Darwin International Airport
ENVIRONMENT STRATEGY
Final

2009

Approved 22 April 2010

Darwin
International Airport

www.darwinairport.com.au

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ii Foreword

I am pleased to present Darwin International Airport's 2009 Final Environment Strategy.

Darwin International Airport Pty Ltd (DIA) has a 50 year lease plus 49 year option over the Darwin International Airport from the Commonwealth of Australia under the *Airports Act 1996*.

DIA is also a Joint User Airport under the *Airports Act* and a Joint User Deed with the Department of Defence governs the co-located operation of DIA and RAAF Base Darwin.

The Airport Environment Strategy (AES) outlines how we will build on our environmental achievements and continue to put management systems in place to meet our environmental commitments over the next 5 years and into the future. The AES provides the mechanisms to both better manage our environmental risks and further integrate and embed sustainable environmental management into every aspect of our business.

In the development of the Environment Strategy we have reflected on the performance and learning of the past and used this knowledge to develop an effective and accountable program for future environmental works. We will continue to operate Darwin International Airport responsibly and in the interest of our stakeholders.

Our ties with the community form a very important cornerstone for the Airport and we make it a priority to encourage positive involvement with the local communities.

Yours sincerely

IAN KEW
Chief Executive Officer

iii Executive Summary

Darwin International Airport Pty Ltd (DIA) has a 50 year lease plus 49 year option over the Darwin International Airport from the Commonwealth of Australia under the *Airports Act 1996* (The Act). The Act requires that each airport in Australia has a Final Environment Strategy written for its operations. Under the Act it is an offence to cause environmental harm at an airport site and this strategy outlines objectives and targets which bind DIA to ensure compliance with this standard.

This document is a five year strategic plan for the management of Darwin International Airport operations. Its purpose is to ensure relevant environmental standards and legislation are adhered to and guide continual improvement in environmental management across the airport.

The following table contains the key objectives set by DIA for each environmental attribute potentially impacted by airport operations:

ENVIRONMENTAL ATTRIBUTE	OBJECTIVE
Water	• Ensure minimal impact on surface and groundwater quality as a result of Darwin International Airport operations. • Maintain water quality within acceptable limits, as defined by legislative standards.
Land	• Employ land management practices which facilitate safe and sustainable Darwin International Airport operations, whilst minimising detrimental effects on the Airport site, neighbouring land and the atmosphere. • Ensure that existing contaminated sites are monitored and remediated where necessary.
Biodiversity	• In accordance with relevant legislation, protect rare and endangered species, natural habitats, flora and fauna wherever practicable, through sustainable management practices. • Minimise the rate and risk of bird and other animal aircraft strikes whilst also minimising negative impacts on wildlife. • Comply with animal ethics legislation and guidelines when undertaking wildlife management activities.
Air Quality and Emissions	• Compliance with air quality standards as defined by Commonwealth and Northern Territory Regulations. • Minimise air polluting emissions from Darwin International Airport, in particular greenhouse gases and ozone depleting substances.
Noise	• Ensure noise and vibration levels from ground running aircraft and other Darwin International Airport operations are compliant with relevant noise exposure standards.
Hazardous Materials	• Minimise the use of hazardous materials at Darwin International Airport. • Manage hazardous material storage, use and disposal in a manner that minimises risk to the surrounding environment.
Waste	• Minimise waste production from all Darwin International Airport operations and recycle waste products wherever practical. • Ensure wastes are properly stored, transported and disposed of.
Resource Use	• Minimise the use of non-renewable resources. • Increase efficiency in the use of natural resources, particularly energy and potable water. • Use renewable energy sources wherever practicable.
Cultural Heritage	• Preserve cultural heritage sites located at Darwin International Airport. • Formulate and implement appropriate management procedures in the event new cultural heritage sites are identified.
Development	• Integrate environmental considerations into the development of facilities and services and seek to minimise their environmental impact on the natural environment.
Tenants	• Work in partnership with Darwin International Airport tenants and operators to ensure best environmental practice continues to be implemented in all Airport operations in compliance with DIA standards.
Community	• Maintain and increase the involvement of Darwin community groups in the development and implementation of local environmental initiatives through the promotion of positive relationships.

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SECTION 1

Introduction

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- This Airport Environment Strategy (AES) is a five year strategic plan for the environmental management of Darwin International Airport Pty Ltd (DIA) operations.
- The AES is relevant to all operations on Airport, including both aviation and non-aviation related activities carried out by DIA staff, tenants and contractors.

SECTION 1

Introduction

BACKGROUND

Darwin International Airport is located around 13 kilometres north-east of the Darwin Central Business District on a 311 hectare leased site plus the 215 hectare joint-user (civil plus military use) area. This Airport Environment Strategy (AES) is a five year strategic plan for the environmental management of Darwin International Airport Pty Ltd (DIA) operations. Its purpose is to ensure relevant environmental standards and legislation are adhered to as well as to guide continual improvement in environmental management across the Airport.

This is the third AES for DIA, developed as a requirement of the *Airports Act 1996*. It replaces the previous Airport Environment Strategies, which covered the periods 1999 – 2004 and 2004 – 2009 and is a legally binding document which will remain in force until development of the next AES in 2014, unless a situation occurs where the current AES is replaced earlier.

DIA is a joint user airport, administered in partnership with the Department of Defence (DoD). The Military Area and Jointly Used Area are controlled by the Royal Australian Air Force (RAAF). The civil area, comprising 311 hectares of the 1526 hectare site, is leased by Darwin International Airports Pty Ltd for a period of 50 years with an option for a further 49 years. This AES has been developed for the area leased by DIA, as shown in Figure 2.

The AES is relevant to all operations on Airport, including both aviation and non-aviation related activities carried out by DIA staff, tenants and contractors. It has been developed alongside the DIA Master Plan 2009 and together these documents will provide direction for the management of the Airport site. DIA is committed to building on the environmental initiatives and improvements achieved over the previous AES periods.

This Draft AES has been prepared by DIA with the assistance of Ecosure Pty Lty. DIA also wishes to acknowledge EcOz Environmental Services and Sinclair Knight Merz for their contirbutions.

OWNERSHIP

Darwin International Airport Pty Ltd (DIA) is the airport lessee company (ALC) for Darwin International Airport.

DIA is 100% owned by the Airport Development Group Pty Ltd (ADG), which through its subsidiaries acquired the lease for DIA in June 1998, as well as those for Alice Springs Airport and Tennant Creek Airport. Each lease is for a period of 50 years with the option to renew for a further 49 years.

FIGURE 1: COMPANY STRUCTURE

LOCATION

Darwin International Airport is ideally located as part of the regional transport system as it is the nearest capital to the developing areas of South-east Asia, including Singapore, Malaysia, Indonesia and the Philippines. Darwin is located half way between major Australian cities and South-east Asian capitals.

DIA is located 13 kilometres north-east of the Darwin City centre. The Airport is located between the city to the south west and the district centre of Casuarina to the north *(refer to Figure 1)*. It is bounded by:

- Stuart Highway and Winnellie Industrial Area to the south;
- McMillans Road and Marrara sporting fields to the north;
- Bagot Road and residential and service commercial areas to the west, and
- Amy Johnson Avenue and Marrara wetlands to the east.

It is located in the wet/dry tropics and experiences 4-6 months of intense high rainfall followed by extended periods of little to no rainfall. This extreme climate provides its own unique environmental management issues including flooding and high levels of erosion and sedimentation in the wet season followed by near drought and high fire danger in the dry season.

SURROUNDING LAND USE

Residential areas and some open space are adjacent to DIA on its northern boundary, comprised of the suburbs of Coconut Grove, Millner, Jingili, Moil, Anula, Malak and Karama. The land south of the Airport is predominantly open space adjoined by service commercial/light industrial in the suburb of Winnellie, the Narrows residential area and Department of Defence (DoD) operations. Service commercial areas are situated west of the Airport. The eastern boundary comprises of the Marrara Swamp, Rapid Creek and various sporting facilities. Rapid Creek and Marrara Swamp are considered environmentally significant as the creek is the only fresh water body in Darwin. Bordering the eastern boundary is the Marrara Sports Complex, a golf course and a Caravan Park. The western boundary is bounded by a special purpose lease to an indigenous organisation and the suburb of Ludmilla.

OPERATIONS

In the 2007 - 2008 financial year DIA serviced 1,407,391 domestic passengers and 422,475 international passengers. This reflected an increase in the domestic services, particularly on the Darwin – Melbourne route, and an increase in international services, predominantly to the Asia Pacific region.

The Airport has two runways – the main runway, 11/29, is 3354 x 60 metres, with a secondary runway, 18/36, 1524 x 30 metres. Both have a full length, parallel taxiway. The Regular Passenger Transport aircraft apron can accommodate up to 12 B737 aircraft and the General Aviation (GA) apron can accommodate approximately 100 parked aircraft. A helipad and associated facilities are also present.

Additional infrastructure at DIA includes:

- Air Traffic Control (operated by RAAF);
- Two level, 16000 square metre terminal building;
- Aircraft maintenance hangars;
- Air freight facilities; and
- Refuelling and other aeronautical service related facilities.

Business activities undertaken at DIA include:

- Medical and surveillance services;
- Australian Quarantine Inspection Service (AQIS), Department of Environment, Water, Heritage and the Arts and Civil Aviation Safety Authority (CASA) offices;
- Catering facilities;
- Air charter, flight training and recreational flight operations;
- Rental car facilities;
- Accommodation facilities;
- Retail operations;
- Car parking;
- Childcare facilities; and
- Boarding kennels.

SOCIAL AND ECONOMIC IMPACT OF DARWIN INTERNATIONAL AIRPORT

Through the activities of directly-related businesses and their interactions with the wider economy, the Airport is estimated to account for approximately two percent of the Northern Territory (NT) Gross State Product (GSP). The net tourism impact of DIA is also considerable, generating an estimated $596 million in revenue and 2790 jobs. As Darwin seeks to build upon its national and international position the airport will take on increased significance as a key part of the NT's infrastructure. Initiatives to increase air activity and tourism visitation will further increase DIA's contribution to the NT economy.

Forecasts for growth indicate increases in passenger numbers to approximately 4 million/year by 2029, with the majority derived from the domestic market. Combined aircraft movements are forecast to increase to over 130,000/year, with significant growth (6% per annum) expected in the period 2009-2013, and growth from 2014-2029 expected to increase steadily at 1.5% per annum.

Based on projected visitor numbers and business initiatives, the projected impact of Airport activities on the NT economy in 2029 suggests that DIA will support approximately 3600 jobs. Annual revenue is expected to reach $1.186 billion and its value added (or contribution to GDP) will be $648 million per year. The Airport's contribution to the NT economy through net tourism is also expected to increase, with generation of an estimated 7600 jobs and $910 million dollars in revenue.

The significance of the airport to the NT is more than just economic. The maintenance and ongoing development of DIA is also critical in:

- Connecting remote communities;
- Enabling continued economic development in remote areas;
- Ensuring the availability of aircraft based medical services;
- Facilitating border protection services; and
- Servicing DoD operations.

