting; and
- security requirements.

Energy demands will be increased by the planned expansion program. Additionally, an increase in capacity, tenants, passengers and security requirements will also increase the demand for future energy requirements. The Resource Use Reduction Strategy will aim to investigate opportunities for mitigating energy increases through planning and innovation.

(F) INTEGRATED WATER CYCLE MANAGEMENT (IWCM)

Perth Airport is developing an IWCM to achieve optimum use of water resources via the management of water in which all components of the water system are integrated. Perth Airport's *Integrated Water Cycle Management Plan* (IWCMP) will come into effect during the period of this AES. The IWCMP embraces environmental, economic and social aspects, and benefits of the Plan include:

- providing for a greater understanding of the water system (including environmental water requirements) and availability of water resources;
- increasing WAC's value as a corporate citizen;
- improved relationships with stakeholders including the local community and government;
- greater independence, with less reliance on potable scheme water; and
- financial savings with lower usage costs and potentially a surplus of water that could be traded.

IWCM is an ongoing and complex process and implementation will take a number of years to complete through a gradual process of update and integration.

6.6 CURRENT MANAGEMENT

Westralia Airports Corporation's management response to climate change and the use of resources is implemented through plans, strategies and initiatives including:

(A) SUSTAINABILITY STRATEGY

As outlined earlier, WAC has recognised sustainability as a key principle for its long-term viability and developed a Sustainability Strategy to guide its responses to climate change, energy and water efficiency, waste reduction and community engagement.

Initially, the concept of "sustainability" at Perth Airport was limited to environmental issues and focused on climate change. However it is now recognised that the term also incorporates business management systems and frameworks within its scope. The Sustainability Strategy is periodically reviewed to incorporate new information and leading practice; and to ensure its adequacy and effectiveness.

(B) WASTE MINIMISATION INITIATIVE

Westralia Airports Corporation recognises the reduction of waste through processes such as optimising resource use and recycling, can significantly reduce environmental impacts. Recycling was introduced to Perth Airport during the 2004 AES period and has been successful in reducing solid waste disposal to landfill.

In 2007, WAC received a grant from the WA Department of Environment and Conservation (DEC) to undertake a waste audit for the airport and its tenants. The audit provided data on the types and quantities of waste generated by airport and tenant activities and this data will be used to inform the development of subsequent waste minimisation plans.

(C) GLOBAL REPORTING INITIATIVE

Westralia Airports Corporation recognises the value in reporting environmental performance in a manner consistent with leading industry practice to better prepare for future challenges and opportunities.

The GRI provides an internationally accepted framework for voluntary sustainability reporting. It is the intention of WAC to continue reporting against the environmental performance indicators provided by GRI through the AER.

(D) WATER EFFICIENCY MANAGEMENT PLAN (WEMP)

Westralia Airports Corporation is required to produce a WEMP as operators at Perth Airport collectively consume over 500,000kL of scheme water per annum. The WA Government requires all businesses using more 20,000kl to participate in a Waterwise Business Program, a key component of which is the development of a WEMP.

The WAC WEMP aims to improve efficiency by:

- assessing current water use on site;
- identifying inefficiencies and potential water savings; and
- identifying opportunities where other sources of water could potentially be used to substitute current potable water use.

Additionally, the WEMP includes an action plan incorporating short-term (<12 months) and long-term (>12 months) actions to be implemented. Annual reporting on the progress of the WEMP to WA Water Corporation is also required.

The WEMP will form an integral component of the IWCMP, as this plan in progressively developed and implemented throughout the period of the AES.

7. SOIL AND WATER

7.1 INTRODUCTION

Soil and water provide an essential resource for supporting native ecosystems, providing a foundation for humans to live, preserving historical landscapes and supporting spiritual, recreational, scientific, cultural and educational values. WAC strives to maintain and enhance their condition on the airport estate.

Westralia Airports Corporation has defined the following objectives to meet its commitments in relation to soil and water:

- maintain and protect the quality of soil and water within the airport estate;
- identify degraded sites and facilitate their remediation so that risks to human health and the environment are minimised; and
- minimise the potential for adverse impact to groundwater and ecological water flows arising from WAC and tenant activities.

The focus of this chapter is on soil and water quality, groundwater levels, wetland characteristics and hydrological regimes. Chapter 6 – Climate Change and Resource Use addresses potable and non-potable water use.

7.2 BACKGROUND

Soil and water quality, as individual and collective environmental attributes, are significant contributors to the overall ecological health and sustainability of the airport estate. As detailed in the later section on Conservation, ground and surface water quality and quantity are essential for the maintenance of the significant environmental attributes of the estate. Further, clean soil and water are essential to maintain the health of individuals who use Perth Airport, with water also being a critical resource for operational purposes.

7.3 FIVE YEAR ACTION PROGRAM

The strategy within this five year period is to use education and land use controls to minimise the risk of future land or water contamination and to respond proactively to the results of environmental monitoring, noting that WAC undertakes strategic environmental monitoring and tenants undertake site specific monitoring programs.

In line with the strategy the following table identifies actions to ensure soil and water quality is maintained as a minimum, recognising the impact of historical land use and impact of upstream catchment areas on surface and groundwater quality. In addition, the program seeks to investigate opportunities to actively reduce the impact from upstream flows impacting wetland systems on the airport estate and to ensure remediation programs are developed and implemented for known contaminated sites.

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Maintain and protect the quality of soil and water within the airport estate	Contamination of soils, waterways and wetland systems from upstream or on-airport activities Eutrophication of wetlands	**Existing** Undertake water quality and standing level water quality monitoring programs	1	Details provided in AER. Quarterly summary provided to AEO
		Review the monitoring programs to ensure adequacy and effectiveness	1	Provide details of any changes to AEO
		New Finalise and implement the IWCMP	2	Report against WEMP targets in the AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
		Formalise the Fill Material Policy to ensure imported fill is consistent with the Regulations	2	Detail provided in AER on finalisation of policy
		Collaborate with State and Local Government on catchment management particularly in respect to nutrient concentrations entering Munday Swamp	3	Protection measures outline in AER
		Pursue formal agreement with Department of Infrastructure for the protection of groundwater resources, based on reasonable and practicable measures	2	Detailed provided in AER
Identify degraded sites and facilitate their remediation so that risks to human health and the environment are minimised	Migration of contaminant plume impacting on environmentally important receptors and/ or beneficial land use. Contaminant sources not clearly characterised leading to further pollution	**Existing** Maintain and update the contaminated sites register including appropriate remedial action for contaminated sites	1	Report on progress of existing or newly identified sites in AER Monthly reporting to AEO on active remediation programs
		Collaborate with tenants on management actions for identified contaminated sites	1	Report on progress of existing or newly identified sites in AER
Strive to minimise the potential for adverse impact to groundwater and ecological water flows arising from WAC and tenant activities	Poor awareness of pollution control requirements leading to soil and/or water pollution Disturbance of ASS causing adverse impacts to ecosystems Contamination events not fully characterised prior to tenant vacating site	**Existing** Ensure potential for erosion and land degradation are incorporated into CEMPs and OEMPs, where applicable	1	CEMP's and OEMP's provided to AEO
		Increase tenant understanding of the local environs and management techniques	1	Quarterly MTEF
		New Formalise the protocol for ASS management at Perth Airport	2	Monthly reporting to AEO. Report ASS management in AER
		Formalise protocols for entry and exit audits	2	Report key audit outcomes to AEO
		Update the assessment of Ecological Water Requirements (EWR) and investigate appropriate management actions to maintain the EWR	4	Report in AER

7.4 EXTERNAL INFLUENCES ON SOIL AND WATER

Management of soil and water at Perth Airport is influenced by a number of external factors including:

- legislation, policy and guidelines;
- catchment influences;
- stakeholder expectations; and
- future trends.

(A) LEGISLATION, POLICY AND GUIDELINES

Commonwealth

- The *Act* – prescribes the penalties for causing pollution;
- The *Regulations* – prescribe a general duty not to pollute, and define water and soil pollution respectively. The *Regulations* also identify management requirements for suspected and confirmed contaminated sites. Schedule two and three of the *Regulations* provide the "Acceptance Criteria" of water and soil pollution respectively;
- *National Environmental Protection (Assessment of Site Contamination) Measure 1999* (NEP(ASC)M) – provides a guide for the site assessment methodologies used to determine whether contamination has occurred and if it poses a risk to either human or environmental health. The NEP(ASC)M also outlines measures for the prevention of site contamination; and
- ANZECC Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) – guidelines for setting water quality objectives required to sustain current, or likely future, environmental values for natural and semi-natural water resources.

Western Australia

State legislation and policies, whilst not binding, are used to provide reference material and may represent leading practice.

- *Contaminated Sites Act 2003* – the primary WA legislation for managing contaminated sites and comprises the State's contaminated sites register. A series of administrative and technical guidelines have also been published to aid with the identification, assessment, management and remediation of contaminated sites in WA; and
- Planning Bulletin 64 Acid Sulphate Soils (ASS) – The WAPC has published this Bulletin in response to the threat of ASS. Planning Bulletin 64 provides advice regarding rezoning, subdivision and development of land that contains ASS and provides risk mapping.

(B) CATCHMENT INFLUENCES

Catchment conditions impact the quality of water entering the airport estate. Typically water entering the estate has elevated levels of nutrients and metals and broadly reflects regional water quality. This is a consequence of current and past land uses and management practices in adjacent areas.

(C) STAKEHOLDER EXPECTATIONS

Consultation with key stakeholders has identified the following focus areas in relation to soil and water quality:

- management of ASS soils;
- maintenance of hydrological regime(s);
- consultation with State and Local Government on catchment management;
- prevention of contaminating activities; and
- active remediation of known contaminated sites.

(D) FUTURE TRENDS

Within the term of this AES changes to legislation and the existing environment may influence the management outcomes for the site.

Legislation

A review of the *Regulations* is expected to occur within this AES term. A review of Acceptance Criteria and contaminated site management are two aspects that may influence management actions, should changes occur.

Variations are currently being made to the NEP(ASC)M. The current review is being undertaken to incorporate the latest methodologies for assessing human and ecological risk from contaminated sites and updating guidance on site assessment in line with technological changes. WAC will incorporate the variations to the NEP(ASC)M in development planning and actions for contaminated site management, as they become available.

Climate Change

Climate change is expected to result in reduced overall rainfall in the South West of WA and increased intensity of storm events. There is a risk that lower rainfall, and associated surface and ground water flows will lead to declining water volumes within the estate thereby impacting on wetland ecosystems.

7.5 INTERNAL INFLUENCES ON SOIL AND WATER

Key internal influences affecting the soil and water management include:

- existing environmental conditions;
- airport development activities;
- environmental and heritage values; and
- water use.

(A) EXISTING ENVIRONMENT

The management of soils and water at Perth Airport requires consideration of key aspects of the existing environment including soil types and quality, surface and groundwater properties and wetland characteristics.

The soil, surface and groundwater quality within the airport estate are impacted by historic land uses and the quality of the water flowing onto the estate. These external influences substantially impact the interpretation of routine water quality monitoring results. Some key elements are detailed in the following sections.

SOIL

Acid Sulfate Soils (ASS)

Acid Sulfate Soils mapping, produced in association with Bulletin 64 by the WA Planning Commission (WAPC 2003), indicated a predominately moderate to low risk of ASS occurring beneath Perth Airport. Small areas of high to moderate risk are located in low-lying wetlands and dune swales in the Conservation Precincts, however they are not considered to be an environmental risk as the ASS will not be disturbed through development activities. Development activities, identified as presenting a risk of exposing ASS, are discussed under Current Management. Mapping of ASS risk potential on the estate is shown in Figure 5.

Contaminated sites

Past land uses on the airport estate have included market gardens, livestock grazing, landfill, aviation and industrial activities. Although the majority of areas within the estate are free from soil contamination, the past and present land uses have resulted in six sites being identified as locally contaminated and subject to management actions. Modelling and monitoring indicate the majority of contamination plumes are restricted to areas directly under and adjacent to the original source. A number of these sites require active management to ensure impacts are minimised.

Detailed information on the specific sites, management responses and progress is providedin Perth Airport's AER.

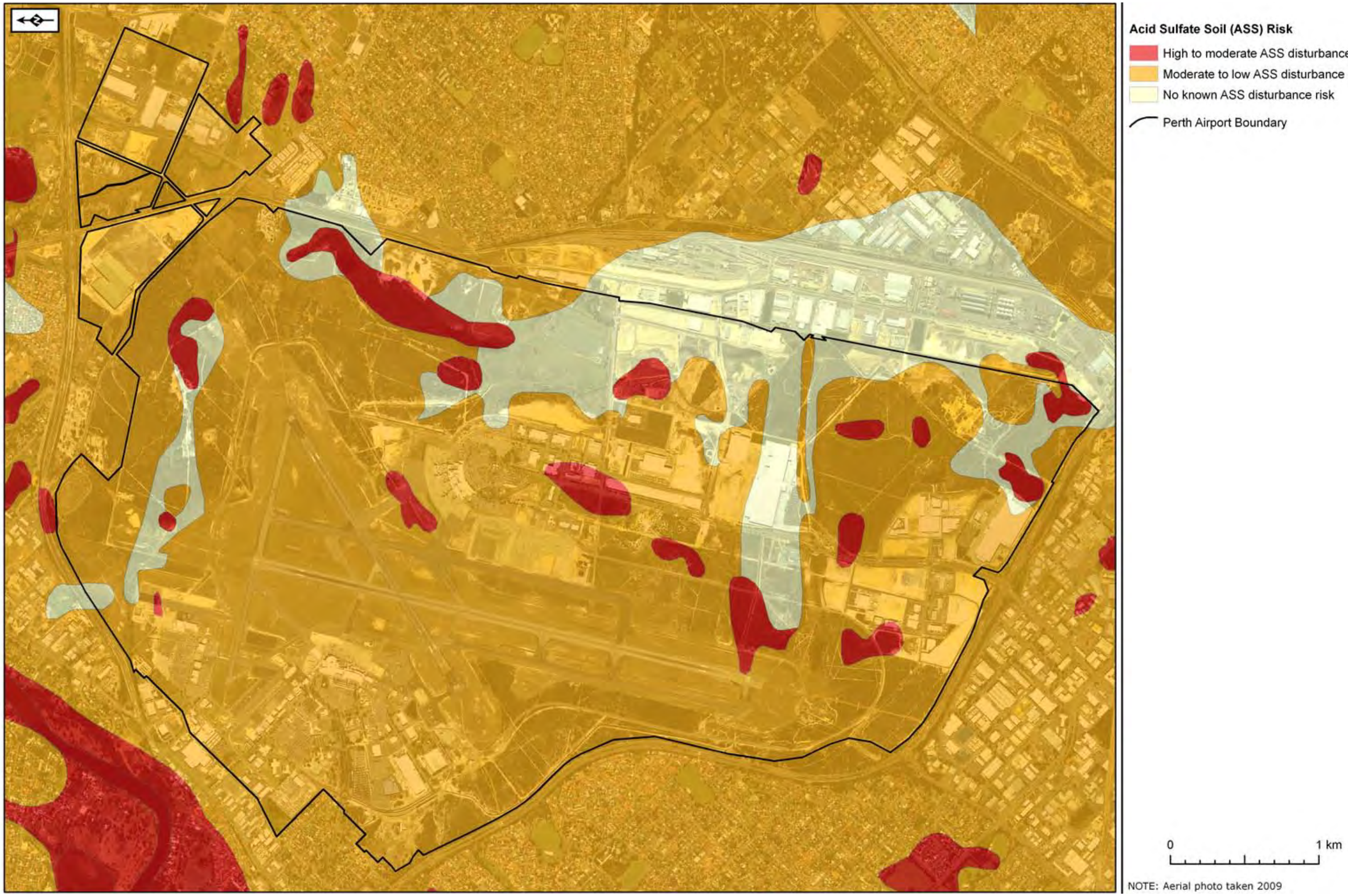


FIGURE 5: ACID SULFATE SOIL RISK

FIGURE 6: SURFACE WATER FLOWS

WATER

Surface Water

Perth Airport is situated immediately above the floodplain of the Swan River, located less than 500m from the northern boundary of the estate. Past and current land use has led to the modification of natural surface water flows which are now predominantly through the Southern and Northern Main Drains (Figure 6).

These drains generally flow east to west and have been constructed as extensions and modifications to naturally occurring water bodies. They are named the Perth Airport Northern Main Drain (NMD), and Perth Airport Southern Main Drain (SMD).

The SMD receives surface flow from Poison Gully which flows through the Forrestfield Rail Marshalling Yards and a number of residential suburbs.

The NMD receives surface flow from the overflow of Munday Swamp and the Poison Gully Branch Drain. The Poison Gully Branch Drain splits from Poison Gully approximately 400m east of the Perth Airport boundary. It then flows adjacent to Grogan Road to the West of Munday Swamp as a contributor to the NMD. Historic photographs indicate that the Poison Gully Branch Drain has never fed Munday Swamp.

The environmentally sensitive area of Munday Swamp is fed by Poison Gully, High Wycombe Branch Drain and Macao Road Branch Drain. These convey water from the northern end of the Forrestfield Rail Marshalling Yards and residential areas in the Shire of Kalamunda.

A large proportion of the flow in these drains arises outside the Perth Airport boundary, meaning the drains primarily act to convey water through the estate to the Swan River. The water quality in the NMD and SMD therefore reflects the land uses of the catchment, including the former Forrestfield Railway Marshalling Yards, former and current agricultural land, as well as commercial, industrial and residential developments. The impact on environmental values from upstream catchment water quality is an issue of concern, WAC will seek to engage with key groups responsible for local area catchment management.