MASTER PLAN

Under the *Airports Act 1996*, DIA is required to prepare an Airport Master Plan to provide a framework for future development at the Airport. The Master Plan is updated every five years and describes current and future airport land use and planning over a 20 year period. The Master Plan is supported by the AES therefore enabling effective management of the environmental impacts of ongoing operations and future growth at the Airport and ensuring effective planning and environmental management of Airport development projects.

Development required in the next five year period will be driven by the following factors:

- Increased low cost domestic carrier services and a decrease in international carrier services;
- Increased security and safety requirements; and
- Global economic conditions.

DIA development projects for the 2009 – 2014 Master Plan period may include, but not be limited to:

- Planning and development works for new taxiway elements, to cater for future projected traffic;
- Expansion and infill of the terminal building to accommodate increased passenger capacity and associated services;
- Increasing the capacity of existing Airport infrastructure in line with forecast demand (e.g. fire station, catering, parking, freight);
- Airport access upgrades; and
- Ongoing development of the commercial/development precinct.

FIGURE 2: DIA LEASE SITE AND SURROUNDING LAND USE

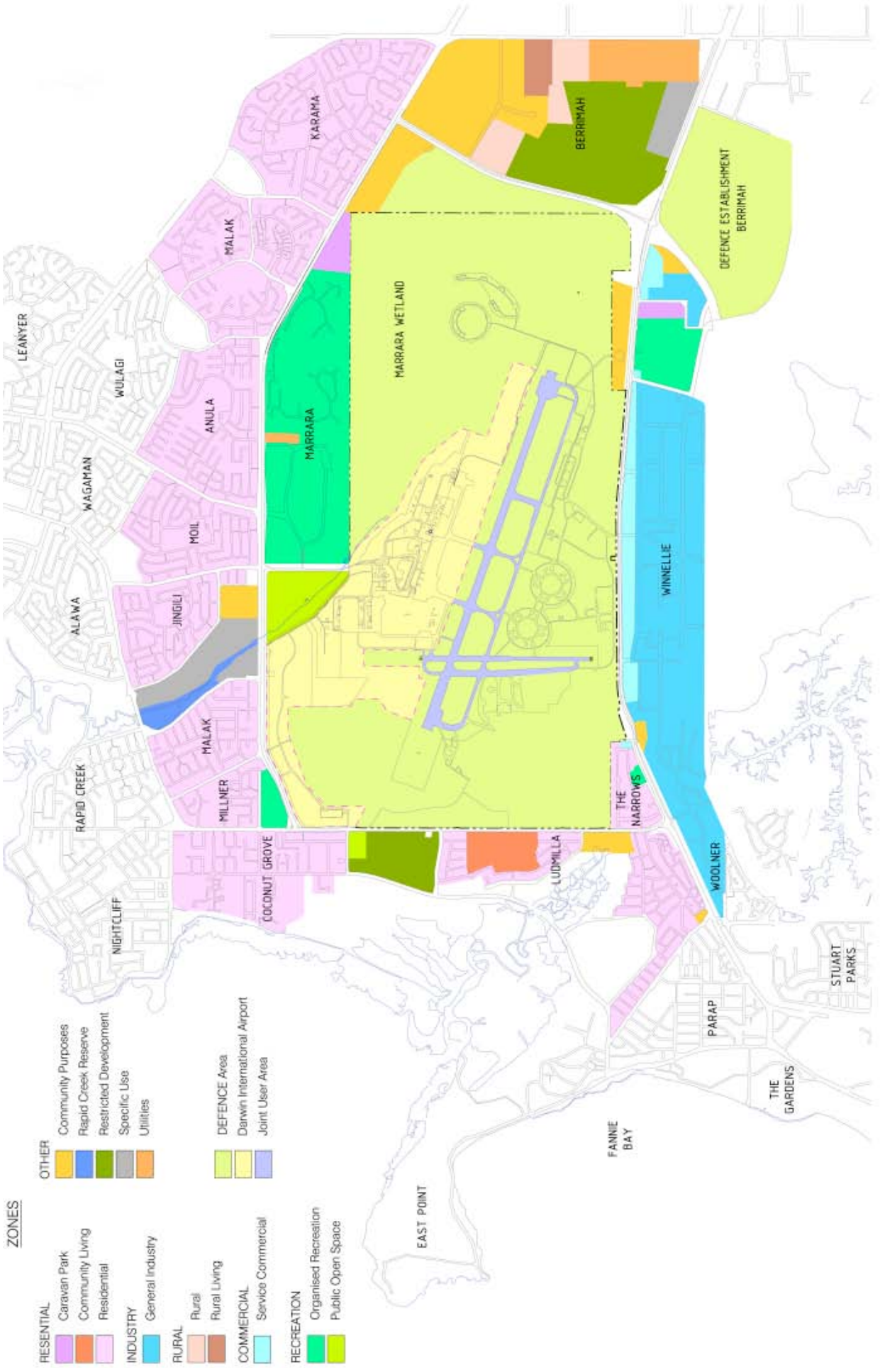
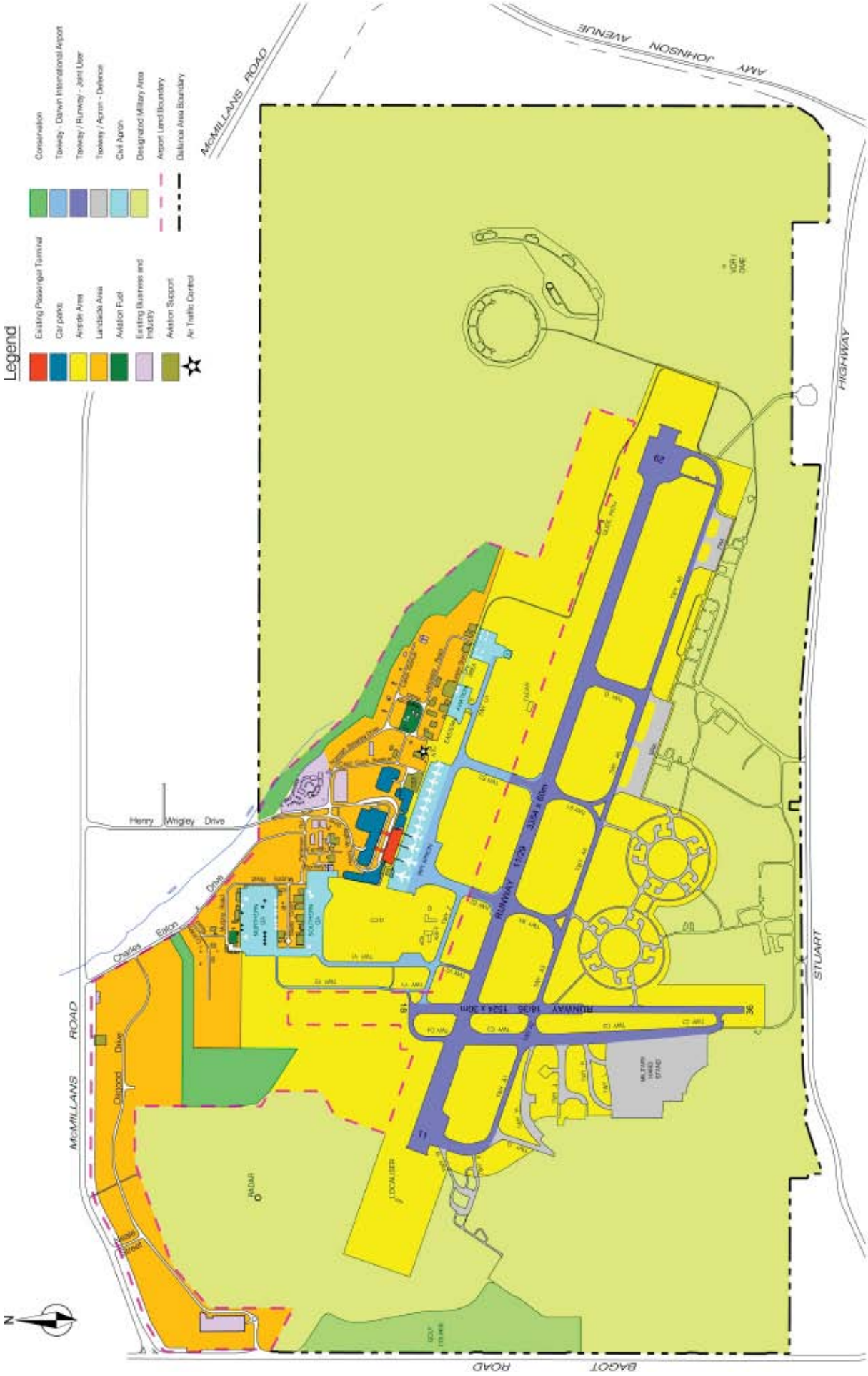


FIGURE 3: CURRENT DIA LAYOUT



SECTION 2

Airport Legislation Framework

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- *The Airports Act 1996* and the *Airports (Environment Protection) Regulations 1997* specify the content of an Airport Environment Strategy.
- Consultation with government, business and community is a prominent part of the Environment Strategy development process.
- The Environment Strategy must be submitted to the Federal Minister for Infrastructure, Transport, Regional Development and Local Government for approval.
- The Final (approved) Environment Strategy is valid for 5 years.

SECTION 2

Airport Legislative Framework

AIRPORT LEGISLATION

The Airports Act 1996, the *Airports (Environment Protection) Regulations 1997* and the *Airports (Building Control) Regulations 1996* were enacted by the Commonwealth to provide a regulatory framework for the operation and development of Federal airports in Australia leased to non-governmental enterprises.

Airports Act 1996 (the Act) – establishes the system by which airport operators/other users are required to abide. Part 6 directs the airport lessee company to develop an AES.

Airports (Environment Protection) Regulations 1997 (the Regulations) – outlines standards and imposes requirements for the management of environmental impacts. Also provide for monitoring, reporting and remedial action.

Airports (Building Control) Regulations 1996 – establishes a system for the approval of building activity at airports.

A summary of how legislative requirements have been addressed in this AES is detailed in Appendix 1.

Also significant in the Airport regulatory framework is the Environment Protection and Biodiversity Conservation Act 1999, which provides for the management and protection of Australian and internationally significant species of flora, fauna, ecological communities and heritage places.

In the event Federal legislation does not address an environmental issue or standard, NT legislation is applicable. NT legislation applies to such issues as motor vehicle pollution, occupational health and safety, emissions that deplete stratospheric ozone and pesticide use.

Pollution or noise generated by aircraft during flight, landing, taking off or taxiing is regulated under the *Air Navigation (Aircraft Engine Emissions) Regulations 1998* and the *Air Navigation (Aircraft Noise) Regulations 1984* and are not the responsibility of the airport lessee company.

DEPARTMENT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND LOCAL GOVERNMENT

The Department of Infrastructure, Transport, Regional Development and Local Government (DITRDLG) provides policy advice regarding Australian airports and the aviation industry to the Government and the Minister for DITRDLG (the Minister). In addition, DITRDLG manages the administration of the Government's interests in privatised airports under the Act. Under the Act, DITRDLG appoints two positions, the Airport Environment Officer (AEO) and the Airport Building Controller (ABC), to administer the Act and Regulations at the Airport. The AEO oversees adherence to the approved AES and administers the Regulations. The role of the ABC is to administer the *Airports (Building Control) Regulations 1996*.

DIA submits an Annual Environment Report (AER) to DITRDLG as required under the Regulation. The AER details:

- The results of any monitoring undertaken;
- Any pollution events or environmental issues, accompanied by any subsequent remediation plan; and
- DIA's progress in achieving the objectives and targets of the AES.

AES Approval Process

FIGURE 4: AES APPROVAL PROCESS

Stakeholder and Community Consultation

The Preliminary Draft AES was released to the public for comment from 22 July to 14 October 2009. During preparation of the Preliminary Draft AES, DIA provided the Exposure Draft AES to relevant government agencies, including DITRDLG. Consultation continued throughout the public consultation period of the Preliminary Draft AES.

Stakeholders consulted during the public comment period of the AES included:

- Airservices Australia – Canberra;
- Department of Defence – Canberra;
- Department of Defence – RAAF Base Darwin;
- Darwin International Airport staff;
- Airlines:
  - Qantas Airways;
  - Virgin Blue;
  - Jetstar Airways;
  - Skywest;
  - Tiger Airways;
  - Airnorth
- General Aviation operators;
- NT Government; and
- Darwin City Council.

As part of the public consultation process, DIA provided or undertook:

- Copies of the Preliminary Draft AES from the DIA Management Centre and www.darwinairport.com.au;
- Copies of the Preliminary Draft AES for viewing at the Darwin, Casuarina and Palmerston public libraries;
- Public display at the airport;
- Public display and face to face consultation at the Royal Darwin Show 23 – 25 July 2009;
- Presentations as requested.

Prior to the commencement of the public comment period, ASA advised in writing, as per the Act:

- the NT Minister for Planning and Lands;
- Department of Planning and Infrastructure; and
- Darwin City Council.

Dissemination of AES

As required by the Act, DIA will ensure that every person who is a sublessee or licensee of the ALC is aware of the Final AES and any approved variation of the strategy. This includes all staff, tenants and other Airport users. Upon approval, DIA will ensure that the Final AES is published in accordance with the requirements of the Act and made available for inspection and purchase.

Copies will be distributed to airport tenants, airlines and other relevant stakeholders.

The ALC and all operators of any undertakings at Darwin Airport are legally required to take all practicable steps to meet the requirements outlined in the AES.

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SECTION 3

Environmental Management Framework

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- DIA has established key objectives to guide environmental management at DIA.
- DIA is guided by a corporate framework which emphasises continual improvement in all airport management policies and programs.
- DIA is committed to the continual implementation and improvement of a comprehensive Environmental Management System and maintains an Environmental Site Register.

SECTION 3

Environmental Management Framework

ENVIRONMENTAL MANAGEMENT OBJECTIVES

DIA has established key objectives to guide environmental management at the Airport:

- Maintain an Environmental Management System (EMS) that is consistent with the international standard ISO 14001:2004 (Environmental Management);
- Ongoing identification of environmental and heritage values of the site;
- Commitment to continual improvement in minimising environmental consequences of activities;
- Continue to define clear responsibilities and conduct training for staff and contractors to achieve the objectives of the EMS as well as ensuring that appropriate authority and resources are provided to effectively meet environmental targets;
- Inform all new and existing staff and contractors working within the Airport environs of their environmental responsibilities;
- Maintain systems that identify legal and other requirements that apply to environmental management and keep DIA informed of change to existing and/or new legislation and regulations; and
- Ensure periodic review and auditing of the EMS to ensure its continuing suitability, effectiveness and compliance with objectives.

Objectives for each environmental management attribute of the airport are identified within attribute specific sections (5 – 16).

CORPORATE SUSTAINABILITY

DIA's intention is to operate an airport business that is world class in achieving and maintaining financial and environmental sustainability, customer service, safety and security, and is recognised as a key contributor and participant in the economic growth of the NT. DIA is guided by a corporate framework which emphasises continual improvement in all airport management policies and programs. The Airport Development Group Corporate Sustainability Policy is referred to when setting and reviewing environmental objectives and targets for DIA. This policy will be subject to change from time to time in order to remain current.

SUSTAINABILITY POLICY

Airport Development Group recognises the importance of maintaining and enhancing the quality of the environment for the benefit of all Australians, present and future.

In developing and managing Darwin International Airport, Alice Springs Airport and Tennant Creek Airport we will establish and maintain a system to:

- Identify and manage the significant environmental impacts on our airports;
- Set, in consultation with relevant authorities and the community, specific environmental objectives and targets
- Continually improve environmental management, minimise our environmental impacts and to prevent pollution;
- Continually measure, monitor, report , review and improve upon the environmental performance defined by our objectives and targets;
- Incorporate sustainability principles to ensure the needs of the present generation can be met without compromising the ability of future generations to meet their needs;
- Ensure company systems and processes incorporate consideration of sustainability;
- Comply with relevant environmental legislation and regulations;
- Lead and encourage stakeholders to improve the management of the environment, resources and communities in the regions in which we operate; and
- Promote the Company's commitment to the environment, to our employees, tenants, customers and neighbours.

CORPORATE ENVIRONMENTAL MANAGEMENT

Environmental management is the responsibility of all staff, tenants and contractors at the Airport. The Environmental Policy undergoes consultation and is communicated, implemented and maintained across all areas within the organisation. All employees and agents are responsible for compliance with the Environmental Policy. This policy will be subject to change from time to time in order to remain current.

ENVIRONMENTAL POLICY

The Airport Development Group recognises the importance of maintaining and enhancing the quality of the environment for the benefit of all Australians, present and future.

In developing and managing Darwin International Airport, Alice Springs Airport and Tennant Creek Airport we will establish and maintain a system to:

- Identify and manage the significant environmental impacts on our airports;
- Comply with relevant environmental legislation and regulations;
- Set, in consultation with relevant authorities and the community, specific environmental objectives and targets to minimise our environmental impact and to prevent pollution;
- Continually measure, monitor, report and improve upon the environmental performance defined by our objectives and targets; and
- Promote the Company's commitment to the environment, to our employees, tenants, customers and neighbours.

The following diagram (Figure 5) describes the environmental management framework and supporting corporate structure, at DIA.

TRAINING

DIA has documented procedures to ensure that operators and tenants receive appropriate environmental management training. Educating individuals on environmental awareness is vital to the successful implementation of environmental management initiatives.

In particular personnel are made aware of:

- The importance of compliance with the Sustainability and Environmental Policies and objectives, the AES and EMS, and their roles and responsibilities;
- The significant environmental impacts of their operations, whether actual or potential;
- The environmental and economic benefits of improved performance; and
- The potential consequences of deviating from acceptable procedures.

Role specific training may include:

- Airport Induction
- Spill Response & Management
- Bird and Animal Hazard Management
- Chemical Hazard Management.

Training may be conducted by appropriate external organisations or internally.

FIGURE 5: FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT AT DIA

Achievements, with regard to training, in the 2004 – 2009 AES period include:

- Updated Staff Induction Package, including specific environmental elements;
- Updated Tenant Environment Management Handbook;
- Development of 'Site Rules' and implementation of the requirement for Construction Environment Management Plans for development projects;
- Development of a Contractor Induction program, including assessment; and
- A staff orientation day encompassing environmental management at DIA and an airside tour.

ENVIRONMENTAL MANAGEMENT SYSTEM

DIA is committed to the continual implementation and improvement of a comprehensive Environmental Management System (EMS). In accordance with the Regulations the EMS is required to maintain consistency with relevant Australian and International standards. The EMS for Darwin International Airport was developed in 2000 and continues to be updated and enhanced to ensure it is compliant with ISO 14001:2004.

All activities at the Airport with the potential to impact on the environment are analysed and managed in the DIA EMS. The EMS is implemented to enable DIA to formulate policy and objectives, taking into account legislative requirements and information about significant environmental impacts. The EMS applies to those environmental aspects that the organisation can control and over which it can be expected to have an influence. The EMS takes account of pertinent regulations, codes of practice and standards which relate to DIA's operational activities.

Each operator/tenant at the Airport is encouraged to develop and implement an individual EMS, to address the specific activities undertaken by each business and their potential environmental impacts. DIA has established a system of compliance for individual operators, based on the level of environmental risk posed by their activities, which helps to ensure the ongoing implementation and improvement of each EMS.

ENVIRONMENTAL SITE REGISTER

In accordance with the Regulations, DIA has developed and is maintaining an Environmental Site Register (ESR), which is a written record of the environmental condition of the airport, environmental site assessment details, remedial plans, monitoring undertaken and general environmental management at the Airport.

Details are included within the ESR of the nature, date and place of any occurrence of environmental significance (detrimental or beneficial) at the airport. Should a remedial plan be required to address any pollution issues, this is also available via the site register. Any monitoring programs conducted by tenants are also detailed within the ESR.

Two systems are employed to maintain the ESR:

- An Environment Geographic Information System (Arc GIS) which combines data on infrastructure and environmental factors. This system collates environmental information for analysis enabling consideration of environmental aspects during land use planning.
- An intranet based document management system – SharePoint.

SITES OF SIGNIFICANCE

DIA has taken into account a number of considerations to enable determination of environmentally and culturally significant areas on the airport, as airport legislation does not provide a definition of significance. The NT Government has developed a Biodiversity Guide for Environmental Impact Assessment and Guidelines for the Terrestrial Biodiversity Component for Environmental Impact Assessment (2005), which DIA has applied, in conjunction with the *Territory Parks and Wildlife Conservation Act 2000*, to determine communities and species of significance on the DIA site.

There are no environmentally significant Commonwealth or State listed sites currently recorded on the ESR for the Airport.

The Airport land is within the Rapid Creek Catchment, however the Creek itself borders the DIA lease site. Rapid Creek contains a number of important remnant vegetation communities including savannah woodland, riverine monsoon forest, grassland and paperbark swamps. Species and communities which provide habitat for significant species are considered as being of conservation significance if they are listed under the *Territory Parks and Wildlife Conservation Act 2000*.

A list of flora and fauna species, including significant species, identified at DIA through DIA's ecological survey program is detailed in Appendix 2.

Past consultation with the community and Larrakia people indicates no recorded Aboriginal Sacred Sites or heritage sites within the DIA lease area.

STUDIES, REVIEWS AND MONITORING

Under the Regulations, DIA is required to monitor the levels of pollution, if any, present in air, water or soil at the Airport and the level of noise generated at the Airport.

Monitoring and measurement processes provide information to Airport operators and tenants in relation to environmental performance. DIA's monitoring addresses the following areas:

- Environmental objectives and targets;
- Operations and activities that can have significant environmental impact;
- Compliance with applicable environmental legislation and regulations; and
- Airport operators and tenants, in order to verify that appropriate measures are in place.