Water quality within the drains at the point they first flow into the airport estate frequently exceeds the Acceptance Criteria detailed in the *Regulations* for a variety of chemical pollutants. Extensive monitoring, since 2001, has demonstrated on-site activities do not degrade the existing regional surface water quality.

Within the airport estate, water flows from built infrastructure such as roads, carparks, tarmac areas and roofing, are directed into the airport drainage system.

Detailed descriptions of surface water quality are provided in Perth Airport's AER.

Ground Water

Similar to surface water quality, monitoring indicates that the quality of superficial groundwater reflects historic land uses, the up gradient catchment and naturally occurring conditions. As a result, concentrations of nutrients and heavy metals regularly exceed the Acceptance Criteria detailed in the *Regulations*. Nutrient concentrations tend to represent historic land uses such as agriculture, industrial and residential, whilst metal occurrences represent background concentrations.

There are isolated instances of groundwater contamination primarily associated with areas of soil contamination. As discussed earlier under Contaminated Sites, modelling and monitoring indicates the majority of contamination plumes are restricted to areas directly under or adjacent to the original source and represent limited risk to the environment on the basis of appropriate management.

Wetlands

Relatively large areas of land at Perth Airport are subject to seasonal inundation due to the shallow depths of groundwater, surface water inflows and the heavy nature of underlying clays resulting in poor drainage. The main wetlands on the estate are identified in Figure 7 and include:

- Munday Swamp;
- Northern Wetland;
- Runway Swamp; and
- Precinct 5 Constructed Wetland.

(B) AIRPORT DEVELOPMENT ACTIVITIES

Westralia Airports Corporation acknowledges that its estate forms part of a wider catchment and that airport related activities also have the potential to influence soil and water values in external environs. Key influences on soil and water quality arising through airport development activities include:

- disturbance of ASS;
- increased risk of soil and water contamination;
- sedimentation and physical impacts of debris; and
- alterations to hydrological regimes.

(C) ENVIRONMENT AND HERITAGE VALUES

Environmentally significant areas at Perth Airport, namely Precincts 5 and 7, are recognised by their vegetation, wetland and heritage values. Maintaining soil and water quality and hydrological flows contributing to and within these ecosystems is integral to the ecological sustainability of the airport.

Munday Swamp is both an important ecological and Aboriginal heritage site.

(D) WATER USE

Perth Airport sources approximately 35% of its total water use from the superficial groundwater aquifer, mainly for irrigation and construction purposes. Maintaining water quality and ground water levels for use on the estate is considered in management of the resource. Chapter 6 Climate Change and Resource Use, provides more information pertaining to water use.

Integrated Water Cycle Management (IWCM)

Management of surface and groundwater at Perth Airport will be implemented through the IWCMP. The IWCMP will include the following principles:

- consideration for all water sources (including wastewater) in planning;
- promotion of sustainable and equitable use of all water sources;
- consideration for all water users; and
- "Whole of catchment' integration of water use and natural processes.

Integrated Water Cycle Management is also discussed in Chapter 6 – Climate Change and Resources Use.

7.6 CURRENT MANAGEMENT

Westralia Airports Corporation currently manages soil and water values through several integrated approaches including:

(A) MONITORING AND REPORTING

Monitoring is undertaken and reported in accordance with Section 3.09 of the *Regulations*. Figure 8 identifies the sites at which groundwater and surface water monitoring is completed. Frequency of monitoring is dependent on the attribute being measured to ensure early identification of issues and the ability to establish trends over time.

Baseline data is collected including impacts of up gradient and historic land use. Comparisons are then able to be made with the most recent data, and changes resulting from current activities can be identified. Reporting is important for transparency and accountability. The collected monitoring data and trends are available in Perth Airport's Annual Environment Report.

In accordance with Section 3.09 of the *Regulations* monitoring is undertaken by suitably qualified persons. Where appropriate, sample analysis is conducted at NATA accredited facilities and compared with the Acceptance Criteria in the *Regulations*. Monitoring of soil quality is undertaken on a site specific basis in relation to ASS and contaminated sites.

Reporting is recognised as an important factor for transparency and accountability. Monitoring data and trends are presented annually in Perth Airport's AER.

(B) MANAGEMENT PLANS AND PROTOCOLS

Management plans developed for construction and for ongoing operations reduce the risk of degradation to soil and water values on the estate.

- Environmental Screening Checklist - WAC undertakes preliminary screening of all projects to determine the potential for environmental impact; and
- Construction Environmental Management Plans – are required for developments with moderate to high risk of adverse impacts to environmental and/or heritage values. WAC reviews all CEMPs prior to works being permitted to commence; and
- Operational Environmental Management Plans – airport tenants and contractors are required to develop an OEMP to demonstrate how environmental risks and potential impacts will be managed. The OEMP must contain a risk assessment identifying risks and management measures, including pollution control systems and monitoring programs. The OEMP is reviewed by WAC and external auditing is undertaken to ensure compliance.

(C) MANAGEMENT AND FACILITATION OF CONTAMINATED SITES

To ensure compliance with the *Regulations*, WAC:

- maintains an Environmental Site Register;
- collaborates with the AEO and tenants in investigation, management and remediation of known contaminated sites; and
- monitors and reports annually on all known sites of soil contamination.

The ESR identifies known contaminated sites at Perth Airport. In accordance with the *Regulations* the register contains information regarding the contaminated site including the results of monitoring data and, where applicable, details of remedial plans.

Westralia Airports Corporation reports on contaminated site management in the AER.

FIGURE 7: WETLANDS

FIGURE 8: WATER MONITORING LOCATIONS

8. CONSERVATION

8.1 INTRODUCTION

Westralia Airports Corporation recognises the value of remnant bushland for providing habitat for flora and fauna, improving recreational and educational opportunities, and scientific research. Planning and development at Perth Airport ensures integration of the key conservation attributes with the significant economic and social development opportunities provided by the airport.

The airport estate contains areas of high quality bushland, wetlands of regional significance, sites of Indigenous importance and habitat for rare flora species. Two precincts (Precincts 5 and 7) are recognised as environmentally significant areas at Perth Airport and have been reserved for conservation purposes.

The key conservation objectives are to;

- maintain and enhance the biodiversity and conservation values of the airport estate in a manner consistent with an operational airport;
- apply adaptive management to respond appropriately to the impacts of climate change.
- manage the Conservation Precincts to maintain their essential ecological functions, engaging in rehabilitation where appropriate;
- increase connectivity within the airport Conservation Precincts and between the airport estate and surrounding region;
- promote awareness of the biodiversity and cultural values at Perth Airport to stakeholders and the wider community; and
- ensure all conservation initiatives are undertaken with a vision towards self-sustaining conservation reserves within the estate.

8.2 BACKGROUND

Detailed site-specific studies conducted by WAC found that Precincts 5 and 7 support the most diverse range of populations and variety in habitat on the estate. Both Precincts also support populations of endemic, rare and threatened species protected by Commonwealth legislation.

Precincts 5 and 7 were selected for conservation based on detailed studies and with consideration for the recommendations and policies of the Australian Heritage Council, Department of Environment, Water, Heritage and the Arts and various State agencies.

8.3 FIVE YEAR ACTION PROGRAM

Westralia Airports Corporation's position as the operator of the principal airport for Western Australia, provides an opportunity to leverage from existing community awareness of the estate in the promotion of the conservation status of environmentally significant areas. This opportunity is realised through the adoption of a 'living classroom' approach, building relationships with universities, local schools, and the broader community.

The strategy within this five year period is to conserve the areas necessary to preserve all the key environmental attributes that can be supported on the estate consistent with continued safe operation of the airport and to adaptively manage these areas to enhance their quality.

The following table of actions recognises the dynamic nature of ecosystems and unknown impacts of climate change. The long term vision is to rehabilitate the conservation precincts as self-sustaining ecosystems, requiring minimal ongoing management. This vision will be facilitated through the development of a Conservation Completion Plan in consultation with key stakeholders.

OBJECTIVES	OPPORTUNITIES/ IMPACTS	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Maintain and enhance the biodiversity and conservation values of the airport estate in a manner consistent with an operational airport	Uncontrolled development and operations on the estate causing degradation and/ or loss of rare or threatened flora and fauna species Loss of biodiversity	**Existing** Annually produce, implement and review the Conservation Precincts Management Plan (CPMP)	1	Report progress against targets in AER and to stakeholder forums
		Investigate opportunities for re-introduction of the Western Swamp Tortoise	1	Provide updates in AER
Apply adaptive management to respond appropriately to the impacts of climate change	Adverse changes in temperature, rainfall, hydrology causing irreversible damage to environmental values	**New** Undertake vulnerability assessment of key environmental assets to climate variation – refer Chapter 6	2	Report key outcomes and recommendations in AER
		Develop management plans for environmentally threatening processes	3	Provide details to AEO and report against recommendations in AER
Manage the Conservation Precincts to maintain their essential ecological functions	Irreversible loss of ecological function	**Existing** Continue to explore new methods of increasing knowledge of conservation management by: • Active engagement of stakeholders regarding conservation issues; • Utilise the latest research within the conservation and scientific community	1	Report in AER Provide updates to stakeholder forums
		Implement rehabilitation in accordance with the CPMP	1	Provide details of rehabilitation in AER
		Address environmental disturbance factors and develop new initiatives	1	Provide details of impacts and initiatives in AER
		New Determine ecological health indicators to inform actions within the CPMP	2	Provide details of ecological health indicators in AER
		Promote and facilitate relevant collaborative research initiatives	2	Details provided in AER and to stakeholder forums
		Annually review the Urban Bushland Plan for Fire Management	2	Details provided to AEO annually following review

OBJECTIVES	OPPORTUNITIES/ IMPACTS	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
		Collaborate with Commonwealth and State agencies in the development and implementation of recovery plans for the protection of rare flora	3	Details of recovery plans and progress in AER and to stakeholder forums
Increase connectivity within the airport Conservation Precincts and recognise the importance to regional linkages	Isolation of native flora and fauna communities resulting in vulnerability to local impacts and population decline	**New** Increase regional landscape connectivity by working in collaboration with State and Local Governments through the Conservation Completion Plan	4	Provide details for maintaining regional connectivity in AER
Promote awareness of biodiversity and cultural values at Perth Airport	Opportunity to utilise environmental values as a living classroom	**Existing** Annually develop and implement a schedule of events to promote the conservation values of the estate to the community	1	Provide details of events and outcomes in AER
Ensure all conservation initiatives are undertaken with a vision towards self-sustaining conservation reserves within the estate	Recognising dynamic nature of ecosystems and importance of maintaining intra and inter estate linkages	**New** Develop a Conservation Completion Plan that defines the desired conservation completion criteria for the estate	3	Details for progress provided in AER

8.4 EXTERNAL INFLUENCES ON CONSERVATION MANAGEMENT

Westralia Airports Corporation is required to integrate environmental management with the requirements associated with safe aeronautical operations, infrastructure and land development aspirations. A number of external factors influence the conservation values at Perth Airport, these include:

- principles of environmental management;
- changes to adjacent land uses;
- legislation, policy and guidelines;
- register of the National Estate (RNE); and
- changing expectations and future trends.

(A) PRINCIPLES OF ENVIRONMENTAL MANAGEMENT

Conservation at Perth Airport encompasses both strategic and adaptive management techniques including:

- conservation of biological diversity and ecological integrity;
- intergenerational equity;
- environmental, social and economic considerations;
- integrated environmental management, and
- continuous improvement.

The principles for managing biodiversity identify factors relating to conservation reserve design, such as size, shape, perimeter to area ratio, vegetation condition, and connectivity. These factors provide the basis for maintaining ecological linkages to allow the movement of flora and fauna between areas.

Ecological linkages are non contiguous natural areas that connect larger natural areas by forming stepping stones allowing the movement of flora and fauna between areas. Where practicable, WAC will aim to support ecological stepping stones through the retention of vegetation of 'Good' quality or better linked by fauna corridors across the estate.

Substantial research has been undertaken by State based agencies applying better practice in conservation management to a Western Australian context. This research has been consolidated into Biodiversity Planning Guidelines for the Perth Metropolitan area. This reference has been directly applied in the development of strategies outlined in this chapter, particularly with reference to:

- identification of regional bushland importance;
- viable minimum reserve size;
- establishment of sustainable ecological linkages; and
- Perth Airport's context in regional linkages.

(B) CHANGES TO ADJACENT LAND USES

The Perth Metropolitan Region Scheme (PMRS), administered by the Western Australia Planning Commission identifies areas of land adjacent to the airport as residential. These areas however have remained unpopulated or low density until recently.

Recent 'boom' economic conditions and population growth in WA, have made this residentially zoned property increasingly viable for new developments including increased density housing and light industrial developments. This has increased the potential impact on the conservation values of the estate through the introduction of predatory and non-native species (e.g. domestic animals, plant and rodents) and an increased risk of fires.

(C) LEGISLATION, POLICY AND GUIDELINES

Part 4, Division 2 of the *Regulations* provides the legislative framework to manage the airport in such a way as to protect and conserve the environment. Section 3.07 stipulates the airport-lessee company must specify areas of environmental significance within the airport site.

The *Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act)* provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places — defined in the *Act* as matters of national environmental significance.

The DITRDLG has developed land clearing guidelines for ALC's. These guidelines provide advice for undertaking clearing activities at federally leased airport.

The Perth Biodiversity Project and Bush Forever Program provide biodiversity planning guidelines and reference material which are considered by WAC in its approach to conservation management.

(D) REGISTER OF THE NATIONAL ESTATE (RNE)

The following three sites within the estate are listed on the RNE:

- Munday Swamp Bushland (Site # 100871);
- Munday Swamp and Surrounding Bushland (Site # 102483); and
- The Forrestfield bushland (Site #100875).

Under legislation introduced in 2004, two new lists, the National Heritage List and the Commonwealth Heritage List, were created to supersede the RNE. The preceding sites were not considered appropriate to uplift onto either of the two new lists. In 2007 the RNE was frozen however, it will continue as a statutory register until February 2012.

(E) CHANGING EXPECTATIONS AND FUTURE TRENDS

Environmental and conservation management provides a dynamic process as new scientific research and technology emerges.

Of particular relevance to conservation management at Perth Airport are:

- Dieback Management;
- Fire Management;
- Threatened Species Management; and
- Ecological Restoration.

The legislative changes, such as the anticipated review of the *Regulations* over the five year period of this strategy, could influence the direction of conservation management on the estate.

Changes within the political environment and public domain may also influence conservation management practices. These include:

- public expectations for greater corporate social responsibility; and
- political focus may influence conservation values, management approaches and expectations. For example, this has been seen through the increased use of offsets and renewed focus on rare fauna.

Westralia Airports Corporation recognises the importance of ensuring conservation management remains consistent with changes to federally listed species occurring at Perth Airport.

8.5 INTERNAL INFLUENCES ON CONSERVATION MANAGEMENT

Conservation management is affected by the following internal influences:

- the existing environment; and
- threatening processes and disturbance factors.

(A) THE EXISTING ENVIRONMENT

In addition to Conservation Precincts 5 and 7, a 39ha area is reserved as Infrastructure Only Conservation Zone (IOCZ). The IOCZ is recognised as an area with important environmental attributes at Perth Airport and set aside as part of an agreement with the then Minister for Environment, Heritage and the Arts. Whilst the area was principally to remain intact for conservation purposes it was recognised that essential pieces of infrastructure were required to traverse the area. Plans are currently being developed to link Leach Highway onto Perth Airport. Following recent traffic modelling, it is possible that this road linkage will impact on the IOCZ, existing approvals and the need for further approvals is recognised. Greater detail on the proposed road linkages are provided in the MP.

The Conservation Precincts are managed in accordance with the annual *Conservation Precincts Management Plan* (WAC 2008b).

Key aspects of the existing Perth Airport environment are:

- **Native flora** – regular surveys have identified 444 native species on the estate. These surveys also monitor vegetation health. Two flora species listed under the *EPBC Act* and nine Priority Species pursuant to the *Wildlife Conservation Act* are found on the Perth Airport Estate.
- **Introduced flora (weeds)** – 210 introduced weed species in 128 taxa have been identified on the airport site.
- **Phytophthora Dieback *(Phytophthora cinnamomi)*** – surveys have found Dieback present on the estate which is a key threatening process to Australia's Biodiversity.
- **Native Fauna** – Perth Airport supports a rich diversity of vertebrate fauna and several species recorded at the site are found in only a few areas within the Metropolitan area.
- **Introduced fauna** – non-native fauna can lead to increased competition with and predation of native fauna.

- **Suitability of habitat for introduction of threatened species** – selected wetlands on the estate have been identified as providing potential habitat for the critically endangered Western Swamp Tortoise. WAC is committed to working with Commonwealth and State agencies to investigate the introduction of this species into two wetlands in the north east part of the estate located within Precinct 7.
- **Wetlands** – Perth Airport supports four key wetlands including the ecologically significant Munday Swamp.

More information on each of the above is outlined in Appendix A, Section 6.

(B) THREATENING PROCESSES AND DISTURBANCE FACTORS

A number of key threatening processes and disturbance factors have been identified on the Swan Coastal Plain and are considered relevant to conservation at Perth Airport. These include;

- Illegal access specifically from motorbikes, four wheel drive vehicles and quad bikes which cause destruction of vegetation and fauna habitats and increase the potential for erosion, spread of weeds and dieback.
- Clearing - reducing the distribution of vegetation communities and flora species and increasing habitat fragmentation.
- Introduced species - increasing competition with, and predation of, native species.
- Altered hydrology and water quality (surface and ground water).
- Spread of diseases - including dieback *(Phytophthora cinnamomi)*.
- Altered fire regimes - potentially resulting in loss of vegetation, habitat and increasing the spread of weeds.
- Past land uses - Degrading impacts from past land uses including agriculture.