TABLE 1: DIA ENVIRONMENTAL MONITORING PROGRAM

ATTRIBUTE	PARAMETER/S MONITORED	FREQUENCY
Surface water	• Heavy metals and analytes against Schedule 2 of the Regulations • Nutrients and bacteriological parameters against the NT Microbiological Guidelines	3 in wet season, 1 in dry season
Ground water	• Heavy metals and analytes against Schedule 2 of the Regulations	6 monthly
Rapid Creek	• Macroinvertebrates – species composition and quantity	Annually
Potable water	• Analytes against the Australian Drinking Water Guidelines and Schedule 2 of the Regulations	Monthly and as required
Erosion Photopoint Monitoring	• Soil loss/accumulation, changes over time	3 monthly
Contaminated Sites	• Heavy Metals and analytes against Schedule 3 of the Regulations	As required
Fire and Weed Management	• Percentage of weed cover and reduction in weed species present, fuel loads	Annual assessment
Flora and Fauna	• As per established guidelines for biodiversity assessment in the NT	Annual, development based
Bird and Animal Hazard	• Identification of presence of potentially hazardous species to determine if disturbance/removal actions are required	Weekly
Mosquitoes	• Requirements under NT Health Legislation and in accordance with AQIS international airports monitoring procedures	Weekly
Ground Noise	• Regular audit and reporting of ground running activities and noise measurements	As required
Chemicals	• Use, type stored and storage facilities	Annually
Underground Storage Tanks	• Product loss, integrity	Weekly dip testing, 5/10 year integrity tests
Asbestos	• 'Asbestos Code of Practice and Guidance Notes', Worksafe Australia or requirements under NT legislation	Annually / as required
Waste	• Quantity of recycled material, waste to landfill and total waste generated	Monthly
Resources	• Energy and water consumed	Monthly

Data is collected and analysed by appropriately qualified staff or contractors. Where applicable, analysis is undertaken by laboratories accredited by the National Association of Testing Authorities. All data forms part of the ESR.

Monitoring locations, frequencies, procedures and parameters are reviewed annually and may change in response to local conditions or monitoring program reviews. Any change is undertaken in consultation with the AEO.

Future monitoring is identified under the five year plans in sections 5-16.

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SECTION 4

Environmental Attributes

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- The environmental management attributes addressed in this AES include:
  - Water
  - Land
  - Biodiversity
  - Air Quality and Emissions
  - Noise
  - Hazardous Materials
  - Waste
  - Resource Use
  - Cultural Heritage
  - Development
  - Tenants
  - Community

SECTION 4

Environmental Attributes

This section describes how the current strategy is structured with respect to individual environmental attributes relevant to DIA.

Key Objectives

Key objectives will be identified to guide the management of each specific environmental attribute over the five year strategy period. Achievement towards each objective will be measured and reported to DITRDLG within the Annual Environment Report.

Objectives have been developed to facilitate continuous improvement in environmental management, as well to reduce extant pollution at the Airport.

Goals of this AES were developed and prioritised based on a risk assessment approach using the DIA's EMS Risk Management Matrix based on the AS/NZS 4360:2004. The Matrix was used to classify targets as having a high or lower priority. High priority targets will generally be completed within the first two years of the AES period before December 2011. Lower priority targets will be completed before the end of this AES period in 2014. Ongoing actions, such as soil and water quality monitoring will be given priority each year. Where possible the timeframes for actions have been spread out over the coming five years to avoid creating unrealistic workloads at any one time that could otherwise hamper achieving goals on schedule.

BACKGROUND

This section presents general information on each specified environmental management attribute at DIA. Detail is provided, where appropriate on:

- **Definition**: as defined by Airport legislation
- **Overview**: an overview of the attribute
- **Legislative Requirements and Guidelines**: highlighting responsibilities, and requirements under relevant airport legislation or other applicable legislation or guidelines.

SOURCES OF ENVIRONMENTAL IMPACT

This section outlines potential and actual environmental impacts that have been identified, including current significant sources of impact and prioritising sources of potential environmental impacts that may become prominent in the future. Both on and off-site impacts resulting from airport activities are identified.

CURRENT MANAGEMENT PRACTICES

This section includes details on any current monitoring program, reporting, initiatives, training and management approaches to minimise the risk of environmental impacts.

RECENT ACHIEVEMENTS

Actions which have progressed environmental management at the Airport in the period 2004 – 2009 are listed in this section. Those which realised targets from the 2004 AES, or are in addition to those targets, are noted.

Example table

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
e.g. Development of Risk Analysis of Potential for Groundwater Contamination	2007/2008	Yes
e.g. Historical review of water quality monitoring data	2005/2006	Additional achievement

FIVE YEAR ACTION PLAN

For each attribute, a five year action plan has been developed with the specific intention of ensuring the objective is achieved within identified time frames. Each action plan contains targets for:

- Proposed studies, reviews and monitoring
- Proposed measures for preventing, controlling or reducing identified environmental impacts.

Example table

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
e.g. Reduction of Energy Use	Completion of Energy Efficiency Plan	By 2011

ENVIRONMENTAL MANAGEMENT ATTRIBUTES

The environmental management attributes addressed in this AES include:

- Water
- Land
- Biodiversity
- Air Quality and Emissions
- Noise
- Hazardous Materials
- Waste
- Resource Use
- Cultural Heritage
- Development
- Tenants
- Community

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SECTION 5

Water

KEY OBJECTIVES

- Ensure minimal impact on surface and groundwater quality as a result of DIA operations.
- Maintain Airport water quality within acceptable limits, as defined by legislative standards.

SECTION 5

Water

BACKGROUND

Definition

Under the Regulations, water is defined as marine, estuarine or fresh, and includes a body of water, a natural watercourse, a swamp or wetland, groundwater and water in a channel, drain, pipe or other artificial holding facility (unless it is water in a system for the passage of sewage, or for the passage or trapping of pollution).

Waste water (sewage effluent) is dealt with in Section 11 of this AES (Waste).

The Regulations deem that water pollution has occurred when waters contain a substance or organism that causes, or is reasonably likely to cause, the physical, chemical or biological condition of the waters to be adversely affected; or that causes, or is reasonably likely to cause, an adverse effect on beneficial use of the waters. Pollution can include substances dissolved in the water, held in suspension, as particulate matter, as material floating on the water surface or it may exist as sediment.

Overview

The Airport site is within the Rapid Creek Catchment with the exception of the northwest section which is part of the Ludmilla Creek catchment. Rapid Creek is less than 10 kilometres (km) long and drains a catchment area approximately 19km^{2}.

Owing to monsoon conditions, the water table fluctuates widely between the wet and dry seasons. During the wet season the water table rapidly rises to combine with surface water, generating sheet flows of up to 1.5m deep and lowers to several metres below ground level during the dry season.

Legislative Requirements and Guidelines

Relevant acts and guidelines include:

- *Airports (Environment Protection) Regulations 1997*
- *Water Act 2008 (NT)*
- Australian and New Zealand Environment Conservation Council Guidelines for Fresh and Marine Water Quality.
- NT Microbiological Guidelines (2007) and NT Recreational Microbiological Water Quality Guidelines (Department of Health and Community Services, December 2007)

SOURCES OF ENVIRONMENTAL IMPACT

Operational activities have the potential to impact upon water quality at the Airport. Potential sources of impact include:

- Leakage from above or below ground fuel storage tanks;
- Spills of toxic or hazardous material;
- Aircraft and vehicle wash down in areas lacking appropriate pollution containment measures;
- Incorrect usage of chemicals, including pesticides and herbicides;
- Historical sources of pollution, such as the practice of using hydrocarbons for dust suppression and dumped material from Cyclone Tracy;
- Excess fertiliser use or sewage spills; and
- Litter and sediment

CURRENT MANAGEMENT PRACTICES

The potential water quality hazards identified above are currently managed by a range of methods.

Chemical and fuel storage is subject to regular monitoring to check for leaks and ensure compliance with NT Worksafe standards. Spills are managed through a Standard Operating Procedure (Spill Response). Spill Response Training is provided to Airport operators/tenants to ensure all personnel can rapidly and appropriately respond to spills.

Only superficial wash down of light aircraft is permitted on the GA apron. All other wash down of vehicles and aircraft occurs in designated wash down bays which are bunded and drain to an oil-water separator.

DIA implements a comprehensive water quality monitoring program at sites within landside stormwater drains and Rapid Creek, and of groundwater, to ensure that all interceptor systems discharging to the drains are functioning properly. Monitoring details are provided in Table 1.

RECENT ACHIEVEMENTS

Actions which have progressed water management at the Airport in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

ACHIEVEMENTS	DATE ACHIEVED	2004 AES TARGET
Construction of a stormwater retention basin on RAAF site to reduce erosion and flooding caused by stormwater peak flow events.	2007 - 2008	Additional achievement
Historical review of water quality monitoring data to identify gaps in the program and support the planned revision of the Stormwater Quality Management Plan.	2007 - 2008	Additional achievement
Installation of three (3) new groundwater monitoring wells plus additional data from DoD on a further thirteen (13) wells installed on the RAAF site.	2007 - 2008	Yes
Expansion of the water quality monitoring program to incorporate biological indicator monitoring of Rapid Creek.	2006 - 2007	Yes
Expansion of the water quality monitoring program to incorporate Yankee Pools.	2004 - 2005	Yes

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Surface and Groundwater Protection	• Develop a Groundwater Management Plan to be incorporated into the DIA Development Guidelines.	By 2012
	• Options and feasibility assessment for the installation of an additional, larger wash down bay in the General Aviation areas.	By 2013
	• Undertake stormwater monitoring review and implement updated Stormwater Quality Management Plan.	By 2010 and ongoing
	• Incorporate DIA water quality data onto Rapid Creek Catchment Advisory Committee website.	Ongoing
	• Audit pollution control devices at DIA and commence inspections with NT Power and Water Authority.	Ongoing
	• Continue to improve the awareness of water quality impacts and objectives within the DIA community.	Ongoing

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SECTION 6

Land

KEY OBJECTIVES

- Employ land management practices which facilitate safe and sustainable DIA operations, whilst minimising detrimental effects on the Airport site, neighbouring land and the atmosphere.
- Ensure that existing contaminated sites are monitored and remediated where necessary.

SECTION 6

Land

BACKGROUND

Definition

Land refers to the ground or soil, and encompasses geographical features of the Airport.

The Airports (Environment Protection) Regulations 1997 deems that soil pollution has occurred when a substance has, or is likely to have, an adverse impact on the chemical or biological condition of land or groundwater.

Overview

The soils at the Airport consist of gravelly red or yellow earths underlain by a layer of weathering laterite over lower cretaceous sedimentary rock. In the wetland and wetter areas soils are predominantly acid peats and clays or sandy and gleyed podsolics with limited occurrence of leaved brown soils and humic gleys at the wetter extremes. Siliceous and earthy sands are deposited in drains and on lower slopes as a result of erosion by water.

Prior to DIA taking over the current lease, the Airport site had been subjected to fire, extensive clearing and had been used for landfill. There are five identified contaminated sites at the Airport, the locations of which are shown in Figure 6. Additionally, climatic conditions provide DIA with many land management challenges including erosion, sedimentation and dust.