8.6 CURRENT MANAGEMENT

ENVIRONMENTALLY SIGNIFICANT AREAS

Section 116 (2)(b) of the *Act* requires any area within the airport site which the ALC identifies are environmentally significant to be specified within the AES. Accordingly WAC recognises the areas identified in figure 9 as Precinct 5 and 7 as being environmentally significant.

The recommendations of State agencies, specifically the DEC and the Department of Planning and Infrastructure (DPI) have been taken into account in the delineation of the environmentally significant areas and the approach to conservation management set out in this document. This has been done during the initial MP process and continues through review of documented policies and direct contact such as the ECG.

Regular contact is made with State Government agencies via the ECG at which conservation management plans and follow up monitoring are discussed. In addition numerous site visits by officers of State agencies have occurred during the previous strategy period.

Specific recommendations have also been sought and received by State agencies during the perpetration of the 1999, 2004 and this Environment Strategy.

Westralia Airports Corporation currently manages its conservation plans through:

(A) CONSERVATION PRECINCTS MANAGEMENT PLAN (CPMP)

The Conservation Precincts Management Plan (CPMP) provides a three year vision for conservation management at Perth Airport. It is developed annually and details activities and implementation schedules for management processes within the Conservation Precincts.

FIGURE 9: ENVIRONMENTALLY SIGNIFICANT AREAS

The CPMP addresses the management of the following areas:

- **Rehabilitation** – active rehabilitation of conservation areas has been underway and monitored since 2005. WAC is committed to developing a Conservation Completion Plan for the Conservation Precincts of the estate that will define the desired outcome for these areas.
- **Weed management** – weed control is aimed at reducing the threat of weeds in rehabilitation areas and for the preparation of sites for future restoration. It is an integral component of rehabilitation and restoration activities in the estate's Conservation Precincts.
- **Feral animal management** – the management of a number of feral animals is undertaken strategically to incorporate both habitat and foraging preferences.
- **Phytopthora Dieback management** – a phosphite treatment trial has been initiated on identified areas of the estate to boost the natural defences of susceptible plants against the disease.
- **Fauna management** – data from monitoring is used to inform management decisions and undertake specific fauna management actions as required.
- **Fire management** – current fire management practices on the airport estate are aimed at fire prevention, response and control in the event of a wildfire. A diverse fire regime is identified as one approach to promote biodiversity in a landscape.
- **Illegal access management** – WAC currently has a range of initiatives to combat illegal access, however this issue requires further investigation to provide more effective outcomes.

More information about each of the above is included in Appendix A, Section 6 and provided annually in the AER.

(B) AERONAUTICAL REQUIREMENTS

The protection of airspace is essential in order to provide a safe environment for the arrival and departure of aircraft in all weather conditions. Conservation efforts at the site are conducted to ensure safe airspace is maintained.

There are three key elements of the aeronautical requirements:

- **Obstacle Limitation Surface (OLS)** – defining the airspace which should ideally be kept free of obstacles. Vegetation within Conservation Precincts that impedes the OLS is routinely trimmed or removed in consultation with the AEO.
- **Birds and Animal Hazard Management** – fauna, in particular birds, pose a significant risk to aircraft in-flight or landing and are managed under the Bird and Animal Hazard Management Plan (WAC 2008c). WAC has combined the following four facets of bird and wildlife management to provide a safe operating environment for aircraft:
  - detection;
  - deterrence;
  - harassment and
  - exclusion.

  Further information about Birds and Animal Hazard Management is included in Appendix A, Section 6.
- **Enhanced security requirement** – conservation efforts at Perth Airport must be undertaken in a manner considering security requirements for an international airport such as the potential need for a line of sight and modifications to security fencing.

(C) LAND USE AND CONSERVATION INTERFACE

Westralia Airports Corporation plans to continue developing the Perth Airport estate consistent with the MP to ensure WA is adequately serviced by this key infrastructure asset. This action will require clearing of native vegetation and habitat disturbance to facilitate expansion.

To optimise sustainable development of the airport estate, WAC is considering entering into a Conservation Agreement with the Commonwealth Government that recognises the significant biodiversity values at Perth Airport and the importance of the airport estate in the economic and social development of WA.

LANDSCAPE MASTER PLAN

Westralia Airports Corporation is currently developing a landscape Master Plan. This plan will complement conservation initiatives on the airport estate, which will be finalised during the period of this AES. The plan will consider conservation of native species and include the use of native species in landscaping works on the airport site. It will also consider the impact of weed (exotic) species and actively avoid species known to be a problem in conservation areas. The removal of potential bushland weed species from existing landscaping on the airport estate may ultimately be considered.

9. AIR QUALITY

9.1 INTRODUCTION

Ground-based activities, excluding aircraft emissions, are controlled under the *Regulations*. Aircraft emissions are governed by the *Air Navigation (Aircraft Engine Emissions) Regulations* and are prescribed as the responsibility of the aircraft operators; therefore they are not covered within the scope of this AES.

Westralia Airports Corporation recognises its ground-based activities have potential to impact air quality and acknowledges the strong local community interest in air quality. Potential environmental impacts of WAC's and tenant ground-based activities on air quality include dust generation, odour and point source emissions. WAC is committed to facilitating the management of potentially adverse impacts to air quality from businesses operating ground-based activities at Perth Airport through:

- Assessing the risk of impacts to local air quality arising from activities at Perth Airport through evaluation of available monitoring data and development applications.

Global atmospheric issues such as climate change are addressed in Chapter 6 of this document.

BACKGROUND

Air quality in the Perth Metropolitan region has improved over time (DEC 2000b). There is also an increasing understanding of the impact that air quality can have on the health of the community. In the Perth Metropolitan area community awareness of potential air quality impacts have been raised through a number of high profile pollution events such as fires at oil reconditioning and scrap metal facilities.

9.2 FIVE YEAR ACTION PROGRAM

The strategy within this five year period is to use education and land use controls to minimise the risk of air pollution and to respond to the results of environmental monitoring, where the state undertakes strategic environmental monitoring and tenants undertake site specific monitoring programs. The following table details actions to achieve this strategy.

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Assessing the risk of impacts to local air quality arising from activities at Perth Airport through evaluation of available monitoring data and development applications	Adverse impacts to local air quality	**Existing** Publicly report air quality data, impacts and management	1	Comparative air quality data provided in AER
		Report to the NPI where threshold levels are triggered	1	Annually report emissions to NPI
		Monitor state and tenant air quality data and modify management measures as required	1	Report in AER
		Undertake investigations to determine if airport activities are a major contributing factor where airshed quality standards exceed the ambient air quality standards	1	Provide quarterly review of regional air quality to AEO

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
		Maintain systems to review the potential for air quality impacts arising from development activities	1	Monthly report on audit outcomes to AEO
		New Develop an inventory of emission sources and establish measures to mitigate emissions where practicable	3	Detail provided annually in ESR
		Validate comparison to Caversham monitoring station data through consolidation of tenant air quality monitoring data	3	Tenant data consolidated in ESR Validation against Caversham data reported in AER

9.3 EXTERNAL INFLUENCES ON AIR QUALITY

Air quality is influenced by external factors including:

- Legislation, policy and guidelines;
- adjacent land uses; and
- Stakeholder expectations and future trends.

(A) LEGISLATION, POLICY AND GUIDELINES

Commonwealth

- The *Act* – air quality at federally-leased airports is primarily regulated by the *Act*. Under the *Act* it is an offence to cause environmental pollution (air, soil and water);
- The *Regulations* – acceptable limits of air emissions for stationary sources and ambient air quality are detailed in the *Regulations* (Schedule 1). However, as noted the *Regulations* exclude pollution generated by aircraft and dictate that the regulation of emissions from private vehicles, taxis and buses is controlled under State legislation;
- *National Environment Protection (Ambient Air Quality) Measure* – established under Section 14(1) of the *National Environmental Protection Council Act, 1994* to achieve the protection of human health and well being. The NEP(AAQ)M sets ambient air quality standards and provides a nationally consistent monitoring and reporting framework for seven pollutants; and
- *National Environment Protection (National Pollutant Inventory) Measure* – NPI provides emission estimates for 93 substances from approximately 4000 facilities nationwide, including major Australian airports. The program, run cooperatively between Commonwealth and State Governments, provides a cleaner production management tool, while also functioning as an accessible information source for the community and other stakeholders. Substances that exceed NPI thresholds are reported on annually.

State

State legislation and policies, whilst not binding, are used to provide reference material and may represent leading practice. The Perth Air Quality Management Plan (AQMP) is a State initiative to improve air quality in the Perth airshed. WAC supports the aims of the AQMP, which includes reducing the emissions of those atmospheric pollutants that are currently causing occasional episodes of unacceptable air quality and preventing the development of future air quality problems.

(B) ADJACENT LAND USE

Notable influences on ambient air quality surrounding Perth Airport include:

- major arterial road networks;
- activities within industrial estates; and
- adjacent residential areas.

The major arterial routes bounding the airport estate are key sources of atmospheric pollutants in the local airshed. As with the rest of the Metropolitan region, these road networks are experiencing a significant increase in traffic that will add to the quantity of atmospheric pollutants impacting local air quality. Motor vehicles were the highest source of pollution within the area surrounding Perth Airport, as reported in the 2007 NPI database.

In line with the rapid growth recently experienced in the Perth Metropolitan region, urban areas have encroached into historically rural land adjacent to the airport site. The modification in nearby land use may result in:

- a potential increase in domestic sources of atmospheric pollutants into the local airshed; and
- an increase in the number of people and commercial enterprises that could be susceptible to localised air quality impacts, particularly odour and dust.

(C) STAKEHOLDER EXPECTATIONS AND FUTURE TRENDS

Atmospheric pollutants are not contained within a discernible boundary and, as such, activities that have the potential to influence air quality are of interest to the wider community. Consequently, the expectation that organisations will manage the risks associated with atmospheric pollutants is expected to continue during the period of this AES.

Anticipated legislative reviews that may influence air quality monitoring and management practices include the NEP(AAQ)M and the *Regulations*. These are under review at the time of writing this AES and are expected to come into effect within the term of the Strategy.

9.4 INTERNAL INFLUENCES ON AIR QUALITY

THE EXISTING ENVIRONMENT

The concentration of atmospheric pollutants in the Perth Metropolitan region is generally within guideline limits. Occasionally however, measured levels fail to meet national guidelines, especially for particulates and photochemical smog (DEC, 2000b). Pollution events usually occur during periods of poor dispersion or when conditions are conducive to smog formation.

Key influences on air quality within the Perth Metropolitan airshed include domestic heating, motor vehicle use, commercial and industrial activities and bush fires. Potential activities undertaken at Perth Airport, excluding aircraft emissions, that could result in adverse air quality include:

- industrial and commercial processes;
- storage of fuel, fuel spills and refuelling of aircraft;
- operation of land based vehicles, including airport support and maintenance vehicles;
- auxiliary and ground power units;
- aircraft painting activities;
- construction activities;
- fire training exercises; and
- maintenance workshops.

The above activities have limited potential for impact on local air quality, with the exception of specific tenants with defined monitoring conditions associated with their approval to operate.

Air quality at the airport is inferred from ambient air quality monitoring undertaken by the DEC at a network of sites in the Perth Metropolitan region. Caversham monitoring station is situated within 10km of the airport and is considered to be representative of air quality within the Perth Airport airshed. Parameters monitored at this station are carbon monoxide, ozone, nitrogen oxide and particles as PM_{10}. This data verifies that atmospheric contaminants are generally within standards established by the *National Environment Protection (Ambient Air Quality)* Measure (NEP(AAQ)M). Further details are provided in Perth Airport's AER.

AIRPORT DEVELOPMENT ACTIVITIES

Development activities at Perth Airport are the main influence on air quality management processes. Development activities include: consolidation of the terminal complex, upgrades to the runway and taxiway network, improved access to the airport estate, development of the airport's internal transportation network, and development within the Commercial Precinct including industrial facilities. Associated air quality considerations include:

- increased potential for dust and odour from construction activities;
- increased potential for escalated PM_{10} particles due primarily to dust from increased road and air traffic; and
- an increase in people and commercial enterprises both at the airport and in nearby environs that could be affected in the event of adverse air quality impacts.

9.5 CURRENT MANAGEMENT

In order to minimise potential adverse air quality impacts from the sources identified above, WAC and airport tenants have established mitigating measures, including:

- development approval processes, which consider air quality impacts in the assessment;
- pollution control systems;
- management of potentially polluting activities through OEMPs and CEMPs;
- ongoing monitoring and estimation of pollutant emissions;
- emergency response programs; and
- specific investigations and programs as required.

EVALUATION OF AIR QUALITY IMPACTS

Westralia Airports Corporation has an integral planning approval process that evaluates the potential impacts on air quality from proposed developments. This process ensures that identified impacts and appropriate mitigating measures are adopted prior to approval being granted.

Air quality impacts from ongoing WAC and tenant activities, excluding aircraft operations, are evaluated through WAC risk management processes and identified impacts are documented in the airport's Risk Register. An annual review of the Risk Register ensures any new emission sources are captured and considered.

MONITORING OF AIR QUALITY

Westralia Airports Corporation reviews State Government monitoring data to determine if measured air quality parameters remain within acceptable levels in the local airshed. If levels are exceeded, WAC will undertake investigations to determine whether airport operations represent a major contributory factor.

Tenant air quality monitoring data is also reviewed for compliance to the *Regulations*, commitments within OEMP's and/or MDP conditions. In the event exceedances to the *Regulations* occur as a result of tenant activities, WAC will work with the tenant and the DITRDLG to ensure appropriate corrective actions are implemented including validation sampling, if required.

Since the completion of the Airport Industry Handbook in December 2000, NPI reporting has been a requirement for Australian airports that trigger threshold levels. As a result, NPI emission estimations are reported annually.

MANAGEMENT OF ACTIVITIES AND RESPONSE TO INCIDENTS

The management of activities with the potential to pollute is controlled primarily through the implementation and monitoring of CEMPs and OEMPs. Where high to moderate risk exists, the EMP defines the relevant management control to minimise adverse impacts on air quality. Specifically, EMPs include dust, odour and point source emissions as examples of air quality impacts.

As previously described, Ministerial conditions placed on MDP's may incorporate environmental requirements. WAC will actively engage with tenants and the DITRDLG to ensure compliance to MDP conditions.

Westralia Airports Corporation recognises that although usually minor, incidents such as chemical and hydrocarbon spills, have the potential to result in atmospheric pollutant emissions. An emergency response procedure is in place to reduce the emission of vapours, minimise the spill areas and clean the spill efficiently and effectively.

10. GROUND-BASED NOISE

10.1 INTRODUCTION

Aircraft noise is managed directly by the DITRDLG through the *Air Navigation Act 1920* and *Air Navigation (Aircraft Noise) Regulations 1984* and is outside the scope of this AES.

Westralia Airports Corporation recognises that aircraft noise is an important issue for the community and is actively involved in its management, primarily through the Aircraft Noise Management Consultative Committee (ANMCC) and *Aircraft Noise Management Strategy*. Aircraft noise issues are further addressed in the Master Plan 2009.

This AES addresses ground-based noise impacts, which are managed at Commonwealth leased airports through the *Act* and the *Regulations*. WAC acknowledges that ground-based noise generated at Perth Airport may cause adverse impacts for the local community. This AES addresses the management of both ground-based aviation and non-aviation noise.

To guide the management of ground-based noise, WAC has established the following objectives:

- work with stakeholder groups to minimise impacts from ground-based noise that occurs through the operations and growth of Perth Airport; and
- ensure the impact of noise is considered during the assessment process for developments during construction and operational phases.

10.2 BACKGROUND

Westralia Airports Corporation recognises the importance of appropriate ground-based noise management on the estate for sustainable business and operational practices.

10.3 FIVE YEAR ACTION PROGRAM

The strategy within this five year program is to continue to work with key stakeholders to implement the Perth Airport Noise Management Strategy. The following table of actions is designed to recognise the important role WAC has in facilitating the understanding and resolution of aircraft noise issues and opportunity to appropriately assess and manage impacts from ground based noise.

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Work with stakeholder groups to minimise impacts from aircraft and ground-based noise that occurs through the operations of Perth Airport	Adverse impacts on stakeholders and the community	**Existing** Collaborate with key stakeholders in the management of aircraft and ground-based noise	1	Details provided in AER Discussed in ANMCC
		Implement the Aircraft Engine Ground Running (EGR) Management Plan with revision of aircraft ground running procedures	1	Details provided in AER Discussed in ANMCC

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
		Record and report on ground running events	1	Noise complaints arising through EGR described in AER Discussed in ANMCC
		Monitor ground-based noise complaints and initiate investigations where warranted	1	Details provided in AER
Ensure the impact of noise is considered during the assessment process for developments during construction and operational phases	Ground-based noise from development and operational activities on the estate causing adverse impacts on the local community	**Existing** Ensure noise impacts are addressed and adequate management measures implemented through CEMPs and OEMPs	1	CEMPs and OEMP provided to AEO
		Implement the development assessment process to ensure noise impacts are adequately considered prior to development approval	1	CEMPs and OEMP provided to AEO

10.4 EXTERNAL INFLUENCES ON GROUND BASED NOISE

Ground-based noise management at Perth Airport is influenced by the following external factors:

- legislation, policy and guidelines;
- adjacent land uses; and
- stakeholder expectations and future trends.