Legislative Requirements and Guidelines

Relevant acts and guidelines include:

- *Airports (Environment Protection) Regulations 1997*
- *Soil Conservation and Land Utilization Act 2001*
- *NT Bushfires Act 2004*
- *NT Bushfire Regulations 2005*
- Assessment of Site Contamination National Environment Protection Measure (NEPM) 1999
- Northern Territory Planning Scheme

SOURCES OF ENVIRONMENTAL IMPACT

Environmental impacts on land at the Airport include:

- Erosion, caused by wind or water and associated dust production;
- Fire (natural and prescribed regimes) exposing bare soil;
- Contamination through accidental spills or leaks;
- Incorrect disposal of waste materials;
- Land clearing activities for development, weed control or landscaping;
- Use of fill which has not been validated as contaminant free; and
- Construction activites

CURRENT MANAGEMENT PRACTICES

Soil Management and Monitoring

DIA implements a number of measures to minimise erosion of soil by wind or water:

- Capital works to improve the condition of any unlined drains;
- Airport construction/land clearing activities – requires submission of an erosion and sedimentation plan for minor projects and the development of a Construction EMP for major projects;
- Erosion Monitoring Program measuring rates of erosion/ deposition in drainage lines; and
- Retention and capture of stormwater

Fire Management

DIA is characterised by considerable developed infrastructure surrounded by tracts of open woodland, necessitating a combined fire management approach to protect infrastructure. DIA implements a two-stage, seasonal and area specific burning strategy incorporating wet season burning and early dry season buffer and protection burns. This strategy assists in the maintenance and enhancement of habitat diversity by varying the seasonality, frequency, location and intensity of fires occurring throughout the Airport.

Contaminated Land

Table 2 provides details of validated sites (current and historic) on the DIA Contaminated Site Register. These sites are identified in Figure 6.

TABLE 2: CONTAMINATED SITES AT DIA

SITE REFERENCE	CONTAMINANT	REMEDIAL PLAN/ACTIONS
Landfill 1 (low risk)	Potential remnant fragments (explosives, metals)	To be addressed if development of the site is proposed
Landfill 9 (high risk)	Metal fragments, chromium copper, zinc, asbestos fragments	Ongoing monitoring (soil and groundwater)
Landfill 10 (high risk)	Metal fragments, asbestos fragments	Ongoing monitoring (soil and groundwater)
Landfill 11 and 12 (low risk)	Inert construction wastes	

Role specific training for the Airport operators and tenants, to assist in the minimisation and management of contamination, is also implemented. This includes Spill Response and Management, and Chemical Hazard Management training.

RECENT ACHIEVEMENTS

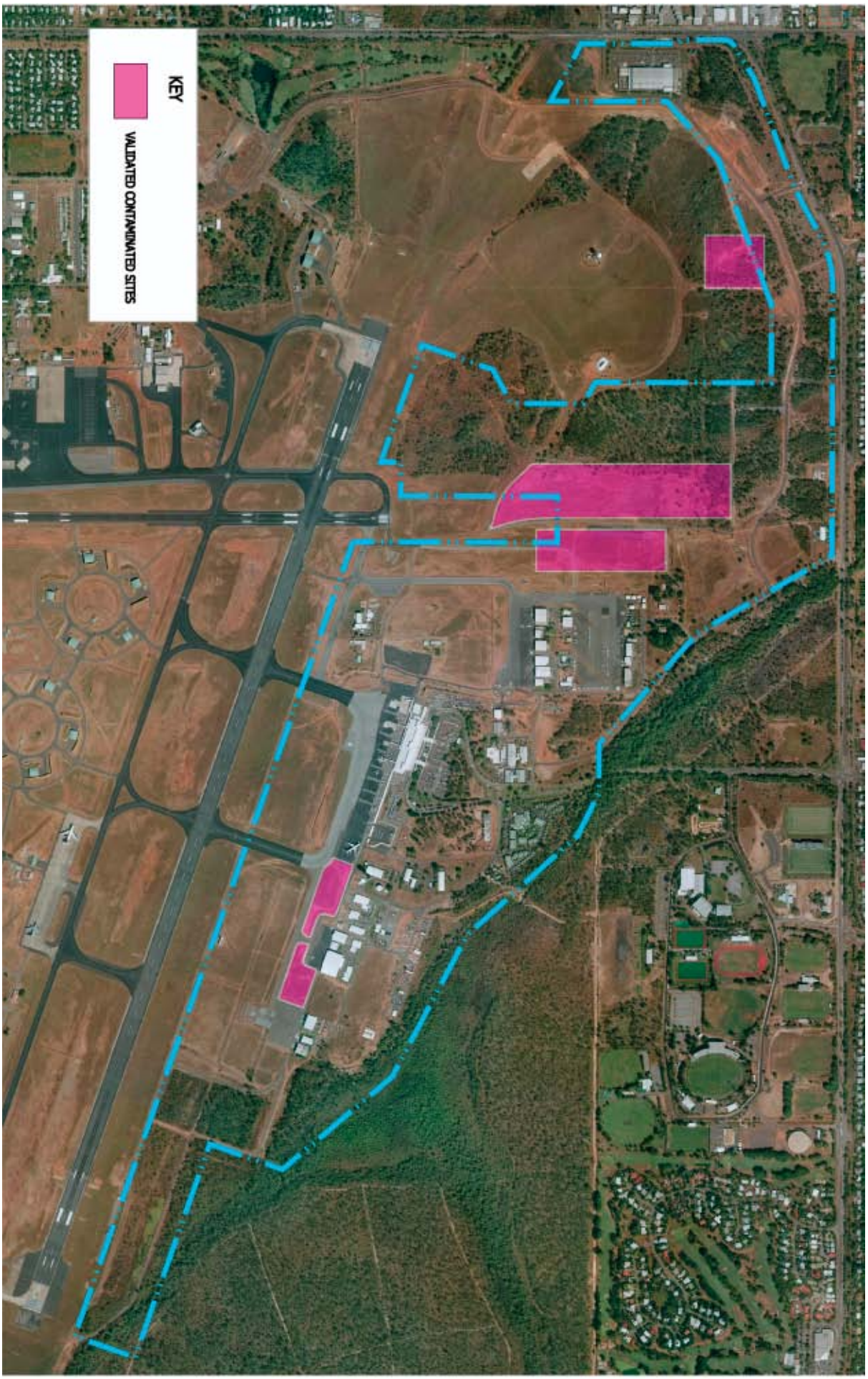
Actions which have progressed land management at the Airport in the period 2004 - 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
DoD provided DIA with a comprehensive investigation of the Cyclone Tracey landfill sites.	2007/2008	Yes
No additional contaminated sites were identified.	2007/2008	Yes
The DIA Asbestos Register was updated and inspections completed on DIA buildings. No DIA buildings were required to be included on the Contaminated Site Register.	2007/2008	Additional achievement
Capital works for erosion control in the Yankee Pools/Rapid Creek area.	2006/2007	Yes
Photopoint monitoring for stormwater drains implemented to measure erosion and identify areas for future capital works.	2005/2006	Additional achievement
Late wet season/early dry season controlled burn policy incorporated into the 2004-2009 Fire Management Plan.	2005/2006	Additional achievement

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Minimise soil erosion across the Airport	• Continue to implement the Erosion Monitoring Program and analysis of erosion/ deposition trends. • Ensure appropriate sediment and erosion control measures are implemented during any development. • Continue to implement controlled burn policy to ensure vegetative cover is maintained, particularly during the wet season. • Revegetation of erosion prone areas. • Map erosion control sites/measures for inclusion in the ESR.	Ongoing Ongoing Ongoing Ongoing By 2013
Implement best practice fire management	• Develop a Standard Operating Procedure for Control Burn Notification.	By 2010
Maintain Contaminated Site Register	• Review the Contaminated Site Register to ensure best management practices in alignment with Industry standards.	By 2012
Continue asbestos inspections and updating of DIA Asbestos Register	• Develop an Asbestos Management Plan.	By 2010

FIGURE 6: SITE MANAGEMENT – CONTAMINATED SITES



SECTION 7

Biodiversity

KEY OBJECTIVES

- In accordance with relevant legislation, protect rare and endangered species, natural habitats, flora and fauna wherever practicable, through sustainable management practices.
- Minimise the rate and risk of bird and other animal aircraft strikes whilst also minimising negative impacts on wildlife.
- Comply with animal ethics legislation and guidelines when undertaking wildlife management activities.

SECTION 7

Biodiversity

BACKGROUND

Definition

Biodiversity generally describes the number and variety of species of plant and animal life within a given area. Biodiversity can be a measure of the health of an ecosystem, with healthy ecosystems generally having greater variety and variation in plant and animal life than unhealthy ones.

Overview

Despite a history of disturbance, the Airport site encompasses many intact natural habitats that are relatively high in biodiversity. The majority of vegetation communities are regrowth aged less than 20-30 years old. Historical vegetation clearance, fire and weed infestations have affected the integrity of these communities. However, the climatic influence of the wet/dry tropics enables many vegetation communities to regenerate naturally.

Approximately three quarters of the Airport site is comprised of cleared grassland associated with the buildings and airfield systems. The remainder of surrounding vegetation communities include remnants of Eucalypt woodland and part of the Rapid Creek riverine corridor. Figure 7 illustrates the vegetation communities within the DIA lease boundary and surrounding areas.

DIA undertakes annual ecological surveys of the Airport site. Appendix 2 lists all identified species of flora and fauna identified on the Airport site, including details of any species of conservation significance, those listed under International agreements and any pest species.

Legislative Requirements and Guidelines

Relevant acts and guidelines include:

- *Airports Act 1996*
- *Airports (Environment Protection) Regulations 1997*
- *Environmental Protection and Biodiversity Conservation Act 1999*
- *NT Fisheries Act 2005*
- *NT Weeds Management Act 2001*
- *NT Weeds Management Regulation 2006*

SOURCES OF ENVIRONMENTAL IMPACT

Airport activities which may impact upon flora and fauna include:

- Clearing of vegetation for development and to comply with height restrictions;
- Fire, including wildfire and controlled burns;
- Fuel or chemical spills;
- Invasive weeds and weed control techniques (including herbicide use); and
- Aircraft noise and accidents

Flora and fauna which may pose an environmental, health or safety risk include:

- Birds and other animal strike risk;
- Pest animals including wild dogs, feral cats, mice, mosquitoes and Cane Toads; and
- Invasive weeds.

CURRENT MANAGEMENT PRACTICES

Vegetation Management

Vegetation Management measures implemented at the Airport include:

- Development of Construction EMP's for development projects;
- Implementation of DIA Landscaping Guidelines requiring the use of native species for revegetation and landscaping works;
- The establishment of vegetation reserves; and
- Regeneration programs across the Airport site.

The Airport site is highly modified and frequent disturbance and land clearing has enabled several weed species to thrive. Intensive weed management programs are implemented across the site and are conducted in conjunction with other environmental programs such as fire management and regeneration works, to achieve an integrated approach. A 'restricted and prohibited' species list is maintained by DIA and included in the Development Guidelines.