(A) LEGISLATION, POLICY AND GUIDELINES

Commonwealth

The *Regulations* – Part 4, Division 3 provides for the general duty to prevent offensive noise. Where prevention is not reasonable or practical, the duty to minimise the generation of offensive noise applies. The *Regulations* also provide *Schedule 4 Excessive Noise – Guidelines*. The guidelines establish a set of indicators to determine if noise is excessive and provides guidance for consideration of sensitive and commercial receptors. The standards and procedures for measuring noise are also documented.

State

State Planning Policy No. 5.1. This policy applies to land in the vicinity of Perth Airport, which is, or may in the future, be affected by aircraft noise. The policy provides direction for land use planning to ensure protection against unreasonable encroachment by incompatible development, to provide for the airport's growth and operation.

(B) ADJACENT LAND USE IMPACTS

Land uses surrounding the Perth Airport Estate include residential, rural, industrial, recreation and major arterial roads.

Westralia Airports Corporation recognises existing land uses directly adjacent to Perth Airport may include noise sensitive receptors. The impact of noise to those receptors within the immediate vicinity of Perth Airport is a key consideration for ground-based noise management.

(C) STAKEHOLDER EXPECTATIONS AND FUTURE TRENDS

The expectation from key stakeholders that organisations will manage risks associated with their operations, including ground-based noise impacts, is anticipated to continue throughout the period of this AES.

10.5 INTERNAL INFLUENCES ON GROUND BASED NOISE

Principle internal influences relating to ground-based noise impacts include:

- the existing environment;
- corporate direction; and
- airport development activities and operational noise.

(A) THE EXISTING ENVIRONMENT

Sources of ground-based noise at Perth Airport include:

GROUND-BASED AVIATION NOISE*	GROUND-BASED NON-AVIATION NOISE
Aircraft ground running	Road traffic
Maintenance on engines including ground testing	Construction or demolition activities
Assembling of passengers or goods in connection with the dis/embarkation of aircraft	Tenant activities including plant operations and freight operations
Aircraft refuelling	Operation of fixed audible alarms of warning systems
Operation of an auxiliary power unit of an aircraft	

*Noise generated whilst in-flight, landing, taking off or taxiing is excluded, as described above.

Noise exposure may be exacerbated in the short-term by development works and could result in ongoing increased operational noise due to an increase in capacity and tenant operations. Ultimately the noise levels expected at Perth Airport are expressed in the 350,000 movements ANEF; these noise contours are also included in the State Government Planning Policy No. 5.1.

(B) CORPORATE DIRECTION

Westralia Airports Corporation corporate objectives, include being a responsible and caring corporate citizen. Noise is recognised as a key issue for the local community and the effective management of noise is critical to meeting this objective.

10.6 CURRENT MANAGEMENT

A number of mechanisms are in place to reduce noise impacts from a range of sources:

AIRCRAFT ENGINE GROUND RUNNING MANAGEMENT PLAN

Noise arising from engine ground running is managed through the *Aircraft Engine Ground Running Management Plan*. Constraints on conducting engine ground running above idle are implemented by WAC including time of day, power setting, and location.

Aircraft operators must seek approval from WAC if a proposed engine run cannot be conducted in accordance with the defined constraints.

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMPS)

CEMP's address noise pollution caused by construction activities and are a key control for noise exposure during development at Perth Airport. As previously described CEMP's are subject to assessment by WAC.

OPERATIONAL ENVIRONMENTAL MANAGEMENT PLANS (OEMPS)

Operational activities of tenants which pose a risk of emitting offensive noise are required to incorporate noise minimisation strategies in OEMPs. Where considered appropriate detailed noise modelling is undertaken by tenants to assess the potential noise impacts.

OEMPs are subject to assessment by WAC and are regularly reviewed by operators to maintain applicability.

MONITORING AND REPORTING OF GROUND-BASED NOISE

Monitoring of ground-based noise is not conducted routinely by WAC however monitoring may be conducted in association with commitments made through OEMPs, CEMPs and MDPs.

Westralia Airports Corporation receives a written report of all engine ground runs weekly. All aircraft operators are required to notify WAC prior to conducting an engine ground run above idle power. Any instance where a dispensation against the *Aircraft Engine Ground Running Management Plan* has been obtained must also be approved by WAC.

11. CONSOLIDATED ACTIONS TABLE

TABLE 3: CONSOLIDATED ACTIONS TABLE

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
STAKEHOLDER ENGAGEMENT				
Transparent and inclusive engagement with airport stakeholders and the wider community on current and emerging environmental issues towards the long-term sustainability of the airport's environmental values	Lack of awareness within the community resulting in uncertainties and misinformation	**Existing** Engage with key stakeholders, to discuss opportunities for achieving long-term sustainable outcomes	1	Summary of outcomes in AER
		Use electronic media as an efficient means of information dissemination within the organisation, for stakeholders and the wider community	1	Detail provided in AER
		Support environmental and cultural projects and/or groups	1	Specific projects detailed annually in AER Outcomes from previous years projects including key learnings detailed in AER
		Establish project specific consultative processes where WAC considers significant community interest is likely	1	Annually detail forums established in AER
		Investigate opportunities for environmental initiatives involving stakeholders such as tenants, school groups, community groups and airport staff	1	Detail proposed for following year in AER. Annually assess success of programs and provide summary in AER
		Implement environmental education and awareness initiatives at Perth Airport	1	Detail proposed for following year in AER. Annually assess success of programs and provide summary in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
		New Document and report on methods to achieve clear communication to tenants regarding WAC's expectations of cultural awareness activities	2	Develop in conjunction with key stakeholders Report outcome to AEO and provide summary of progress in AER
		Undertake voluntary reporting/ auditing to recognised benchmarks in consultation with the Commonwealth Government	2	Provide details of reporting standard to AEO. Report in AER
Promoting continuous improvement of the organisation's stakeholder engagement processes	Participation and value in stakeholder engagement processes is reduced	**New** Establish a stakeholder feedback and review process to facilitate continuous improvement of consultative processes	2	Develop in conjunction with Stakeholder forums Detail process to AEO and summaries in AER
CULTURAL HERITAGE				
Acknowledge and respect the role of Aboriginal people as Traditional Owners of the land	Work collaboratively with the Aboriginal community in land management and planning	**Existing** Fly the Aboriginal Flag at Perth Airport to acknowledge the Traditional Owners	1	Permanently flown at Terminal 1
		Celebrate Aboriginal cultural events eg NAIDOC week	1	Details reported in AER
		New Consult with the Traditional Owners to enhance recognition of Aboriginal heritage values at Perth Airport	2	Minimum 3 meetings per year with local Elders
Manage Aboriginal heritage in a culturally sensitive manner through consultation with the Aboriginal community	Integration of Aboriginal land management practices Involvement of the Aboriginal community in land management activities Disturbance to sites of Indigenous significance	**Existing** Implement the development assessment process, ensuring heritage impacts are considered, including the potential for new sites to be identified, and management measures are adequate prior to granting development approval	1	CEMPs and OEMP provided to AEO

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
		New Implement the principles of *Celebrating Aboriginal Culture at the Perth Airport*	2	Report activities in AER Regular meeting with local Aboriginal elders
		Consult with the Traditional Owners in the management of the natural ecology at Perth Airport, particularly in and around Munday Swamp	2	Details provided in AER
		Encourage further involvement of relevant Aboriginal Elders during planning processes for the airport	2	Details provided in AER
		Incorporate Aboriginal heritage considerations into CEMP guidelines	2	Details provided in AER
Raise awareness of Aboriginal heritage to stakeholders and the wider community through systems, activities and processes	Provide opportunities for enhancing cultural awareness	Implement procedures to acknowledge the Traditional Owners for events held at Perth Airport	1	Details provided in AER
		New Annually, produce and implement a schedule of events to: • assist in developing annual actions to increase awareness of Aboriginal heritage at Perth Airport; • develop employment opportunities for Aboriginal people; and • review and provide feedback on success of prior events.	2	Details of events, including outcomes provided in AER
		Integrate permanent recognition for the Traditional Owners such as plaques, artworks and terminal themes	3	Details provided in AER
		Conduct cultural awareness training for WAC staff and contractors	2	Details of cultural awareness training provided in AER
Investigate and implement employment, training and sponsorship opportunities for Aboriginal people at Perth Airport	Cross-cultural knowledge sharing through integration. Training and development opportunities for members of the local Aboriginal community	**New** Collaborate with Commonwealth and State agencies in establishing programs to assist in higher education and employment opportunities for Aboriginal people	2	Details provided in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
LAND USE PLANNING				
Ensuring land use planning is undertaken in a manner that maintains the long-term viability of the airport estate as a key infrastructure asset to Western Australia whilst recognising its key biodiversity values	Viability of environmentally significant areas are compromised	**Existing** Undertake developments in accordance with the MP to ensure that environmentally significant areas are conserved and protected	1	Assessed as part of A(BC) R's
		New Develop and implement the Conservation Completion Plan to complement the Airport's Ultimate Development as indicated in the MP	3	Report progress as part of AER
Ensuring environmental and cultural values are fully integrated into land use planning and development approval processes	Loss of significant environmental and cultural values	**Existing** Ensure all projects are evaluated for potential environmental impacts through the internal EMS and project approval process	1	Assessed as part of A(BC) R's Summary of developments included in AER
		Require and monitor CEMPs for construction identified as moderate to high environmental risk	1	Monthly reporting to AEO Summary in AER
		Require and monitor OEMPs from tenants with moderate to high environmental risk	1	Status of compliance reported in AER
		Continue to monitor and report to the Commonwealth Government on compliance with MDP conditions	1	Monthly reporting to AEO Undertake audits and report outcomes in AES
		New Provide improved documentation and processes in relation to the above processes	2	Monthly report to the AEO Provide summary in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
CLIMATE CHANGE AND RESOURCE USE				
Provide leadership in the area of sustainability	Leverage from high profile position to provide awareness and education to stakeholders and the wider community	**New** Annually review the Sustainability Strategy to ensure AES commitments are reflected and implement Sustainability Strategy actions. Make the Sustainability Strategy available to the public	2	Details of progress included in AER Implementation of Sustainability Strategy
		Assist and encourage tenants and business partners to adopt the sustainable practices within their businesses, through education and the provision of relevant information held by WAC.	3	Details of progress included in AER
Assess and mitigate the risks of both direct and indirect impacts of climate change	Adverse impacts on ecological and environmental values resulting from climate change	**New** Undertake vulnerability assessment of key environmental assets to climate variation and evaluate contingency measures	2	Details of progress included in AER
		Ensure the impact of climate change and resource requirements are evaluated to: • assess the impacts on environmental and heritage values; • assess the impacts on existing critical infrastructure; and • assess impacts of all new critical infrastructure.	2	Details of progress included in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Sustainable use of resources	Depletion of resources Diversion of waste from landfill	**Existing** Undertake waste recycling program	1	Details of progress included in AER
		New Carbon reduction targets will be set, published and publicly reported	2	Update provided to Board of Directors quarterly. Monthly reporting to AEO
		Conduct energy audits and collaborate with tenants to undertake energy audits of their facilities	2	Details of progress included in AER
		Develop a Resource Use Reduction Strategy targeting energy, water and waste	3	Details of progress included in AER
SOIL AND WATER				
Maintain and protect the quality of soil and water within the airport estate	Contamination of soils, waterways and wetland systems from upstream or on-airport activities Eutrophication of wetlands	**Existing** Undertake water quality and standing level water quality monitoring programs	1	Details provided in AER Quarterly summary provided to AEO
		Review the monitoring programs to ensure adequacy and effectiveness	1	Provide details of any changes to AEO
		New Finalise and implement the IWCMP	2	Report against WEMP targets in the AER
		Formalise the Fill Material Policy to ensure imported fill is consistent with the *Regulations*	2	Detail provided in AER on finalisation of policy
		Collaborate with State and Local Government on catchment management particularly in respect to nutrient concentrations entering Munday Swamp	3	Protection measures outline in AER
		Pursue formal agreement with Department of Infrastructure for the protection of groundwater resources, based on reasonable and practicable measures	2	Detailed provided in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Identify degraded sites and facilitate their remediation so that risks to human health and the environment are minimised	Migration of contaminant plume impacting on environmentally important receptors and/or beneficial land use Contaminant sources not clearly characterised leading to further pollution	**Existing** Maintain and update the contaminated sites register including appropriate remedial action for contaminated sites	1	Report on progress of existing or newly identified sites in AER Monthly reporting to AEO on active remediation programs
		Collaborate with tenants on management actions for identified contaminated sites	1	Report on progress of existing or newly identified sites in AER
Strive to minimise the potential for adverse impact to groundwater and ecological water flows arising from WAC and tenant activities	Poor awareness of pollution control requirements leading to soil and/or water pollution Disturbance of ASS causing adverse impacts to ecosystems Contamination events not fully characterised prior to tenant vacating site	**Existing** Ensure potential for erosion and land degradation are incorporated into CEMPs and OEMPs, where applicable	1	CEMP's and OEMP's provided to AEO
		Increase tenant understanding of the local environs and management techniques	1	Quarterly MTEF
		New Formalise the protocol for ASS management at Perth Airport	2	Monthly reporting to AEO Report ASS management in AER
		Formalise protocols for entry and exit audits	2	Report key audit outcomes to AEO
		Update the assessment of Ecological Water Requirements (EWR) and investigate appropriate management actions to maintain the EWR	4	Report in AER
CONSERVATION				
Maintain and enhance the biodiversity and conservation values of the airport estate in a manner consistent with an operational airport	Uncontrolled development and operations on the estate causing degradation and/ or loss of rare or threatened flora and fauna species Loss of biodiversity	**Existing** Annually produce, implement and review the CPMP	1	Report progress against targets in AER and to stakeholder forums
		Investigate opportunities for re-introduction of the Western Swamp Tortoise	1	Provide updates in AER

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Apply adaptive management to respond appropriately to the impacts of climate change	Adverse changes in temperature, rainfall, hydrology causing irreversible damage to environmental values	**New** Undertake vulnerability assessment of key environmental assets to climate variation – refer Chapter 6	2	Report key outcomes and recommendations in AER
		Develop management plans for environmentally threatening processes	3	Provide details to AEO and report against recommendations in AER
Manage the Conservation Precincts to maintain their essential ecological functions	Irreversible loss of ecological function	**Existing** Continue to explore new methods of increasing knowledge of conservation management by: • active engagement of stakeholders regarding conservation issues; and • utilise the latest research within the conservation and scientific community.	1	Report in AER Provide updates to stakeholder forums
		Implement rehabilitation in accordance with the CPMP	1	Provide details of rehabilitation in AER
		Address environmental disturbance factors and develop new initiatives	1	Provide details of impacts and initiatives in AER
		New Determine ecological health indicators to inform actions within the CPMP	2	Provide details of ecological health indicators in AER
		Promote and facilitate relevant collaborative research initiatives	2	Details provided in AER and to stakeholder forums
		Annually review the Urban Bushland Plan for Fire Management	2	Details provided to AEO annually following review
		Collaborate with Commonwealth and State agencies in the development and implementation of recovery plans for the protection of rare flora	3	Details of recovery plans and progress in AER and to stakeholder forums

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
Increase connectivity within the airport Conservation Precincts and recognise the importance to regional linkages	Isolation of native flora and fauna communities resulting in vulnerability to local impacts and population decline	**New** Increase regional landscape connectivity by working in collaboration with State and Local Governments through the Conservation Completion Plan	4	Provide details for maintaining regional connectivity in AER
Promote awareness of biodiversity and cultural values at Perth Airport	Opportunity to utilise environmental values as a living classroom	**Existing** Annually develop and implement a schedule of events to promote the conservation values of the estate to the community	1	Provide details of events and outcomes in AER
Ensure all conservation initiatives are undertaken with a vision towards self-sustaining conservation reserves within the estate	Recognising dynamic nature of ecosystems and importance of maintaining intra and inter estate linkages	**New** Develop a Conservation Completion Plan that defines the desired conservation completion criteria for the estate	3	Details for progress provided in AER
AIR QUALITY				
Assessing the risk of impacts to local air quality arising from activities at Perth Airport through evaluation of available monitoring data and development applications	Adverse impacts to local air quality	**Existing** Publicly report air quality data, impacts and management	1	Comparative air quality data provided in AER
		Report to the NPI where threshold levels are triggered	1	Annually report emissions to NPI
		Monitor state and tenant air quality data and modify management measures as required	1	Report in AER
		Undertake investigations to determine if airport activities are a major contributing factor where airshed quality standards exceed the ambient air quality standards	1	Provide quarterly review of regional air quality to AEO
		Maintain systems to review the potential for air quality impacts arising from development activities	1	Monthly report on audit outcomes to AEO

OBJECTIVE	OPPORTUNITIES/ IMPACT	INITIATIVES	SCHEDULE	COMPLIANCE REPORTING
		New Develop an inventory of emission sources and establish measures to mitigate emissions where practicable	3	Detail provided annually in ESR
		Validate comparison to Caversham monitoring station data through consolidation of tenant air quality monitoring data	3	Tenant data consolidated in ESR Validation against Caversham data reported in AER
GROUND BASED NOISE				
Work with stakeholder groups to minimise impacts from aircraft and ground-based noise that occurs through the operations of Perth Airport	Adverse impacts on stakeholders and the community	**Existing** Collaborate with key stakeholders in the management of aircraft and ground-based noise	1	Details provided in AER Discussed in ANMCC
		Implement the Aircraft Engine Ground Running (EGR) Management Plan with revision of aircraft ground running procedures	1	Details provided in AER Discussed in ANMCC
		Record and report on ground running events	1	Noise complaints arising through EGR described in AER Discussed in ANMCC
		Monitor ground-based noise complaints and initiate investigations where warranted	1	Details provided in AER
Ensure the impact of noise is considered during the assessment process for developments during construction and operational phases.	Ground-based noise from development and operational activities on the estate causing adverse impacts on the local community	Existing Ensure noise impacts are addressed and adequate management measures implemented through CEMPs and OEMPs	1	CEMPs and OEMP provided to AEO
		Implement the development assessment process to ensure noise impacts are adequately considered prior to development approval	1	CEMPs and OEMP provided to AEO

APPENDICES A–D

PERTH
AIRPORT

APPENDIX A REFERENCE MATERIALS

1. INTRODUCTION

1.1 PERTH AIRPORT SETTING

Perth Airport is located 10km east of Perth's Central Business District on the Swan Coastal Plain at the base of the Darling Escarpment, a low escarpment running north south to the east of Perth (Figure 10).