Pest Animals

A range of measures are implemented to control the various pest animals at DIA. These include:

- Feral dogs – managed under DIA's 'Bird and Animal Hazard Management System' (BAHMS);
- Mosquitoes – monitoring of drains and areas where ponding may occur to identify and minimise potential breeding sites. Pesticide application occurs when necessary; and
- Cane Toads – a relatively new threat, DIA will work in partnership with the NT Government and other community groups to manage impacts.

Bird and Animal Strike

Birds are the most diverse group of vertebrates found within the airport. Birds and wildlife in general, present a serious risk to aircraft safety. Birdstrikes cost the global airline industry $1.2 billion US annually, and are considered one of the most common causes of aviation accidents (Avisure 2009).

The risk of bird and animal strike at the Airport is managed through the implementation of a BAHMS. The main objective of the BAHMS is to reduce bird and animal aircraft strike incidences, using both active and passive management to discourage problem birds and other animal from utilising airside areas.

DIA recognises that bird and animal hazard management requires a systematic approach, rather than focussing individually on problem bird species. Bird presence is influenced by available habitat, predators, water, food sources, inter/intra-species behaviour and human interaction.
Ongoing bird and animal management activities undertaken by DIA include:

- Bird observations and incidents of strikes, entered into a database;
- Bird and habitat identification training for Airport Operations Officers;
- Habitat modification, including maintaining optimal grass height adjacent to runways;
- Dispersal activities including 'bird frite' cracker shells, sirens and gunshot;
- Ongoing reporting and stakeholder meetings to review the implementation of the program; and
- Annual program auditing.

RECENT ACHIEVEMENTS

Actions which have progressed biodiversity management at DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.
Refer to table below.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
Establishment of a 15 hectare Conservation Reserve in partnership with Greening Australia. The partnership was awarded 1st place in the Commercial/Industry category of the 2008 NT Power Water Melaleuca Awards.	2008/2009	Additional achievement
Landscape treatment Hierarchy and Restricted and Permitted Plant report incorporated into Development Guidelines.	2008/2009	Additional achievement
DIA contractor, Cloustons, wins BPN Environment Sustainability Award for Landscaping Design for works at DIA's Commercial Precinct.	2008/2009	Additional achievement
Commencement of mosquito management program in partnership with AQIS and the NT Department of Health and Community Services.	2007/2008	Additional achievement
Native gardens established at DIA Management Centre.	2007/2008	Additional achievement
Implementation of the Rapid Creek Corridor Management Plan and associated development of walking trails, signage and picnic facilities. This received a Highly Commended Award at the 2006 NT Power Water Melaleuca Awards.	2006/2007	Yes
Airfield vegetation management study conducted to research influence on bird strikes.	2005/2006	Yes
Development and implementation of Landscape Master Plan.	2005/2006	Additional achievement
Development and implementation of Landscaping Deed between DIA and the NT Government.	2005/2006	Additional achievement
New waste transfer station constructed incorporating mechanisms to reduce animal attraction.	2005/2006	Yes
Native gardens established at CASA and AQIS precincts.	2005/2006	Additional achievement
Extension of 'Matboerma' native gardens adjacent to terminal car park.	2004/2005 and 2008/2009	Additional achievement
Interpretive signage erected at 'Matboerma' gardens and updated.	2004/2005 and 2008/2009	Additional achievement

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Habitat protection	• Continue partnership with Greening Australia on the Conservation reserve. • Continue implementation of Fire and Weed Management Plan to reduce fire risk and weed infestation over time. • Map AQIS mosquito monitoring locations at the Airport and continue to implement monitoring and management measures. • Update ESR with ongoing ecological survey data for trend analysis.	Ongoing Ongoing By 2010 and ongoing By 2010 and ongoing
Strike risk reduction	• Review and update BAHMS. • Identify and monitor relevant bird attractors off-airport, in partnership with relevant land owners.	Ongoing Ongoing
Weed management	• Ensure implementation of the Landscape Master Plan by all operators, contractors and tenants, during development at the Airport. • Continue weed management in accordance with the Fire and Weed Management Plan and update ESR with new treatment sites.	Ongoing Ongoing

FIGURE 7: VEGETATION WITHIN AND SURROUNDING DIA

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SECTION 8

Air Quality and Emissions

KEY OBJECTIVES

- Compliance with air quality standards as defined by Commonwealth and Northern Territory Regulations.
- Minimise air emissions from the Airport, in particular greenhouse gases and ozone depleting substances.

SECTION 8

Air Quality and Emissions

BACKGROUND

Definition

The Regulations deem that air pollution has occurred when a pollutant is present in the air which is likely to cause harm to the environment, unreasonable inconvenience is likely to be caused to any member of the public, or to a person outside the immediate vicinity of the pollutant source. Pollutants may include:

- Particulate matter, including dust, smoke and soot;
- Gases and vapours including acids, oxides of nitrogen, volatile organic compounds, halogen compounds, heavy metal compounds, compounds of sulphur, ozone and carbon monoxide; and
- Any substance causing an objectionable odour.

Overview

DIA experiences few issues with air quality or air pollution. Complaints relating to air pollution from airport operations are rare and are typically associated with one-off events such as bush fires or Airport Rescue Fire Fighter training exercises. As the Airport is only of a moderate size, emissions from operations are generally not produced in quantities that can be considered significantly harmful or toxic to humans or to native flora and fauna in the area.

As a member of the National Greenhouse Challenge Plus Program, DIA has developed and implemented an Air Emissions Inventory. Emissions monitoring has been undertaken by DIA and annual emissions reports were submitted. Generally, total air emissions produced does not exceed the National Pollution Inventory trigger levels, for any individual operation on Airport, nor for the Airport as a whole.

Legislative Requirements and Guidelines

Applicable acts and guidelines include:

- *Airports (Environment Protection) Regulations 1997*
- *National Greenhouse and Energy Reporting Act 2007*
- *Ambient Air Quality National Environment Protection Measure (NEPM) 1998*

SOURCES OF ENVIRONMENTAL IMPACT

Under the Regulations, air pollution may be from a stationary or other source.

Stationary sources include:

- Emissions generated by auxiliary and ground power units;
- Boilers, turbines electrical generators and incinerators;
- Fuel burning equipment;
- Evaporation of Volatile Organic Compounds (VOCs) from large storage tanks;
- Oil or gas fired plant equipment; and
- Construction activities.

Other sources include:

- Ground based operations generating dust or smoke (including black smoke emissions from fire training);
- Ground based aircraft movements;
- Refuelling, de-fuelling and evaporation of VOCs from spillage;
- Painting and paint stripping operations; and
- Cleaning operations using solvents.

CURRENT MANAGEMENT PRACTICES

Air quality monitoring is conducted by qualified consultants periodically and when required. Greenhouse gas emissions are monitored through the Greenhouse Challenge Plus program. Under this program, a number of direct actions have been implemented across DIA, including a review of airfield lighting and plant equipment operation with the aim of reducing energy consumption and greenhouse gas production.

Black smoke emissions are a result of necessary fire training. The impacts are managed by limiting fire training exercises to outside the hours of major aircraft activity and informing the Airport AEO before fires are lit, through the Control Burn Notification Process.

Dust generation is managed through operational systems aimed at minimising ground disturbance during construction or other activities. This is done through such measures as Construction EMP's for development projects which address dust suppression.

RECENT ACHIEVEMENTS

Actions which have progressed air quality and emissions management by DIA over the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
Establishment of a partnership with the Monash Sustainability Institute to update the Greenhouse Challenge reporting.	2007/2008	Yes
Participation by DIA and other Airport based business employees in 'Ride 2 Work Day'.	2007/2008	Additional achievement
Development of an Air Emissions Inventory report for trend analysis and to monitor greenhouse gas emissions.	2007/2008	Additional achievement
Extension of the Control Burn Notification to include neighbouring land holders.	2007/2008	Yes

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Manage and reduce emissions where practicable	• Develop National Gas and Energy Reporting System for corporate greenhouse emissions monitoring. • Complete Greenhouse Challenge Plus Program. • Continue to participate in and promote 'National Ride 2 Work Day'. • Continue air quality monitoring and reporting as required.	By 2010 By 2012 Annually Ongoing

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SECTION 9

Noise

KEY OBJECTIVE

- Ensure noise and vibration levels from ground running aircraft and other Airport operations are compliant with relevant noise exposure standards.

SECTION 9

Noise

BACKGROUND

Overview

DIA has not experienced any serious noise related incidents since the inception of the 1999 AES and noise complaints generally arise as a result of military operations.

An Australian Noise Exposure Forecast contour study was commissioned for the current Master Plan and includes noise generated by aircraft movement. Forecast figures examined how noise levels may increase within the next five years given projected aircraft movement frequency and ground based operational activity. The current study indicates that noise is unlikely to become a significant issue within the medium term future.

Pollution or noise generated by aircraft during flight, landing, taking off or taxiing is regulated under the *Air Navigation (Aircraft Engine Emissions) Regulations 1998* and the *Air Navigation (Aircraft Noise) Regulations 1984* and is not the responsibility of the airport lessee company.

Legislative Requirements and Guidelines

Applicable acts and guidelines include:

- *Airports Act 1996*
- *Airports (Environment Protection) Regulations 1997*
- *Motor Vehicles Amendment Act 2003*

SOURCES OF ENVIRONMENTAL IMPACT

- Aircraft and vehicle movement around the airport
- Aircraft and vehicle maintenance
- Pavement maintenance
- Ground based operational activity

CURRENT MANAGEMENT PRACTICES

Any noise complaints that are made to DIA are investigated and if required, noise monitoring is undertaken. Complaints are responded to promptly. All noise complaints made are reported to the AEO, as soon as practicable after the complaint is made and are included in the AER.

DIA has in place an Engine Ground Running Management Plan as a guide for the positioning of aircraft to reduce the impact of aircraft noise on the surrounding areas.

DIA evaluates the potential for noise generated by Airport operators to impact upon the sustainable operation of new developments, particularly residential developments.

RECENT ACHIEVEMENTS

Actions which have progressed noise management by DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

Refer to table below.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
No complaints in relation to engine ground noise or noise from other Airport operations.	2007/2008	Yes
Installation of new chillers to reduce plant noise.	2005/2006	Yes

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Minimise complaints regarding ground running noise at the Airport	• Timely investigation, response and reporting on any complaints received. • Continue noise monitoring program. • Review ground running procedures.	Ongoing Ongoing 2010

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SECTION 10

Hazardous Materials

10

KEY OBJECTIVES

- Minimise the use of hazardous materials at the Airport.
- Manage hazardous material storage, use and disposal in a manner that minimises risk to the surrounding environment.

SECTION 10

Hazardous Materials

BACKGROUND

Definition

DITRDLG defines hazardous materials as including:

- Various types of explosives;
- Flammable gases and liquids;
- Toxic substances; and
- Oxidising agents.

Overview

At the Airport hazardous materials other than fuels and oils, are rarely used in quantities that pose a significant threat to the environment. Stringent regulations apply to those that are used under occupational health and safety. The storage and handling of hazardous materials is addressed under NT Occupational Health and Safety Legislation.

Legislative Requirements and Guidelines

Applicable acts and guidelines include:

- *Dangerous Goods Amendment Act 2003*
- *Dangerous Goods (Road and Rail Transport) Act 2003*
- *Waste Management and Pollution Control Act 1998*

SOURCES OF ENVIRONMENTAL IMPACT

Environmental impact may be caused by the following incidents:

- Accidental hazardous material leaks or spills; and
- Hazardous material leakage or failure of the container holding a hazardous material and/or a containment device.

The types of hazardous materials stored on site include, but are not limited to:

- Fuels, oils and grease;
- Herbicides;
- Batteries and battery electrolytes;
- Paint and paint stripping products;
- Cleaning chemicals including acids and solvents;
- Waste water containing acid and heavy metals from paint stripping and aircraft maintenance; and
- Asbestos

CURRENT MANAGEMENT PRACTICES

Any waste water containing hazardous materials is treated on-site using pollution control equipment and treated waste water is discharged to sewerage.

All tenants are required to maintain and refer to Material Safety Data Sheets for chemicals they use on site. In addition, audits of all chemical storage arrangements are conducted to ensure operators and tenants comply with storage standards. Any issues regarding hazardous materials identified in these audits are discussed with the operator. DIA has also implemented a Self Auditing Program for airport operators and tenants to review chemical storage arrangements and maintain awareness of the appropriate management of hazardous materials. The results of these audits are provided to the AEO for review.

DIA also maintains a hazardous materials register (Chemalert) for its own lease holdings, which covers hazardous materials and products stored.

Any incidents involving the spill or leakage of hazardous materials are required to be reported in accordance with DIA's Spill Response Procedures.

RECENT ACHIEVEMENTS

Actions which have progressed the management of hazardous materials by DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
No major spills during the 2004 AES period.	04/09	Additional achievement
DIA achieved a reduction in the occurrence of minor spills – from 33 to 19 in the annual reporting year.	07/08	Additional achievement
Development and roll-out of a tenant Self-Auditing Program.	06/07	Yes
Development of educational materials for tenants regarding spill management and training, as part of the EMP development program.	06/07	Yes

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Hazardous material reduction and monitoring	• Minimise the use of hazardous materials. • Continue the hazardous material storage inspection program. • Ongoing development of Airport Chemical Storage Register.	Ongoing Ongoing Ongoing
Spills and emergency response	• Review, update and disseminate Spill Response Procedures.	By 2010 and ongoing

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SECTION 11

Waste

11

KEY OBJECTIVES

- Minimise waste production from all Airport operations and recycle waste products wherever practical.
- Ensure wastes are properly stored, transported and disposed of.

SECTION 11

Waste

BACKGROUND

Definition

Waste, in accordance with the Regulations, includes, whether or not it has a value or use:
(a) refuse in any form; and
(b) discarded or disused plant, equipment or materials; and
(c) an industrial by-product.

Quarantine Waste, is any material foreign to a region or country that is capable of being a host to insects, helminths or other parasites, diseases (e.g. bacteria, viruses, fungi, prions, etc), weeds, or any other organisms that are not existent, or prevalent, in that region or country, and that are capable of being a threat to the health and well being of indigenous or local ecosystems, people, or local plant and/or animal industries.

Overview

Waste generated at the Airport can be defined as either solid, liquid, recyclable, or hazardous.

- Solid waste includes office waste, food and packaging, green waste, construction and demolition waste;
- Liquid waste includes sewage effluent and contaminated runoff water;
- Recyclable materials includes paper, glass, plastic, oil, batteries, tyres; and
- Hazardous waste includes asbestos, chemical storage containers, used chemicals.

Waste at the Airport is collected and handled by appropriately licensed local waste contractors. General wastes are disposed of at the Darwin City Council controlled Shoal Bay Waste Disposal Site.

Quarantine waste is incinerated at the Darwin Port Corporation.

Legislative Requirements and Guidelines

Applicable acts and guidelines include:

- National Environment Protection Measure Movement of Controlled Waste between States and Territories
- *Waste Management and Pollution Control Act 2007*
- *NT Waste Management and Pollution Control Strategy 1995*

SOURCES OF ENVIRONMENTAL IMPACT

Environmental impacts at the Airport, attributable to waste include:

- Incorrect disposal of solid waste by Airport operators, contractors, tenants and users;
- Inadequate/inappropriate storage of waste oils, chemicals and other hazardous waste materials;
- Waste water runoff from Airport operations such as paint stripping, fire training exercises, aircraft and vehicle washdown;
- Spills and incorrect storage and disposal of sewage;
- Illegal dumping of waste on Airport land; and
- Wind borne litter

CURRENT MANAGEMENT PRACTICES

Illegal dumping of waste on airport lands has been an issue in the past. In particular, garden waste has been dumped along roads adjacent to the Airport and litter along the length of Rapid Creek. The erection of signs and bins in areas of high public usage has resulted in a decrease in illegal dumping. DIA is also working with Larrakia Nation and other community groups, such as Landcare, to clean up litter in and around the Rapid Creek area.

DIA participates in the National Clean Up Australia Day event held annually across Australia. The focus of the cleanup is on the high public usage areas along the Rapid Creek riparian zone and on Airport land. Recycling is also implemented at the Airport, in accordance with the capabilities of local recycling facilities.

The Airport is connected to the Darwin town sewer and only two septic systems remain on the airport. Options for the decommissioning of the septics and connection to reticulated town sewer will be considered within this Strategy period.

RECENT ACHIEVEMENTS

Actions which have progressed waste management by DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
Implementation of annual waste review incorporating monitoring of the types and volumes of waste generated at the Airport.	2005/2006	Yes
Training conducted on recycling and collection ideas by the Ground Safety and Environment Committee.	2006/2007	Additional achievement
Reuse of green waste implemented as mulch in landscaping and revegetation areas.	2007/2008	Additional achievement

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Waste reduction and monitoring	Develop a Waste Reduction Plan to identify and implement opportunities to reduce waste generation.	By 2010
Reuse and recycle	Develop and implement procedures encouraging contractors to segregate and recycle construction waste wherever practicable.	By 2011
Resource use	Identify opportunities to purchase environmentally responsible products.	By 2011 and ongoing
Awareness	Participate in and promote Clean Up Australia Day.	Ongoing

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SECTION 12

Resource Use

12

KEY OBJECTIVES

- Minimise the use of non-renewable resources.
- Increase efficiency in the use of natural resources, particularly energy and potable water.
- Use renewable energy sources wherever practicable.

SECTION 12

Resource Use

BACKGROUND

Definition

Resource use is considered to be the use of energy, including electricity, fossil fuels, and potable water. Inefficient or excessive use of these resources contributes to some of the world's most pressing environmental problems, occurring on a national and international scale.

Overview

DIA requires significant amounts of energy in its day to day operations and energy costs are a major component of Airport expenses. DIA is connected to the power grid of Darwin City, supplied by natural gas fired power plants. On site emergency power is provided via diesel generators.

DIA is currently supplied with potable water from Darwin's reticulated town water system.

Legislative Requirements and Guidelines

Applicable acts and guidelines include:

- *Airports (Environment Protection) Regulations 1997*
- *National Greenhouse and Energy Reporting Act 2007*

SOURCES OF ENVIRONMENTAL IMPACT

The environmental impact of energy and water consumption may not be immediately evident but the misuse of both can lead to significant consequences on a local and global scale. The main sources of energy consumption at DIA include:

- Aircraft movement;
- Runway lighting;
- Lighting, air-conditioning, power use and conveyor belts within the terminal building and other buildings occupied by DIA staff, tenants and contractors; and
- Airside and landside vehicle movement including security patrols, airport shuttle services and haulage vehicles.

Airport activities using significant volumes of water include:

- Aircraft and vehicle washdown;
- Fire training activities;
- Water usage by airport customers; and
- Garden maintenance.

CURRENT MANAGEMENT PRACTICES

DIA has installed power factor correction equipment in the Airport's power distribution network, which reduces the amount of power used to run facilities. A number of direct actions have been implemented including a review of airfield lighting and plant and equipment. Energy auditing is undertaken monthly to track DIA's progress in improving energy efficiency and a new Building Management System will be installed to further manage energy use at the Airport.

DIA's participation in the Greenhouse Challenge Program ensures greenhouse gas emissions due to energy consumption are regularly evaluated and reduced where possible.

DIA is committed to reducing water usage on Airport and has commissioned a study to identify methods of improving water efficiency. Landscape gardening policies encourage the use of local native species, with low water requirements.

RECENT ACHIEVEMENTS

Actions which have progressed resource management at DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
DIA's Sustainability Design Criteria were refined to ensure sustainable design initiatives are considered in all projects and developments.	2007/2008	Additional achievement
Development of an Electrical Metering Strategy.	2007/2008	Yes
Commissioning of a Water Conservation Report.	2007/2008	Additional achievement
DIA ran a 'Clean Green Airport' competition to encourage staff to contribute ideas to make the Airport cleaner, greener and more efficient. The winning entry reduced the impact of fluorescent light tube disposal at the Airport.	2007/2008	Additional achievement
Development of Ecologically Sustainable Development Guidelines.	2006/2007	Yes

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Energy conservation	• Install a CO_2 monitoring system that will allow the terminal air conditioning system to respond to occupancy levels. • Investigate further electricity metering of the Airport site. • Development of an Energy Efficiency Plan to: – strategically plan the reduction of energy usage in DIA managed and operational areas – maximise energy efficiencies across the lease holding.	By 2010 Ongoing By 2011
Water conservation	• Development of a Water Efficiency Plan to strategically plan the use of recycled/grey water and reduce consumption of potable water. • Continue implementation of the Landscaping Master Plan to ensure native species are used across the lease holding.	By 2011 Ongoing
Reduce resource use	• Continue investigations into the feasibility of alternative sources of energy including natural gas, solar/wind energy, stormwater capture.	Ongoing

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SECTION 13

Cultural Heritage

13

KEY OBJECTIVES

- Preserve cultural heritage sites located at the Airport.
- Formulate and implement appropriate management procedures in the event new cultural heritage sites are identified.

SECTION 13

Cultural Heritage

BACKGROUND

Overview

Indigenous Cultural Heritage

DIA has been advised by the Aboriginal Areas Protection Authority that no 'recorded' Aboriginal Sacred Sites appear on their register under the *Aboriginal Sacred Sites Act 1989*. DIA has made a formal application to the Aboriginal Areas Protection Authority to conduct an investigation into the potential for any Sacred Sites existing within the zones of potential development.

European Heritage

The land on which the Airport is located was bombed during World War II and the majority of infrastructure was devastated during Cyclone Tracy in December 1974. The majority of the old buildings relating to the historical use of the Airport are located within the RAAF lease area. No significant heritage sites have been identified within the DIA lease area.

Legislative Requirements and Guidelines

- *Aboriginal Sacred Sites Act 1989*
- *Northern Territory Aboriginal Land Act 1980*
- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*
- *Heritage Conservation Act 1991*
- *Australian Heritage Commission Act 1975*

SOURCES OF ENVIRONMENTAL IMPACT

While no known sites exist at the Airport, there is potential for cultural heritage artefacts to be unearthed. Potential impacts may occur to any such artefact as a result of:

- Disturbance of sites during development, landscaping or fire activities;
- Failure to identify sites;
- Accidental or malicious disturbance of sites; and
- Non-compliance with development protocols.