Typical of the south west region of Western Australia, Perth Airport experiences a Mediterranean climate. The average maximum temperature is 24.4ºC and the average minimum 12.1ºC, with the hottest month being February and the coolest August. The annual average rainfall recorded for Perth Airport is 784.6mm (Bureau of Meteorology 2008).

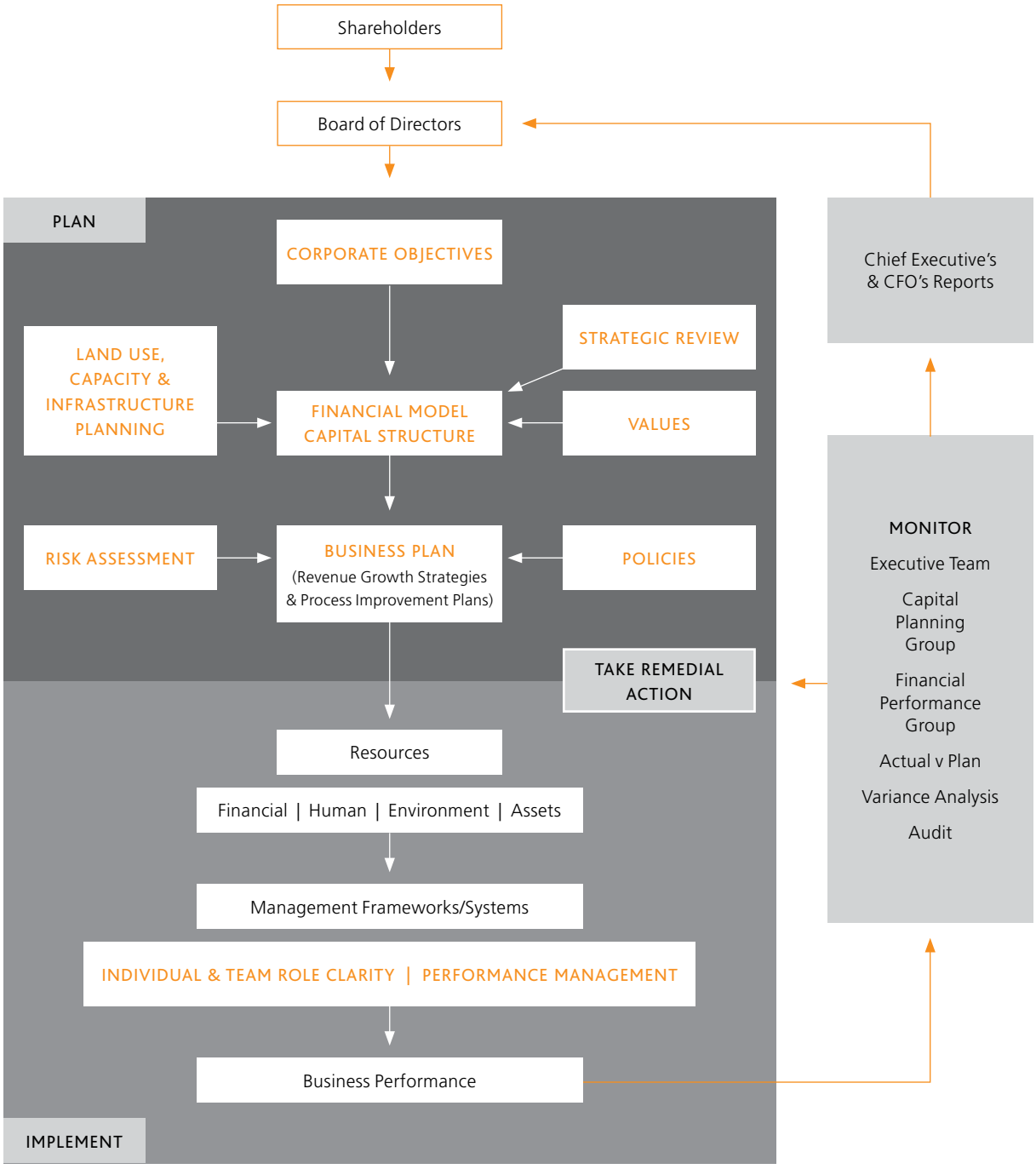
The Perth Airport estate covers 2,105ha, situated within the Local Government boundaries of the City of Belmont, City of Swan and Shire of Kalamunda. It is bounded by Tonkin Highway, Abernethy Road and the Great Eastern Highway Bypass. The adjacent land use comprises a mix of industrial, commercial and residential areas.

FIGURE 10: PERTH AIRPORT LOCATION

2. ENVIRONMENTAL MANAGEMENT FRAMEWORK (EMF)

2.1 WAC'S BUSINESS MANAGEMENT FRAMEWORK

FIGURE 11: BUSINESS MANAGEMENT FRAMEWORK



2.2 INFORMATION ABOUT THE ACTS AND REGULATIONS

AIRPORTS ACT 1996 AND AIRPORTS (ENVIRONMENTAL PROTECTION) REGULATIONS 1997

The *Airports Act 1996* (the *Act*) and *Airports (Environmental Protection) Regulations 1997* (the *Regulations*) are administered by the Department of Infrastructure Transport Regional Development and Local Government. Part 5 of the *Act* provides a mechanism for development assessment and approval on the Perth Airport Estate, whilst Part 6 - 'Environmental Management' establishes the environmental requirements for the Airport. It provides a system of *regulations* to promote awareness of environmental issues and ensures that appropriate processes are established to manage pollution, noise and other environmental impacts generated by operations at the airport. The *Regulations* are the primary regulatory tool for day-to-day operations on Federally leased airports. The *Regulations* describe a set of obligations which must be complied with by all parties undertaking action (*operators of undertakings*) on airport land. Broadly these obligations are a duty to:

- avoid pollution;
- maintain pollution control equipment;
- preserve habitat;
- give notice of cultural discovery; and
- prevent offensive noise.

The *Regulations* further detail monitoring and reporting requirements and promote improved environmental practices at Perth Airport and other Federally leased airports. A key component of the legislation is the development of an Environment Strategy to guide environmental management.

The role and duties of an AEO are also defined within the *Regulations*. While the AEO is expected to facilitate a cooperative approach to environmental management, the AEO is ultimately required to *act* as the regulator.

ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (the *EPBC Act*) forms part of the Australian Government's environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places — defined in the *EPBC Act* as matters of national environmental significance.

NATIONAL ENVIRONMENT PROTECTION COUNCIL ACT 1994

The *National Environment Protection Council Act 1994* provides the statutory framework for establishment and operation of the National Environment Protection Council (NEPC). The primary functions of the NEPC are to:

- produce National Environment Protection Measures (NEPMs); and
- assess and report on their implementation and effectiveness in participating jurisdictions.

National Environment Protection Measures produced to date include:

- ambient Air Quality;
- ambient Air Quality – Particles Standard $PM_{2.5}$;
- air Toxics;
- diesel Emissions;
- movement of Controlled Waste;
- NPI;
- assessment of Site Contamination; and
- used Packaging Materials.

National Environment Protection Measures, such as Ambient Air Quality, NPI and Site Contamination have direct relevance to Perth Airport.

2.3 RISK MANAGEMENT

Risk identification, assessment and development of preferred Risk Treatment Plans constitute an important element of the planning phase of the Company's management processes. Risk Registers have been developed for core business units, including Corporate Risk which includes Environment and Sustainability. Risk Registers document the risk issue, provide a consequence and likelihood definition, describe the nature of existing controls and provide a current risk rating. Risk Treatment Plans are developed where the level of assessed risk is deemed 'High' or 'Extreme' and further treatment is considered necessary.

Implementation of risk management processes is reviewed periodically by the Executive Team and the Board's Risk Management Committee, commensurate with the level of risk. These reviews often prompt changes to Risk Registers or Risk Treatment Plans, as does the investigation of incidents, which can also highlight risks that have not previously been identified or addressed appropriately.

2.4 ENVIRONMENTAL MONITORING PROGRAM

TABLE 4: ENVIRONMENTAL MONITORING PROGRAM

ITEM	TIMING	REPORTING
Water quality (surface and groundwater)	Quarterly	Quarterly water report submitted to AEO. Summary included in Annual Environment Report Detailed information provided in Environmental Site Register
Water level gauging (groundwater)	Monthly	Quarterly water report submitted to AEO. Summary included in Annual Environment Report Detailed information provided in Environmental Site Register
Feral animal monitoring	Seasonal	Summary included in Annual Environment Report
Fauna monitoring (vertebrates, macroinvertebrates and invertebrates	3-5 years	Summary included in Annual Environment Report. Included in environmental site register
Flora monitoring	As required	Reports included in Environmental Site Register
Rehabilitation (revegetation and weed progress)	Annually (for select rehabilitation sites)	Summary included in Annual Environment Report. Reports submitted to AEO
Air quality	Quarterly (sourced from tenant and DEC monitoring data)	Data included in Annual Environment Report
NPI	Data collated monthly	Data reported to NPI database and included in Annual Environment Report
Soil monitoring	As required – site specific	Included in Environmental Site Register
Resource use (energy, water, waste)	Data collated monthly	Summary of resource use included in Annual Environment Report

2.5 KEY RESPONSIBILITIES

ROLE:	RESPONSIBILITIES:
Board and Risk Management Committees	• overall environmental performance of WAC; • review and approval of EMF; and • periodic review of performance against AES action plans.
Chief Executive Officer	• implementation of the Environment Strategy; • legislative compliance; • risk management; and • implementation of the EMF.
Executive Teams	• implementing environmental management in their area of responsibility; • reviewing Risk Registers and Risk Treatment Plans; • continuing to monitor the effectiveness of the EMF and associated systems; and • recommend improvements when required.
General Manager Corporate Risk	• developing and periodically updating the Company's Environmental Policy Statement; and • providing risk assessment facilitation services to other business units.
Environment Manager	• establishing and maintaining the EMF; • reporting to key stakeholders on environmental performance and activities of the organisation; • reporting to Chief Executive Officer and Board on effectiveness of the EMF and EMS; and • overseeing implementation of commitments from the Environment Strategy.
Employees and contractors	Environmental responsibilities, authorities and accountabilities of employees and contractors are defined, documented and communicated through a variety of mechanisms. These include: • job descriptions; • procedures; • work instructions; • project plans; and • risk treatment plans. These documents help to facilitate effective environmental management. All operators and staff at the airport have a responsibility to undertake activities in an environmentally responsible manner.

3. CULTURAL HERITAGE

3.1 SIGNIFICANT ABORIGINAL SITES

(A) MUNDAY SWAMP

Munday Swamp is a culturally and spiritually important site to the Nyoongar people. It has been recognised on the (superseded) RNE as containing sites of significance for conservation and cultural heritage values (RNE sites 100871 and 102483). The ecological diversity of the area, including zamia palms, fish, frogs and gilgies, traditionally provided food resources for Aboriginal people. The swamp was a fishing ground for turtles and used for hunting brush kangaroos, ducks and goannas. Other traditional activities at Munday Swamp included collecting *mili mili* (paperbark) for paintings, reeds for brooms and timber for clothes props (Anderson 1983). Water and food availability, and the ability to carry out culturally significant activities allowed Aboriginal people to use the site as a camping location for extended periods.

The site is now also considered to be an important archaeological site. Various Aboriginal people including those who visited as children, indicated the ground was covered with stone artefacts. In WAC's recent *Audit of Aboriginal Heritage at Perth Airport* (see below) four main sites of artefact scatters were cited as previously recorded in the Munday Swamp area (Artefaxion 2008). An investigation of the four sites indicated that artefacts remain evident at one site while three showed no evidence of artefacts; however these sites remain important as artefacts may still be present beneath the surface (Artefaxion 2008).

(B) ALLAWAH GROVE

The Perth Airport estate remained important to Aboriginal people in contemporary times. Allawah Grove, was occupied by Aboriginal people during various periods from the 1930's. In 1958, a group of local Aboriginal people (incorporated as the Coolbaroo League), approached the Native Welfare Department to utilise post-war migrant housing there for the many homeless Aboriginal people in the Guildford area. From 1959 until 1968, Allawah Grove became a temporary settlement for Aboriginal people. Allawah Grove was the only non-institutionalised Aboriginal settlement in Western Australia (Delmege 2005) and was possibly the largest settlement in Perth in the late 1950s (Wilson 1958). Its closure was aimed at encouraging Aboriginal people to live in the community; however, families were dispersed and isolated in outer suburbs around Perth, (Delmege 2005). Allawah Grove remains significant to the identity of the Aboriginal families who resided or visited relations there.

3.2 AUDIT OF ABORIGINAL SITES

The DIA Register of Aboriginal Sites identifies 27 archaeological and four ethnographic sites on the Perth Airport Estate. The survey, undertaken in 2008, discovered little artefactual evidence still remaining at the majority of the archaeological sites identified by the review (Artefaxion 2008). Distinct artefacts were found at two sites, 'Site # 4001 Airport Boronia/Phillips' and 'Site # 4008 Newburn: Bingham Street'. Site # 3888 'Munday Swamp: Poison Gully' was identified as having a high likelihood of deposited artefacts (Artefaxion 2008).

The audit found that many of the sites previously recorded have been partially or completely destroyed by surface collections during prior archaeological surveys, previous land uses, developments, or erosion. Four ethnographic sites are identified on the DIA Register of Aboriginal Sites as occurring on WAC land. These are Munday Swamp (Site # 3719), Allawah Grove (Site # 3771), Redcliffe Wetlands (Site # 16694) and Poison Gully Creek (Site # 25023).

4. LAND USE PLANNING

4.1 KEY DEVELOPMENT PLANS – ROAD NETWORK

- upgraded Great Eastern Highway/Fauntleroy Avenue intersection;
- the creation of a grade separated Tonkin Highway/Boud Avenue intersection as an access point to the airport estate;
- extension of Leach Highway as an access point to the airport estate and an upgraded Leach Highway/Tonkin Highway intersection;
- upgraded Tonkin Highway/Kewdale Road/Horrie Miller Drive intersection;
- construction of internal roads within the airport estate as part of the non-aeronautical development of each precinct and the terminal consolidation program; and
- planning for the provision of public transport to the future consolidated terminal complex.

4.2 SURROUNDING LAND USE

- Urban (Residential) – the major areas of residential development in the vicinity of Perth Airport include the established suburbs of Redcliffe, Belmont and Cloverdale in the City of Belmont, South Guildford and Hazelmere in the City of Swan and High Wycombe and Forrestfield in the Shire of Kalamunda.
- Rural – rural residential zoned land exists to the north and east of Perth Airport in the suburbs of Hazelmere, High Wycombe and Forrestfield.
- Industrial – general industrial land exists to the north, east and south of Perth Airport located in Kewdale, South Guildford, High Wycombe and Forrestfield. The Forrestfield Access Park Industrial Area in High Wycombe/Forrestfield and the Kewdale Freight Terminal comprise the major rail-based freight distribution centres for the Perth region.
- Parks and Recreation – there are important reserves for parks and recreation within close proximity of Perth Airport including Pioneer, Dawson and Hartfield Parks in Forrestfield. The Swan River foreshore is also close to the north western boundary of the Perth Airport estate.
- Major Roads – Perth Airport is well located with regard to the regional and district road network, comprising Tonkin, Great Eastern, Leach and Roe Highways, which provide access to Perth and the Kwinana and Graham Farmer Freeways.

4.3 SPECIFIC LAND USE CATEGORIES WITHIN PERTH AIRPORT PRECINCTS:

(a) Commercial – these uses include offices (both high profile and general commercial), high technology and research and development facilities attracted to the airport due to the transport focus, and convenience retail. Supporting retail for on-site employees, not intended to affect regional retail centre catchments, and bulky goods/showroom ("big box") developments are envisaged within this land use. Development within this land use is intended to achieve buildings with facades that are attractive and inviting and which harmoniously relate to each other. Buildings are intended to be designed to a high architectural standard with the pedestrian in mind

(b) Aviation commercial – these are uses directly associated with aviation-related commercial activities which require airfield access, such as airline operations, air cargo distribution, perishable exports, aircraft maintenance, and storage facilities

(c) General warehouse – these uses are characterised by light industrial facilities and showrooms which may have sizeable floor spaces for the purpose of the storage, display and sale of products. The uses can include aviation-related commercial activities such as rental cars and parking

(d) Short stay accommodation – short stay accommodation including hotels, motels, hostels, childcare and aged care

(e) Recreational – these uses include entertainment and recreation activities such as golf courses, parks, themed entertainment facilities, driver training and education, and eco-tourism

(f) Industrial – these uses are activities which may involve manufacturing, distribution and assembly

(g) Community Services – these are considered areas of public amenity and are for a special use targeted towards the benefit of the general community. Examples include technological and educational uses such as a TAFE campus and health facilities.

(h) Conservation Areas – WAC has designated and reserved approximately 310ha within the AES 2009 for the preservation of natural and cultural values. This area is divided into two Conservation Precincts. Rationale for the selection of conservation areas at Perth Airport involved consideration of the environmental attributes, including vegetation type and quality, habitat and wetlands, and consultation and recommendations of key stakeholders such as State and Commonwealth agencies. The Conservation Precincts are illustrated in Figure 9 and described in Chapter 8.

Compatible land uses within the Conservation Precincts are commensurate with the conservation intent and may include walk trails and environmental and heritage education centres. The above uses are not considered to constitute a risk of significant environmental impact.

5. SOIL AND WATER

5.1 SOIL TYPES

Perth Airport is situated at the base of the Darling Escarpment, a low escarpment running north south on the Swan Coastal Plain to the east of Perth. The airport estate is underlain by superficial formations of Quaternary age comprising units summarised in Table 5 below (Geological Survey of Western Australia, 1986).

The superficial formations are 20m to 30m thick beneath the estate, thinning to the north west. The Bassendean Sand outcrops across the majority of the site, with the exception of the south east corner, and forms dune sequences. The S_{10} sand unit of the Bassendean Sand outcrops more extensively in the central and northern portion of the estate with the S_8 unit predominantly present over the south western corner of the site.

The M_{gs1} pebbly silt unit of the Guildford Formation, outcrops in the south east corner of the estate and extensively along the eastern boundary around Munday Swamp, with isolated patches north of the main runway. The Guildford Formation forms a continuous subcrop beneath the remainder of the airport except marginally along the south western boundary, at Tonkin Highway. It is interpreted as representing a former alluvial plain sedimentary environment (Geological Survey of Western Australia, 1986).

TABLE 5: SOIL TYPES AT PERTH AIRPORT

UNIT	SUBUNIT	DESCRIPTION
Swamp Deposits	Cps	PEATY CLAY, dark grey and black, with variable sand content of lacustrine origin.
Bassendean Sand (Bsnd) (Qpb)	S_8 sand	SAND, very light grey at surface, yellow at depth, fine to medium grained, subrounded quartz, moderately well sorted, of aeolian origin.
	S_{10} sand	As above (thin sand over Guildford Formation).
Guildford Formation (Gfm)	M_{gs1}	PEBBLY SILT, strong brown silt with common, fine to occasionally coarse grained, subrounded laterite quartz, heavily weathered granite pebble, some fine to medium grained quartz sand, of aeolian origin.
	M_{s2}	SANDY SILT, strong brown to mid grey, mottled blocky, disseminated fine sand, hard when dry, variable clay content, of alluvial origin.
	S_{11}	SAND, light grey, medium grained, subangular to rounded quartz and feldspar, moderately sorted, of alluvial origin.

5.2 DETAILS ABOUT THE GROUNDWATER TABLE AT PERTH AIRPORT

The groundwater table is intersected at many locations by the SMD and NMD. During winter, water in these drains is likely to recharge the groundwater whilst in summer groundwater discharge occurs as base flow into the drains. Site investigations and monitoring have shown that flow occurs from the east to the north west, toward the Swan River.

The groundwater table within the superficial aquifer occurs at shallow depths of 4m or less beneath the ground surface. In many areas groundwater is expressed as surface ponding, particularly during winter. Seasonal fluctuations of the groundwater table are approximately 1m, with water table elevations at their highest in August to October and lowest in March to May.

Recharge from the Bassendean Sand to the Guildford Formation occurs across the estate; however, some up flow from the Guildford Formation to the Bassendean Sand has been observed along the central portion of the eastern boundary of the estate due to higher groundwater levels within the underlying unit.

Underlying the superficial aquifers is the Kardinya Shale, a thick sequence of siltstones and sandstones of low permeability, the shale forms a confining layer to the underlying Leederville formation. Investigations indicate that the Kardinya Shale occurs extensively beneath the estate.

The Mirrabooka aquifer is of limited extent beneath the estate, occurring at thicknesses of up to 40m beneath the southern portion of the estate. The aquifer comprises sandstones, thin siltstone and shale forming a semi-confined aquifer beneath the superficial formations. Limited abstraction from this aquifer is undertaken for construction water.

5.3 MORE DETAILS ABOUT THE WETLANDS

Munday Swamp is located in Precinct 7 in the north east sector of the airport. Munday Swamp is the largest wetland system on the estate, covering an area of approximately 20ha. It comprises a series of wetland features including a lake, sumplands and palusplains (Davis et al 1993). The lake is a 2ha freshwater expression situated in an interdunal swale fed by groundwater and surface water. The sumplands to the west of the lake are well vegetated and in good condition. The palusplains are to the east and south of the lake and have been substantially modified and no longer support functioning wetland ecosystems.

Munday Swamp is fed by Poison Gully, High Wycombe Branch Drain and Macao Road Branch Drain which all convey water from light industrial and residential areas in the Shire of Kalamunda. The Northern Main Drain (Poison Gully Branch Drain) does not flow into Munday Swamp.

Runway Swamp is located in the south western section of the airport. It has been deepened as a result of peat extraction and now contains open water during the winter months.

6. CONSERVATION

6.1 REGISTER OF THE NATIONAL ESTATE

Munday Swamp Bushland (Site # 100871) The bushland within this area comprises remnants of both the Guildford and Southern River Vegetation complexes (DEWHA 2008b).

Munday Swamp and Surrounding Bushland (Site # 102483). The bushland contains remnants of both the Guildford and Southern River Vegetation Complexes and Munday Swamp, a regionally important wetland. (DEWHA 2008a)

The Forrestfield bushland (Site # 100875) The bushland within this area contains large remnants of the Southern River Vegetation complex and two species of flora listed as threatened under the *EPBC Act 1999*, these are *Conospermum undulatum* and *Macarthuria keigheryi* (WAC 2004).

6.2 THE EXISTING ENVIRONMENT

(A) VEGETATION AND FLORA

Much of the airport estate has been historically cleared for farming and agricultural purposes and the remaining areas of bushland vary in quality, from completely degraded through to pristine (based on condition rating scale from Bush Forever 2000a) (Figure 12), (Mattiske, 2008).

The Perth Airport site occurs within the Swan Coastal Plain Subregion that corresponds with the Drummond Botanical Subdistrict (Beard 1990). The vegetation associations remaining, incorporate the Southern River Complex, Guildford Complex and the Bassendean – Central and South Complex (Mattiske 2008).

Within the Bassendean – Central and South Vegetation Complex, the vegetation is predominantly *Eucalyptus marginata* (Jarrah), *Allocasuarina fraseriana* (Sheoak) and Banksia spp. woodland to low woodland and Melaleuca spp. and sedgelands occur on moister soils (Heddle et al. 1980). Approximately 28% of the original extent of the Bassendean – Central and South Vegetation Complex still remains on the Swan Coastal Plain (Dept of Agriculture and Food, 2008).

Within the Southern River Vegetation Complex, the vegetation is predominantly *Corymbia calophylla* (Marri), *Eucalyptus marginata* (Jarrah) and Banksia spp. open woodland with fringing woodlands of *Eucalyptus rudis* (Flooded Gum) and *Melaleuca rhaphiophylla* (Swamp Paperbark) occur along creek beds (Heddle et al. 1980). Approximately 20% of the original extent of the Southern River Vegetation Complex still remains on the Swan Coastal Plain (Dept of Agriculture and Food, 2008).

Vegetation within the Guildford Vegetation Complex is a mixture of open forest to tall open forest of *Corymbia calophylla* (Marri) – *Eucalyptus wandoo* (Wandoo) - *Eucalyptus marginata* (Jarrah) and includes *Eucalyptus rudis* (Flooded Gum) and *Melaleuca rhaphiophylla* (Swamp Paperbark) along streams (Heddle et al. 1980). Approximately 6% of the original extent of the Guildford Vegetation Complex still remains on the Swan Coastal Plain (Dept of Agriculture and Food, 2008a).

Westralia Airports Corporation has undertaken numerous botanical surveys at Perth Airport covering various areas of remnant vegetation (Tingay et al 1994, Trudgen 1995, Bennett 2001, 2002, Lawn 2002 and Mattiske 2002, 2005, 2006, 2007 and 2008). A comprehensive knowledge base of the vegetation species and complexes located on the site has been gained through this work. In total the surveys have identified 444 native and 210 exotic species on the airport estate. These surveys are undertaken at regular frequencies to monitor vegetation health.

Twelve vegetation communities have been identified; these are described below in Figure 13 (Mattiske, 2008).

Two species of flora listed under the *Environment Protection and Biodiversity Conservation Act 1999* are found on Perth Airport. These are *Macarthuria keigheryi,* Keighery's macarthuria (endangered) and *Conospermum undulatum,* Wavy-leaved smoke bush (vulnerable).

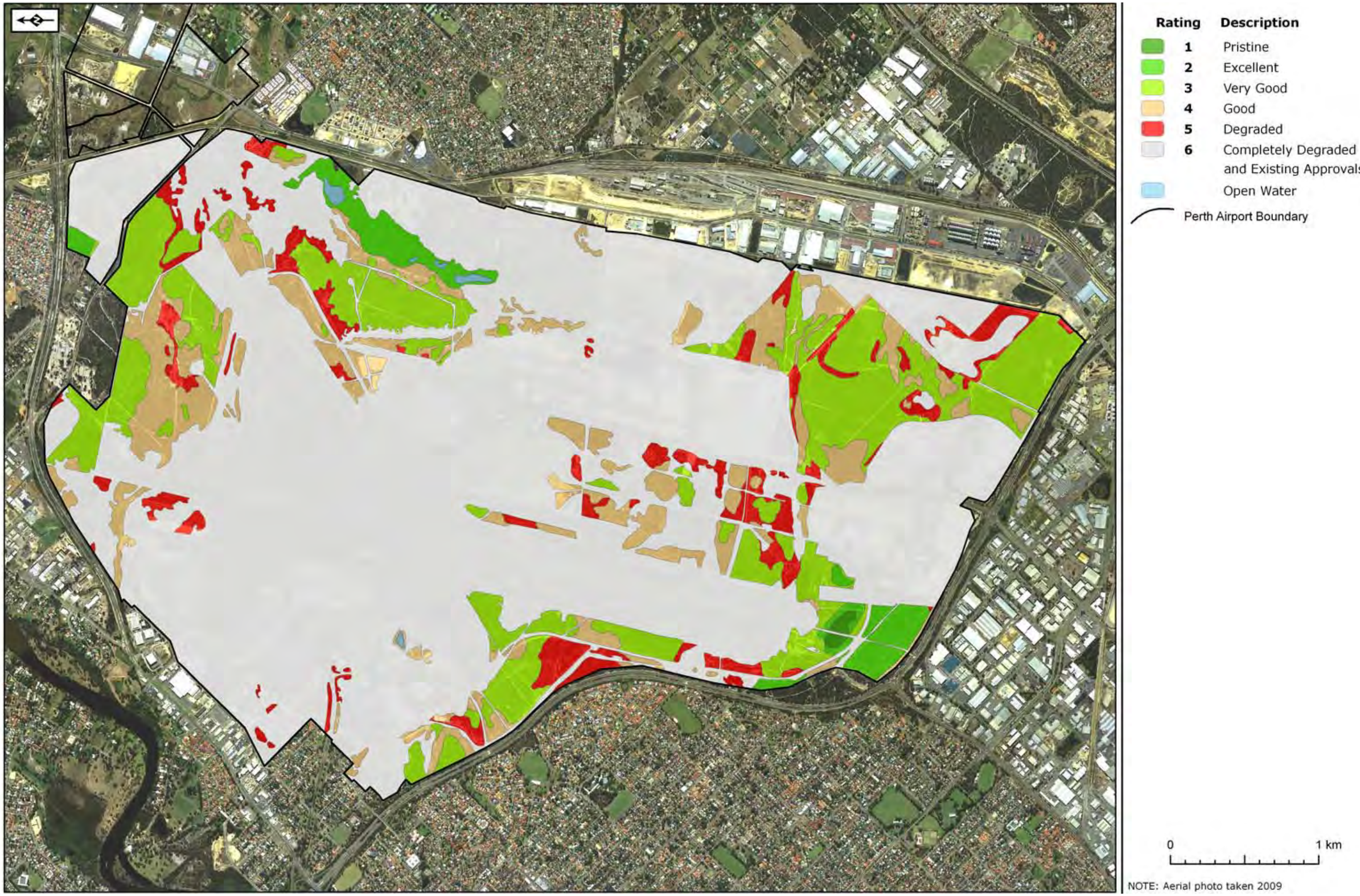


FIGURE 12: VEGETATION CONDITION

FIGURE 13: VEGETATION CODE

Vegetation Code	-	Description
H1	-	Low Forest to Low Woodland of Banksia attenuata, Banksia menziesii and Eucalyptus todtiana over Hibbertia hypericoides , Alexgeorgea nitens and Mesomelaena pseudostygia.
I1	-	Low Forest to Low Woodland of Eucalyptus marginata, Banksia attenuata and Banksia menziesii with occasional Allocasuarina fraseriana over Acacia pulchella, Patersonia occidentalis and Dasypogon bromeliifolius.
J1	-	Woodland of Corymbia calophylla, Melaleuca preissiana and Banksia spp. over Xanthorrhoea preissii, Hypocalymma angustifolium and Jacksonia sternbergiana over low herbs and shrubs.
J2	-	Woodland of Corymbia calophylla over Kingia australis and Xanthorrhoea preissii over low shrubs and herbs.
K1	-	Woodland of Melaleuca rhaphiophylla Eucalyptus rudis Melaleuca preissiana with occasional Banksia ilicifolia over Lyginia barbata, Xanthorrhoea preissii, Hypocalymma angustifolium, Dasypogon bromeliifolius, Pericalymma ellipticum var. ellipticum and Astartea scoparia .
K2	-	Closed Heath of Hakea varia, Hypocalymma angustifolium and Melaleuca lateritia over Meeboldina cana and Hypolaena exsulca with occasional Melaleuca rhaphiophylla.
K3	-	Closed Heath of Pericalymma ellipticum with occasional emergent Melaleuca preissiana over Hakea varia, Hypolaena exsulca, Lyginia barbata, Melaleuca seriata, Phlebocarya ciliata, Stirlingia latifolia and Verticordia densiflora var. densiflora.
K4	-	Low Open Woodland to Low Closed Forest of Melaleuca rhaphiophylla Melaleuca preissiana with occasional Banksia littoralis and Corymbia calophylla over Astartea scoparia, Euchilopsis linearis, Hypocalymma angustifolium, Pericalymma ellipticum and Villarsia albiflora.
K5	-	Heath of Melaleuca teretifolia over Lepidosperma effusum .
K6	-	Tall Shrubland of Viminaria juncea over low herbs and invasive Eragrostis curvula
OW	-	Open water with aquatic herbs and emergent sedges and rushes.
PA	-	Pasture Areas, disturbed areas, cleared areas and drains
PL	-	Plantation
Pines	-	Pines

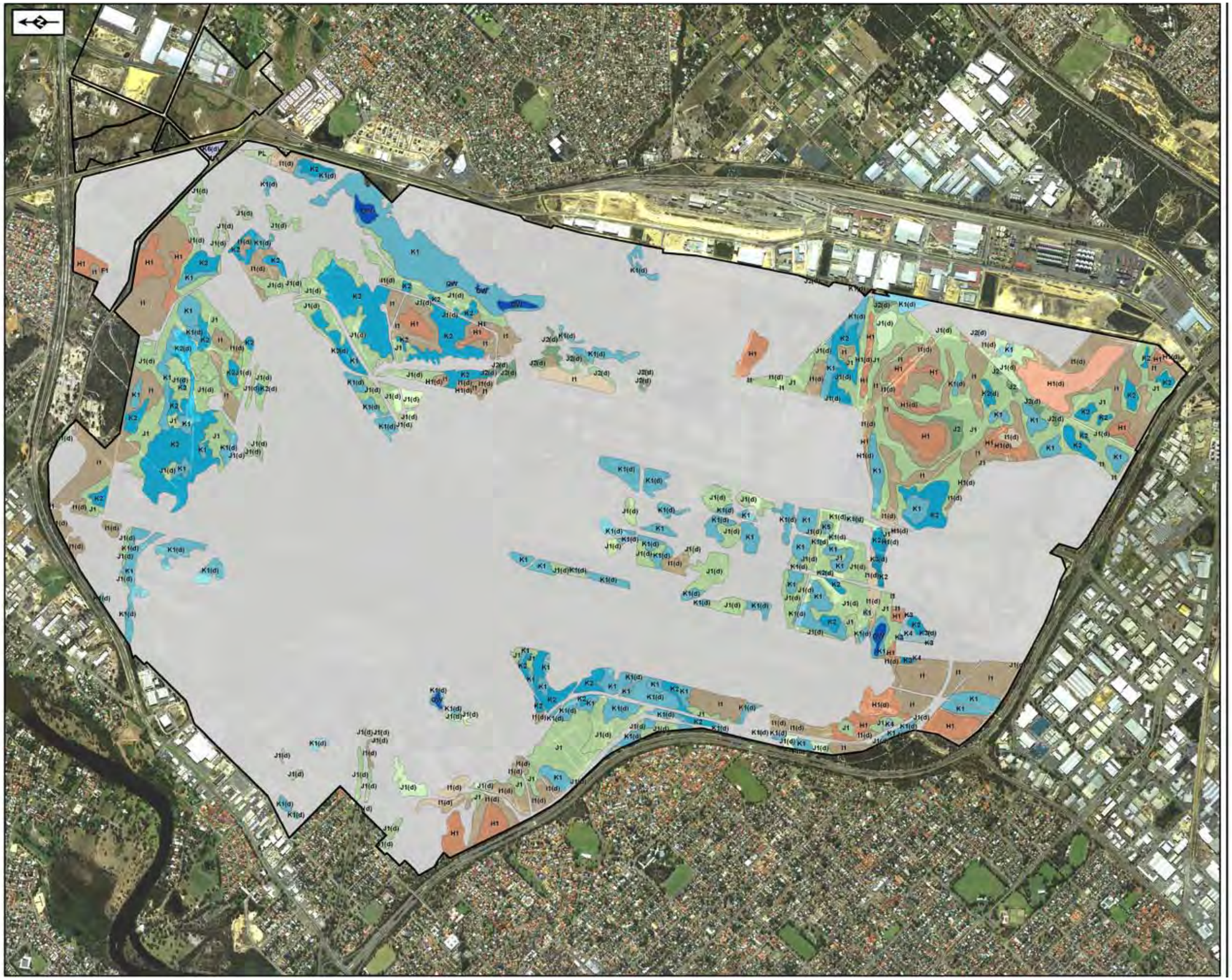


FIGURE 13A: VEGETATION TYPE

Westralia Airports Corporation notes the nine Priority Species pursuant to the *Wildlife Conservation Act 1950* recorded on the Perth Airport Estate. A list of these species is included in Table 6. Priority categories refer to the following conservation codes (Department of Environment and Conservation 2008):

- Priority One - poorly known Taxa. Taxa which are known from one or a few (generally <5) populations which are under threat;
- Priority Two - poorly Known Taxa. Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat;
- Priority Three - poorly Known Taxa. Taxa which are known from several populations, and the taxa are not believed to be under immediate threat; and
- Priority Four - rare Taxa. Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors.

Westralia Airports Corporation is committed to the protection of all *EPBC Act* listed flora and will work with Commonwealth and State agencies to ensure recovery plans are developed and implemented for these species.

(B) INTRODUCED FLORA (WEEDS)

A total of 210 (exotic) introduced weed species in 128 taxa have been identified on the airport site through numerous surveys (Mattiske, 2007).

The distribution of thirteen introduced bushland species within the Perth Airport estate were mapped during 2002, 2005 and 2007. These species are included in Table 7.

(C) DIEBACK *(PHYTOPHTHORA CINNAMOMI)*

Phytopthora Dieback (*Phytopthora cinnamomi*) is recognised as being one of the key threatening processes to Australian Biodiversity (DEWHA, 2001). The south west of Western Australia has been extensively invaded by this soil borne water mould that survives on root and stem tissue of living plants primarily belonging to Proteaceae, Epacridaceae, Papilionaceae/Fabaceae and Myrtaceae families. The three key dispersal mechanisms of the disease are:

- the normal lifecycle and biology of the pathogen;
- spread by animals; and
- spread by humans (Strategen, 2007).

TABLE 6: FLORA SPECIES LISTED UNDER THE EPBC ACT 1999 AND THE WILDLIFE CONSERVATION ACT 1950

SPECIES	EPBC ACT 1999	WILDLIFE CONSERVATION ACT 1950	DEC PRIORITY SPECIES
Conospermum undulatum	Vulnerable	Declared Rare	Rare
Macarthuria keigheryi	Endangered	Declared Rare	Rare
Byblis gigantea	NL	NL	Priority 2
Goodenia filiformis	NL	NL	Priority 3
Haemodorum loratum	NL	NL	Priority 3
Myriophyllum echinatum	NL	NL	Priority 3
Platysace ramosissima	NL	NL	Priority 3
Schoenus benthamii	NL	NL	Priority 3
Stylidium longitubum	NL	NL	Priority 3
Verticordia lindleyi subsp. lindleyi	NL	NL	Priority 4
Villarsia submerse	NL	NL	Priority 4

TABLE 7: WEED SPECIES OF NATIONAL STATE AND/OR ENVIRONMENTAL SIGNIFICANCE

SPECIES	COMMON NAME	STATUS
Asparagus asparagoides	Bridal Creeper	WONS, P1
Rubus ulmifolius	Blackberry	WONS, P1
Zantedeschia aethiopica	Arum Lily	P1, P4
Echium plantagineum	Paterson's Curse	P1
Moraea flaccida	One Leaf Cape Tulip	P1
Gomphocarpus fruticosus	Cotton Bush	
Ehrharta calycina	Perennial Veldt Grass	
Eragrostis curvula	African lovegrass	
Watsonia meriana, *Watsonia meriana* var. *bulbillifera*, *Watsonia meriana* var. *meriana*	Watsonia	
Gladiolus caryophyllaceus	Gladiolus	
Typha orientalis	Typha	
Lupinus cosentinii	Western Australian Blue Lupin	
Leptospermum laevigatum	Coast Teatree	

Declared Plant Species in Western Australia (Department of Agriculture and Food, Western Australia 2008b):

- P1 – Prohibits movement
- P4 – Aims to prevent infestation spreading beyond existing boundaries of infestation
- WONS – Weeds of National Significance

These species were selected due to their National, State and, or environmental importance.

(D) FAUNA

Perth Airport has comprehensive records of the fauna located on site from numerous surveys dating back to 1989. Surveys have recorded 134 species of vertebrate fauna. These included 3 fish species, 8 frog species, 1 tortoise species, 21 reptile species, 95 bird species and 7 mammal species.

In the latest vertebrate fauna survey conducted, the most abundant species recorded were the Quenda, Moaning Frog, House Mouse and Squelching Frog (Bamford and Bancroft 2008). Of interest in the most recent survey were the additions of the Rainbow Lorikeet, a declared pest under the *Agriculture and Related Resources Protection Act* 1976 (WA) and the Forest Red-Tailed Black-Cockatoo listed as threatened-vulnerable under the *Wildlife Conservation Act, 1950* (WA).

Macro-invertebrate surveys were completed at four wetlands on the estate during 2008 and recorded 128 spp of aquatic invertebrates. Previous surveys noted several unusual invertebrates including the *Porthia acutitelson* which is reported as rare in Perth wetlands, this species however was not recorded in the 2008 survey.

Other rare species recorded included the *Notonecta handlirschi* (a notonectid) and *Sigara mullaka* (waterboatman) (WAC 2004) *Sigara mullaka* has been displaced by *Micronecta robusta* in many other wetlands yet the 2008 survey revealed these two species continue to co-exist at Munday Swamp (Strehlow and O'Conner 2009).

Seven species of mammal have been recorded on the airport estate. Of these, five are noted as introduced with the indigenous species being the Southern Brown Bandicoot (*Isoodon obesulus)* and the Echidna (*Tachyglossus aculeatus*).

Of the 95 bird species recorded on the estate the Carnaby's Black-Cockatoo (*Calyptorhynchus latorostris*) is protected under the *EPBC Act 1999* as an endangered species. A number of bird species, including Carnaby's Black-Cockatoo, that inhabit the airport estate can pose a safety hazard for aircraft due to aspects such as the species size, behaviour and associated movement.

The Great Egret (*Egretta alba)* and the Rainbow Bee-eater (*Merops ornatus)* are given protection under the *EPBC Act* 1999 as they are the subject of migratory bird agreements. The Great Egret is listed under both the Japan-Australia Migratory Bird Agreement (JAMBA) and China-Australia Migratory Bird Agreement (CAMBA) and the Rainbow Bee Eater is listed under the CAMBA Agreement. Perth Airport provides potential habitat to these two species of migratory bird.

Westralia Airports Corporation recognises the importance of habitat for a number of bird species identified as having reduced distribution on the Swan Coastal Plain. Where presence of the bird species on or adjacent to the estate does not pose a risk to aircraft safety, habitat retention is supported within the Conservation Precincts and through the maintenance of ecological linkages.

(E) INTRODUCED FAUNA

Introduced fauna compete with native fauna for resources including food and habitat and a number of introduced species also predate on native fauna. Introduced fauna identified at Perth Airport are:

- Mosquito Fish;
- Laughing Turtle Dove;
- Spotted Turtle Dove;
- Laughing Kookaburra;
- Rainbow Lorikeet;
- House Mouse;
- European Rat;
- European Rabbit;
- European Fox; and
- Cat.

Current management practices for Introduced Fauna are detailed in the section entitled 'Current Management and Future Initiatives'.

(F) SUITABILITY OF HABITAT FOR INTRODUCTION OF THREATENED SPECIES

The Western Swamp Tortoise (*Pseudemydura umbrina*) is listed as critically endangered under the *EPBC Act 1999*. An individual tortoise was reportedly sighted within the vicinity of the airport estate in the 1970's. Intensive surveys have not found further evidence of the existence of this species on the airport estate. Habitat for this species has been significantly reduced on the Swan Coastal Plain.

As a consequence, selected wetlands on the airport estate have been identified as providing potential habitat for this species. A Federal Recovery Plan is currently in production however, a Species Recovery Plan has been developed by the State and is being implemented by the WA DEC.

Further consultation and site investigation is required to determine the long term viability of a proposed introduction program within Perth Airport wetlands and WAC is committed to working with Commonwealth and State agencies to fully investigate the introduction of this species into airport wetlands.

(G) WETLANDS

As mentioned in Chapter 8, Perth Airport contains a number of wetlands including damplands, sumplands, palusplains and lakes (Strategen 2007). Key wetlands on the estate include:

- Munday Swamp;
- Northern Wetlands;
- Constructed Wetland; and
- Runway Wetland.

6.3 CURRENT MANAGEMENT

(A) REHABILITATION

Westralia Airports Corporation has been actively rehabilitating areas within Conservation Precincts to enhance existing conservation values. A Rehabilitation Planning Report was developed in 2005 which separated the Conservation Precincts into individual management areas and prioritised these for rehabilitation and ongoing management based on vegetation condition and type, previous land use, weed infestation levels and soil type and landform. Rehabilitation works within the Conservation Precincts have involved the closure and rehabilitation of several disused access tracks and the construction of a wetland in an abandoned sand quarry within Conservation Precinct 5.

Rehabilitation at the airport site has been relatively successful with some areas regenerating faster than others. Consideration of the practices previously implemented will influence future rehabilitation efforts within the Conservation Precincts. Monitoring of rehabilitated areas is fundamental to the success of the program and is undertaken within specific sites as part of an adaptive management approach.

Westralia Airports Corporation has committed to developing a Conservation Completion Plan for the Conservation Precincts of the estate that will define the desired outcome for these areas.

(B) WEED MANAGEMENT

Weed control is aimed at reducing the threat of weeds within rehabilitation areas and for the preparation of sites for future restoration. The control of weeds across the Conservation Precincts is undertaken according to an annual weed control schedule. Selective herbicides are carefully chosen for each target species, the site attributes and control requirements. Weed control also targets specific declared weeds across the remainder of the estate that may have adverse impacts on bushland areas within Conservation Precincts.

Weed management is an integral component of rehabilitation and restoration activities in the Conservation Precincts. Site weed control is accompanied by infill planting of native vegetation to maximise effectiveness of control efforts and reduce the amount of weed returning to the site. Species specific weed control is undertaken seasonally in order to maintain control and ultimately achieve eradication of the species from the site.

(C) FERAL ANIMAL MANAGEMENT

Feral animal management on the airport estate focuses on rabbit, fox and cat control. Various 1080 baits are utilised on the estate for the control of foxes and rabbits, whilst cats are generally targeted using traps. The management of these species is undertaken strategically to incorporate both habitat and foraging preferences of each species.

Feral animal species are monitored throughout the year and controlled at specific times to coincide with breeding seasons of each of the species. Monitoring ensures appropriate control of populations is achieved and whether additional control is required for target species, ensuring the most effective management of feral animal species on the estate.

(D) FAUNA MANAGEMENT

Information gained from fauna and flora monitoring is incorporated into the ongoing management of fauna on the Perth Airport Estate. This information is used to inform management decisions and undertake specific fauna management actions as required.

(E) PHYTOPTHORA DIEBACK MANAGEMENT

The occurrence of *Phytopthora* dieback across the estate has been mapped during an on-ground assessment undertaken during 2005 (Glevan Consulting, 2005).

Within the Conservation Precincts it was determined that 62ha in Precinct 5 and 213ha in Precinct 7 contained *Phytopthora* dieback. It should be noted these areas are likely to have increased since this survey due to the natural rate of spread of the disease and human activities including illegal access to the estate.

During 2007/2008 a phosphite treatment trial was initiated on the estate. Phosphite treatment will be ongoing throughout the Conservation Precincts to boost the natural defences of susceptible plants against the disease. Re-application of the treatment is required every two to three years for effectiveness against the disease. Standard *Phytopthora* dieback signage is to be installed in strategic locations in Conservation Precincts across the estate.

(F) FIRE MANAGEMENT

Current fire management practices on the airport estate are aimed at fire prevention, response and control in the event of a wildfire. Fire breaks and strategic slashing of grassed areas are undertaken annually across the estate in accordance with the *Bush Fires Act, 1950*. An Urban Bushland Plan has been developed in conjunction with FESA and ARFF which details responsibilities for fire management activities on the estate.

A diverse fire regime is identified as one approach to promote biodiversity in a landscape because of its influence on species assemblages and composition, vegetation structures, habitat characteristics and processes including nutrient cycling (Burrows 2008). WAC will be developing practical solutions during this AES period to incorporate appropriate fuel load management and fire management practices for both local and regional risk mitigation and biodiversity outcomes for the estate.

(G) ILLEGAL ACCESS

The airport site contains large tracts of open unused land. Access to these areas of land is very difficult to control and despite regular security patrols and fence maintenance unauthorised use by trail bike, four wheel drive and quad bike users takes place. Vehicle and rubbish dumping also occurs within the estate, requiring regular site cleanup. Occasionally fires have been deliberately lit by vandals. The Conservation Precincts are fenced; however fences are routinely cut for access by unauthorised users.

In an effort to restrict illegal access on the estate and the associated impacts the following measures have been undertaken:

- security patrols;
- fence installation and replacement;
- track closure;
- installation of barriers; and
- removal of dumped rubbish.

Illegal access remains problematic with no one measure tried so far proving effective in limiting access. Illegal access management is an issue that will require further investigation and implementation of both new and ongoing initiatives by WAC to provide for more effective outcomes.

6.4 AERONAUTICAL REQUIREMENTS – BIRDS AND ANIMAL HAZARD MANAGEMENT

The species identified as posing the highest risk include:

- Nankeen Kestrel;
- Galah;
- Little and Eastern Long-billed Corella;
- Australian Pelican;
- Australian White Ibis; and
- Pacific Black Duck.

Carnaby's Black-Cockatoo is a seasonal inhabitant of the airport site, foraging in remnant bushland areas. As noted earlier, aircraft safety is paramount and WAC does not actively encourage this species to inhabit airport land. Retention of habitat in close proximity to runways and taxiways causes increased risk of bird flight lines intersecting aircraft flight paths. Habitat for Carnaby's Black-Cockatoo is present within Conservation Precincts on the estate.

The most effective method used to control bird numbers and bird flight lines on and across the airport estate is through habitat management including habitat modification and the careful selection of species used in landscaping and revegetation.

APPENDIX B
STATUS OF 2004 ENVIRONMENT STRATEGY COMMITMENTS

NO.	AUDITABLE COMMITMENT	IMPLEMENTATION DATE	STATUS
CURRENT REPORTING PERIOD – 2007/08			
1	Conduct internal audits of EMS on yearly basis	Annually – March	**Partially Implemented** Internal review undertaken of existing EMS documentation
2	Conduct external audits of the EMS on a two yearly basis	Starting 2005/2006	**Partially Implemented** EMS documentation currently under review to ensure consistency with current operations
3	Investigate need for Key Performance Indicators (KPIs) in critical areas of environmental operation at Perth Airport	June 2005	**Implemented** KPIs/Key Result Areas have been built into performance plans for all environmental staff
4	Review and maintain an environmental risk register	June 2005	**Implemented** Environmental risk register maintained and updated annually
5	Update risk register on yearly basis or when significant change occurs	Annually	**Implemented** Environmental risk register maintained and updated annually
6	Update legislation manual on an as needs basis, at a minimum six monthly	Six monthly	**Implemented** Westralia Airports Corporation maintains understanding of legislative changes through internet alerts and industry groups. Corporate legal register maintained
7	Maintain a legislation monitoring system	Ongoing	**Implemented** Corporate legislation monitoring system maintained including environmental legislation
8	Consult with Indigenous Groups, Universities and the Museum to decide how to sensitively interpret Aboriginal history and culture	Project basis	**Implemented** Heritage Management Plan drafted in consultation with DIA and members of the aboriginal community
9	Undertake all reporting as required under the Act and *Regulations* in a timely manner, in addition report on the status of these commitments as part of the Annual Environment Report	Annually – June	**Implemented**
10	Develop and maintain environmental commitments register, including those made in this document, individual projects and tenants	September 2004	**Implemented** Commitments Register maintained
11	Develop auditing (EMP/energy/waste) schedule for tenants and WAC operations	December 2004	**Implemented** Schedule developed in conjunction with AEO. Copy of audit reports provided to AEO

NO.	AUDITABLE COMMITMENT	IMPLEMENTATION DATE	STATUS
12	Conduct audits according to schedule	Annually	**Implemented** Audits undertaken in accordance with Strategy commitments
13	Recommence discussions with Australian Greenhouse Office	June 2005	**Changed reporting requirements** Reporting under the NGER Act to commence in 0809 period
14	Develop co-operative agreement with AGO	June 2006	**Changed reporting requirements** Reporting under the NGER Act to commence in 0809 period
15	Incorporate environmental responsibilities in job descriptions for staff employed after January 2005	January 2005	**Implemented** Standardised environmental and sustainability responsibilities are included in job descriptions for all new staff
16	Investigate incorporating an environmental component to salary bonus package commencing 2006/2007	May 2006	**Implemented** Included as part of staff performance management review for key staff
17	Ensure all staff undergo environmental awareness training at least every two years	Starting 2005/2006	**Partially Implemented** Development of online health, safety and environment induction package
18	Develop an Environmental Consultation Group	December 2004	**Implemented** Meetings held quarterly
19	Conduct monthly discussions with AEO	Monthly	**Implemented** Meetings between WAC and the AEO held monthly
20	As part of AER, document measures used to address high environmental risk activities in reporting period	Annually	**Implemented** Measures documented in Environmental Site Register as submitted to DoITRDLG
21	Facilitate quarterly meetings and activities of the Noise Management Strategy Committee	Quarterly	**Implemented** Meetings held quarterly
22	Conduct review of [pollution] contingency plans every 2 years	Starting June 2006	**Implemented** Spill response training provided to Airport Operations Safety Officers
23	Based on risk register develop a yearly works program to address high environmental risk activities. Publish this program of proposed work as part of the Annual Environmental Report	Annually – June	**Partially Implemented** Introduction of new Risk Management Framework incorporating updated Risk Registers and Risk Treatment Plans

NO.	AUDITABLE COMMITMENT	IMPLEMENTATION DATE	STATUS
24	Review WAC internal approval process for development, construction and maintenance projects to ensure it adequately deals with environmental risks	June 2005	**Implemented** Review conducted and recommendations implemented. Documentation reviewed as part of Project Delivery System implementation. Further review being undertaken
25	Update environmental site register, as required – all sections at least yearly	Starting June 2004	**Implemented** Updated version of Environmental Site Register provided to DITRDLG
26	Document management plans for conservation precincts, including implementation schedule	Annually	**Implemented** CPMP developed and implemented
27	As part of a year-by-year program outlined in the Annual Report, implement items in conservation precinct management plan including items such as: • vertebrate pest management; and • weed management.	Annually	**Implemented** CPMP developed and implemented
28	On a project basis conduct further studies of Priority 1 and 2 vegetation as part of development approvals process	2007	**Implemented** Vegetation surveys completed across entire estate
29	Review standard WAC contract documentation to ensure it adequately deals with environmental risks in areas such as: • Indigenous sites; • Traffic management; and • Pollution (eg. noise, dust).	June 2006	**Implemented** Standard contracts reviewed. Requirements for CEMPs applied as required within structured checklist. Environmental Screening Checklist reviewed and updated during
30	Determine ecological water requirement for wetlands within environmentally significant areas	June 2006	**Implemented** Ecological water requirement determined as part of draft management plans for Conservation Precincts 5 & 7
31	Review procedures for stopping illegal access to environmentally significant areas	August 2004	**Implemented** Ongoing monitoring and maintenance undertaken of Conservation Precincts
32	Revise surface and groundwater monitoring program	October 2004	**Implemented** Program reviewed and considered adequate. An additional requirement to formally report to the AEO on a quarterly basis has been implemented

NO.	AUDITABLE COMMITMENT	IMPLEMENTATION DATE	STATUS
33	Monitor surface and groundwater as required under revised program	Monthly/ Quarterly	**Implemented** Revised surface and groundwater monitoring program implemented
34	Ensure ex-tenants continue monitoring and undertake remediation activities as agreed. Relinquishment of responsibility is based on demonstrated success of remediation	Annually	**Implemented** Westralia Airports Corporation has continued to work with ex-tenants to ensure ongoing monitoring. Where required WAC will work with AEO to assist with compliance
35	On a quarterly basis use State Government monitoring data to determine air quality in Perth Airport airshed, determine appropriate contingency program should monitoring program show levels in excess of guidelines	Quarterly	**Implemented** Ongoing monitoring of State Department of Environment and Conservation air quality data for local air-shed
36	Apply for local water quality standard and develop program to implement	December 2005	**Timeframe Extended** Insufficient data to determine appropriate levels to be applied to WAC sites. Commitment suspended
37	Undertake monitoring required to report to the State Government under the NPI program, report outcomes yearly	Annually	**Implemented** NPI reporting undertaken annually
38	Revise monitoring regime, update to allow the health of environmentally significant areas on Perth Airport to be determined	June 2006	**Implemented** High quality monitoring undertaken of both physical and biological parameters
39	Commence ecological health monitoring according to regime	2005/2006	**Implemented** High quality monitoring undertaken of both physical and biological parameters
40	Establish system within EMS for addressing audit recommendations	March 2005	**Implemented** Audit database established
41	Suggest revision of EMS based on audit	Annually – May	**Implemented** Recommendations of EMS Gap Analysis implemented
42	Review management commitments based on previous management performance June each year (update in Annual Report)	Annually – June	**Implemented** Management of environmental aspects reported annually

APPENDIX C
AES LEGISLATIVE REQUIREMENTS TABLE

TABLE 8: LEGISLATIVE REQUIREMENTS

AIRPORTS ACT 1996

REQUIREMENT	PRESENTED IN THE AES
Sec 116 (2a) The airport-lessee company's objectives for the environmental management of the airport.	• Objectives specified within each chapter. • Environment policy included in chapter 2.
Sec 116 (2b) The areas, if any, within the airport site which the airport-lessee company, in consultation with State and Commonwealth conservation bodies, identifies are environmentally significant.	• Refer to chapter 8.
Sec 116 (2c) The sources of environmental impact associated with airport operations.	• Refer to Existing Environment and/or Internal Influences sections of the relevant chapters.
Sec 116 (2d-e) The studies, reviews and monitoring to be carried out. Including the time frames for completion of those studies and reviews and for reporting on that monitoring.	• Refer to the Five Year Action Program of each chapter, and the Consolidated Actions Table in Chapter 11. • Refer to Chapter 2 - Environmental Management Framework for monitoring programs and reporting processes. • Refer to Appendix A - Environmental Monitoring Program.
Sec 116 (2f) The measures for preventing, controlling or reducing the environmental impact associated with airport operations including the timeframes for the specific measures.	• Refer to the Current Management and Five Year Action Program of relevant chapters. • Refer to Chapter 2 - Environmental Management Framework.
Sec 116 (2h) Details of the consultations undertaken in preparing the strategy (including the outcome of the consultations).	• Refer to Invitation for Submissions. • Refer to Chapter 3 - Stakeholder Engagement.
Sec 124, 131 (abridged) The ALC must publish a public notice advising the availability, place and timing for inspection or purchase of the Draft AES (ss124)/ Final AES (ss131).	• Refer to Invitation for Submissions. • Refer to Chapter 3 - Stakeholder Engagement.
Sec 130 Compliance with final environment strategy.	• Refer to Chapter 2 - Environmental Management Framework. • Refer to Chapter 3 - Stakeholder Engagement. • Refer to Five Year Action Program and Current Management sections of relevant chapters.

AIRPORT (ENVIRONMENTAL PROTECTION) REGULATIONS 1997

REQUIREMENT	PRESENTED IN THE AES
Reg 3.03 - Sites of Indigenous Significance A matter that must be specified in an environment strategy is any area, within the airport site to which the strategy applies, that the airport-lessee company for the airport has identified as being a site of Indigenous significance, following consultation with: (a) Any relevant Indigenous communities and organisations; and (b) Any relevant Commonwealth or State body.	• Refer to Chapter 4 - Cultural Heritage.
Reg 3.04(1) - Operations other than Airport Operations A matter that must be specified in an environment strategy is the airport-lessee company's strategy for environmental management of areas of the airport site that are, or could be, used for a purpose that is not connected, or directly connected, with airport operations.	• Refer to Chapter 2 - Environmental Management Framework.
Reg 3.05 - Environmental Management Training Matters that must be specified in an environment strategy are: (a) The training necessary for appropriate environment management by persons employed on the airport site by the airport-lessee company or by other major employers, or classes of persons so employed; and (b) Any formal training programs, of which the airport-lessee company is aware, that it considers would meet the training needs of a person mentioned in paragraph (a).	• Refer to Chapter 2 - Environmental Management Framework.
Reg 3.06 - Management of the airport site An airport-lessee company, in specifying in an environment strategy its objectives for the airport under paragraph 116 (2) (a) or (3) (a) of the Act, must address its policies and targets for: (a) continuous improvement in the environmental consequences of activities at the airport; (b) progressive reduction in extant pollution at the airport; (c) development and adoption of a comprehensive environmental management system for the airport that maintains consistency with relevant Australian and international standards; (d) identification, and conservation, by the airport-lessee company and other operators of undertakings at the airport, of objects and matters at the airport that have natural, indigenous or heritage value; (e) involvement of the local community and airport users in development of any future strategy; and (f) dissemination of the strategy to sub-lessees, licensees, other airport users and the local community.	• Refer to Chapter 2 - Environmental Management Framework. • Refer to Current Management section of the relevant chapters. • Refer to Five Year Action Program of the relevant chapters for proposed management actions. • Refer to 2.1 for the Environmental Policy. • Refer to Chapter 3 - Stakeholder Engagement. • Refer to Chapter 4 - Cultural Heritage. • Refer to Chapter 8 - Conservation. • Refer to Invitation for Submissions.

AIRPORT (ENVIRONMENTAL PROTECTION) REGULATIONS 1997

REQUIREMENT	PRESENTED IN THE AES
Reg 3.07 - Identification of Environmentally Significant Areas of Airport Site An airport-lessee company, in specifying in an environment strategy the areas within the airport site that, under paragraph 116 (2) (b) or (3) (b) of the Act, it identifies as environmentally significant, must address: (a) any relevant recommendation of the Australian Heritage Commission; (b) any relevant recommendation of the Department of the Environment, Sport and Territories regarding biota, habitat, heritage or kindred matters; and (c) any relevant recommendation of a body established in the State in which the airport is located, having responsibilities in relation to conservation of biota, habitat, heritage or kindred matters.	• Refer to Chapter 8 - Conservation. • Refer to Chapter 4 - Cultural Heritage.
Reg 3.08 - Identification of sources of environmental impact at airport An airport-lessee company, in specifying in an environment strategy the sources of environmental impact that, under paragraph 116 (2) (c) or (3) (c) of the Act, it associates with airport operations, or civil aviation operations at the airport, as the case requires, must address: (a) the quality of air at the airport site, and in so much of the regional airshed as is reasonably likely to be affected by airport activities; (b) water quality, including potentially affected groundwater, estuarine waters and marine waters; (c) soil quality, including that of land known to be already contaminated; (d) release, into the air, of substances that deplete stratospheric ozone; (e) generation, and handling, of hazardous waste and any other kind of waste; (f) usage of natural resources (whether renewable or non-renewable); (g) usage of energy the production of which generates emissions of gases known as 'greenhouse gases'; and (h) generation of noise.	• Refer to Chapter 9 - Air Quality. • Refer to Chapter 7 - Soil and Water. • Refer to Chapter 6 - Climate Change and Resource Use. • Refer to Chapter 8 - Conservation. • Refer to Chapter 4 - Cultural Heritage. • Refer to Chapter 10 - Ground-Based Noise.

AIRPORT (ENVIRONMENTAL PROTECTION) REGULATIONS 1997

REQUIREMENT	PRESENTED IN THE AES
Reg 3.09 - Proposed Studies, Reviews and Monitoring An airport-lessee company, in specifying in an environment strategy the studies, reviews and monitoring that, under paragraph 116 (2) (d) or (3) (d) of the Act, it plans to carry out in connection with airport operations, or civil aviation operations at the airport, as the case requires, must address: (a) the matters mentioned in regulations 3.03, 3.07 and 3.08; (b) the scope, identified by the airport-lessee company, for conservation of objects and matters at the airport that have natural, indigenous or heritage value; (c) the approaches, and measures, identified by the airport-lessee company as its preferred conservation approaches and measures; (d) the professional qualifications that must be held by a person engaged in carrying out the monitoring; (e) the proposed systems of testing, measuring and sampling to be carried out for possible, or suspected, pollution or excessive noise; and (f) the proposed frequency of routine reporting of monitoring results to the airport environment officer (if any) for the airport, or to the Secretary.	• Refer to the Chapter 8 - Conservation Five-year Action Program. • Refer to Chapter 4 - Cultural Heritage Five Year Action Program. • Refer to Appendix A - Environmental Monitoring Program. • Refer to Chapter 9 - Air Quality. • Refer to Chapter 7 - Soil and Water. • Refer to Chapter 10 - Ground-Based Noise.
Reg 3.10 - Proposed Measures for Preventing, Controlling or Reducing Environmental Impact An airport-lessee company, in specifying in an environment strategy the measures that, under paragraph 116 (2) (f) or (3) (f) of the Act, it plans to carry out for the purposes of preventing, controlling or reducing the environmental impact associated with airport operations, or civil aviation operations at the airport, as the case requires, must address: (a) the matters mentioned in regulations 3.06, 3.07 and 3.08; and (b) the means by which it proposes to achieve the cooperation of other operators of undertakings at the airport in carrying out those plans.	• Refer to the Current Management and Five Year Action Program of the relevant chapters. • Refer to Chapter 2 - Environmental Management Framework. • Refer to Chapter 3 - Stakeholder Engagement.
Reg 3.11 - Sub-lessees and Licensees to be Aware of Strategy Consistently with paragraph 131 (2) (c) or (d) (as appropriate) of the Act, the airport-lessee company for an airport must ensure that every person who is a sublessee or licensee of the airport-lessee company at the airport is aware of the company's final environment strategy and of any approved variation of the strategy.	• Refer Invitation for Submissions. • Refer to Chapter 3 - Stakeholder Engagement.

APPENDIX D GLOSSARY

Air Navigation (Aircraft Engine Emissions) Regulations: Made under the Air Navigation Act 1920, aircraft operators are responsible for aircraft emissions.

Airline: The operator of a regular public or freight transport air service.

Airport: An aerodrome at which the facilities have been sufficiently developed to be of importance to civil aviation.

Apron: A defined area of land at an aerodrome intended to accommodate aircraft for the purpose of loading and unloading passengers, mail or cargo, fuelling and parking.

Australian Noise Exposure Concept: A planning tool used to test the changes to noise exposure resulting from proposed changes to airport operations.

Australian Noise Exposure Forecast: The official land use planning document that predicts likely changes in noise exposure levels.

Australian Noise Exposure Index: The actual noise exposure for a specified time period, generally one year.

Carbon Pollution Reduction Scheme (CPRS): An initiative proposed by the Commonwealth Government to reduce Australia's carbon emissions. The CPRS involves the establishment of a national emissions trading scheme. The scheme is likely to come into effect in 2010 – 1212.

Conservation Completion Plan: A plan used to show the 20-50yr development of the conservation reserves on the Perth Airport. The plan is aspirational and will be regularly updated based on the ongoing management of the estate and external factors such as climate changes.

Construction Environmental Management Plan (CEMP): A document to be submitted by a proponent to Westralia Airports Corporation prior to the construction of both major and minor projects at Perth Airport.

Department of Environment and Conservation: Western Australia's State department with primary responsibilities for protection and conserving the State's environment. This includes managing the state's national parks, marine parks, conservation parks, state forests and timber reserves, nature reserves, marine nature reserves and marine management areas.

Department of Environment, Water, Heritage and the Arts: The Commontwealth department responsible for the administration of the EPBC Act.

Department of Infrastructure, Transport, Regional Development and Local Government: The Commonwealth department that administers domestic and international aviation legislation and policies and is responsible for developing and implementing the regulatory regime for federally leased airports.

Environmental Management Framework: A set of documented procedures that defines the environmental policy and organisational responsibility for planning, recording, auditing, and resolving non-conformances through a process of review leading to continual improvement of an organisation's environmental management.

Environmental Management Plan: A procedure that identifies potential impacts and methodologies necessary to prevent or mitigate them.

Environmental Management System: A system of implementation to support the Environmental Management Framework.

General Aviation: All civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire.

Groundwater Abstraction: The removal of water from aquifers for consumptive purposes, ground water at Perth Airport is abstracted from superficial aquifers for irrigation and construction use.

Habitat: The specific physical and biological environment on which a given species depends for its survival.

Integrated Catchment Management: A subset of environmental planning which approaches sustainable resource management from a catchment perspective, integrating the various aspects of catchment management.

Integrated Water Cycle Management: An approach or planning process which aims to manage water resources to maximise the environmental, social and economic benefits and uses all aspects of the resource optimally.

Major Development Plan: Required, under the *Airports Act 1996*, for major projects at airports.

Noise and Flight Path Monitoring System: A system established and installed at Australia's major airports and overseen by Airservices Australia which monitors actual noise exposure at specific sites located within known flight paths.

Noise Monitoring Terminals: Permanently installed equipment which measures actual noise exposure. Five monitoring terminals are located at Perth Airport.

Palusplain: A wetland subtype, featuring as a seasonally waterlogged flat.

The Perth Air Quality Management Plan: A State Government initiative which aims to reduce the emissions of those atmospheric pollutants that are causing occasional episodes of unacceptable air quality now and prevent the development of future air quality problems.

Register of the National Estate: A statutory register containing places of natural, historic and Indigenous cultural significance, established under the Australian Heritage Council Act 2003.

State Planning Policy 5.1, Land Use Planning in the Vicinity of Perth Airport 2004: The intent of the Policy is to protect Perth Airport from unreasonable encroachment by incompatible (noise sensitive) development, to provide for its ongoing development and operation; and, to minimise the impact of airport operations on existing and future communities with reference to aircraft noise.

Sumpland: A wetland sub-type, featuring as a seasonally inundated basin.

Westralia Airports Corporation Pty Ltd (WAC): The privately held company that holds a 50-year lease plus a 49-year option to manage and develop Perth Airport.

Wetland: Areas of seasonally, intermittently or permanently waterlogged soils or inundated land, whether natural or otherwise, fresh or saline, eg. waterlogged soils, ponds, billabongs, lakes, swamps, tidal flats, estuaries, rivers and their tributaries.

APPENDIX E REFERENCES

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