CURRENT MANAGEMENT PRACTICES

During construction or development on Airport land, all contractors are required to be aware of their cultural and heritage obligations under the Site Rules Document. Work will be stopped immediately if any suspected culturally significant/ heritage artefacts are found, and the relevant authorities informed.

DIA strives to foster good working relationships with the Larrakia Nation and undertakes joint projects in regards to the cultural protection of Rapid Creek.

RECENT ACHIEVEMENTS

Actions which have progressed cultural heritage management by DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted. *Refer to table below.*

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
AAPA certificate was obtained under the NT Aboriginal Sacred Sites Amendment Act 2002.	2007/2008	Yes
Review of DIA's heritage requirements under the EPBC Act.	2005/2006	Yes
Development of a heritage component for DIA's 'Site Rules' documentation.	2005/2006	Yes
Larrakia People and their language are acknowledged in garden Interpretative Signs and 'Welcome to Country' signage around the airport.	2004/2005-2008/2009	Additional achievement

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Cultural heritage awareness	• Ensure all contractors and tenants understand their obligations under the 'Site Rules' documentation.	Ongoing
Foster relationships with relevant community and heritage organisations	• Continue to work with Larrakia Nation in the management of Rapid Creek and other DIA projects. • Work cooperatively with DoD and Larrakia Nation in the event cultural heritage sites or artefacts are suspected.	Ongoing Ongoing

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SECTION 14

Development

14

KEY OBJECTIVE

- Integrate environmental considerations into the development of facilities and services and seek to minimise their impact on the natural environment.

SECTION 14

Development

BACKGROUND

Overview

Development and expansion is necessary for the Airport to be able to respond to the increasing demands of travellers, the aviation industry and Darwin. DIA understands the importance of achieving a balance between development and the maintenance and enhancement of environment values.

Legislative Requirements and Guidelines

- *Airports Act 1996*
- *Airports (Environment Protection) Regulations 1997*
- *Airports (Building Control) Regulations 1996*

SOURCES OF ENVIRONMENTAL IMPACT

Development activities have the potential to impact upon each of the different environmental attributes addressed throughout this AES. Broadly, the likely sources of environmental impact associated with each attribute during development include:

- **Surface Water, Groundwater and Land**:
  - alterations to the water table through excavation or fill/ material placement
  - contamination by hazardous material spills or inappropriate treatment of construction water prior to release
  - inappropriate sediment and erosion control structures resulting in increased sediment loads in water courses;
  - downstream impacts off airport from airport stormwater management.
- **Waste** – increase in volume of waste generated from increased activity
- **Flora** – vegetation clearing, introduction of disease and weeds through inadequate management of tyres, equipment and footwear;
- **Fauna** – accidental chemical spills, death or injury by machinery and habitat loss through vegetation clearing.
- **Noise** – produced by mobile plant and their reverse warnings, power tools, site clearing and earthworks, and an increase in air traffic;
- **Air Quality** – the movement of mobile plant on disturbed ground has a high potential to create dust and exhaust fumes;
- **Cultural Heritage** – inadequate awareness of the potential for cultural heritage sites and artefacts could lead to the destruction or damage of known cultural heritage sites; and
- **Resource Use** – increase demands for resources e.g energy, water and construction materials

CURRENT MANAGEMENT PRACTICES

DIA has developed a range of initiatives aimed at minimising the impacts of development:

- Contractors performing major works or those with potential to cause environmental harm are required to prepare a Construction EMP and are required to go through the development approval process;
- Potential developments will be assessed against data entered into the ESR to determine potential impacts upon sensitive areas;
- In the event that major developments are proposed in areas of intact native habitat on Airport land, a flora and fauna survey will be conducted before construction begins and management options assessed; and
- Work on developments will be stopped immediately if suspected culturally significant/heritage artefacts are found and the relevant authority informed.

RECENT ACHIEVEMENTS

Actions which have progressed the management of development projects by DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
Environmental Impact Assessments were completed for two proposed development sites – Home and Lifestyle Super Centre and the Terminal Expansion Project.	2007/2008	Additional achievement
Pioneer Road Services won a Civil Contractors Federation Earth Award for their work on the work on the runway re-sheeting project.	2007/2008	Additional achievement

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Implement relevant DIA plans and strategies to minimise the impact of development projects across the Airport site.	• Ensure DIA operators, tenants and contractors are appropriately inducted and trained. • Maintain and update all relevant plans and strategies to ensure adherence to best practice by DIA operators, tenants and contractors. • Ensure all relevant plans and strategies are available to DIA operators, tenants and contractors. • Ensure new developments incorporate sustainability design, wherever feasible. • Encourage tenants to use energy efficient building design and use of efficient technologies through the building and development approval process.	Ongoing Ongoing Ongoing 2010, Ongoing Ongoing

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SECTION 15

Tenants

15

KEY OBJECTIVE

- Work in partnership with DIA tenants and operators to ensure best environmental practice continues to be implemented in all Airport operations.

SECTION 15

Tenants

BACKGROUND

Currently there are fifty six tenants holding leases with DIA. These leases vary from a few months to 45 years. The nature of tenant activities carried out varies widely but most relate to airport functions such as freight handling, car rental, aircraft maintenance, charters and retail concessionaires.

Legislative Requirements and Guidelines

- *Airports Act 1996*
- *Airport (Environment Protection) Regulations 1997*

SOURCES OF ENVIRONMENTAL IMPACT

The environmental impact arising from tenants depends on the nature of the tenancy and the activities, however the following are examples of activities that cause impact to the environment:

- resource usage;
- aircraft and vehicle washdown
- waster production
- accidental hazardous materials leaks and spills

CURRENT MANAGEMENT PRACTICES

The ALC and all operators of any undertakings at the Airport are legally required to take all practicable steps to meet the requirements outlined in the AES, *the Airports Act 1996* and *the Airport (Environment Protection Regulations 1997*. This includes any airport based business, tenants and contractors. Environmental management is ultimately the responsibility of all staff, tenants and contractors at the Airport.

Tenants are required to report to DIA in relation to their environmental obligations. DIA in turn submits this information on an operational level to the AEO and submits this information to the DITRDLG in the Annual Environment report.

Awareness raising and input from DIA tenants is conducted through the development of the Tenant Environmental Management handbooks and audits.

Airport tenants are also invited to join the local committee reviewing the DIA BAHMS. This provides tenants with another forum to view DIA's ongoing commitment to environmental management and allows for tenants to put forward their own views and ideas.

The Ramp Safety Committee meets regularly and provides a forum for pertinent or current environmental issues. Invited representatives include airlines, GA operators, fuel farm operators, Airservices Australia.

RECENT ACHIEVEMENTS

Actions which have progressed tenant management by DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

Refer to table below.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
Tenant Environmental Management Handbook made available on DIA website.	2007/2008	Yes
Development of 'Touchdown' – a DIA newsletter for tenants and staff used as a forum to educate and communicate with tenants.	2007/2008	Additional achievement
Development of a web based tenant EMP package to enable self-auditing of operations.	2006/2007	Yes

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Continual improvement in communication with and training of DIA tenants	• Undertake Environmental Awareness Forums to provide a forum for open communication between DIA operators and tenants.	Annually
	• Encourage implementation of tenant EMP and conduct training when necessary.	Ongoing
	• Regularly update and disseminate *Touchdown*.	Ongoing

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SECTION 16

Community

16

KEY OBJECTIVE

- Maintain and increase the involvement of Darwin community groups in the development and implementation of local environmental initiatives through the promotion of positive relationships.

SECTION 16

Community

BACKGROUND

DIA is committed to maintaining strong links with the Darwin community and considers this integral in developing and communicating their environmental objectives and values. These links also provide an independent perspective on how the public views DIA achievements and management practices.

DIA provides the NT community with a vital health and social link, facilitating access to the rest of Australia and providing a base for essential services.

DIA fosters ongoing, positive working relationships with Airport operators and tenants to ensure the objectives of the AES are met.

CURRENT MANAGEMENT PRACTICES

DIA maintains support to the community through provision of sponsorship to a number of local clubs and sporting groups as well as remaining an active member of local industry and environmental organisations.

RECENT ACHIEVEMENTS

Actions which have progressed community engagement at DIA in the period 2004 – 2009 are detailed in the following table. Those which realised targets from the 2004 AES are noted.

Refer to table below.

ACHIEVEMENT	DATE ACHIEVED	2004 AES TARGET
Landscaping at the Airport was featured on ABC Television *Gardening Australia* program, showcasing DIA's native vegetation landscaping works.	2007/2008	Additional achievement
Involvement in Business Clean Up Day and Clean Up Australia Day.	2006/2007, Ongoing	Yes
Finalised the Rapid Creek Public Access Project in partnership with Larrakia Nation and Green Corps.	2005/2006	Yes

FIVE YEAR ACTION PLAN

HIGH LEVEL ACTION	SPECIFIC TARGET TO BE ACHIEVED	WHEN
Build partnerships	• Ongoing liaison with local community/residents groups, Larrakia Nation and local Landcare. • Continued involvement in Clean Up Australia Day and Business Clean Up Day.	Ongoing Annually
Support environmental activities and causes	• Include environmental activities in the Corporate Giving Program, DIA's charitable donation program.	Ongoing

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SECTION 17

Acronyms and Glossary

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SECTION 17

Acronyms and Glossary

ACRONYMS

ABC	Airport Building Controller
AEO	Airport Environment Officer
ADG	Airport Development Group Pty Ltd
AES	Airport Environment Strategy
AER	Airport Environment Report
ALC	Airport Lessee Company
AQIS	Australian Quarantine Inspection Service
BAHMS	Bird and Animal Hazard Management System
CASA	Civil Aviation Safety Authority
CEMP	Construction Environment Management Plan
DIA	Darwin International Airport Pty Ltd
DITRDLG	Department of Infrastructure, Transport, Regional Development, and Local Government.
DoD	Department of Defence
EMP	Environmental Management Plan
EMS	Environmental Management System
ESR	Environmental Site Register
GA	General Aviation
GSP	Gross State Product
NT	Northern Territory
RAAF	Royal Australian Air Force
VOCs	Volatile Organic Compounds

GLOSSARY

PHRASE	DESCRIPTION
The Act	*Airports Act 1996*
Darwin International Airport	The area of Darwin International Airport leased by Northern Territory Airports Pty Ltd leased from the Commonwealth
Airport Building Controller	Person appointed by the Commonwealth (DITRDLG) to oversee building activity at Darwin International Airport.
Airport Environment Officer	Person appointed by the Commonwealth (DITRDLG) to regulate the management of environmental issues at Darwin International Airport.
Airport Operators and Tenants	The airport lessee company (NTAPL) and all sublessees and licensees, including contractors, undertaking any activity at Darwin International Airport.
Environmental Attribute	A component, function or process of Darwin International Airport's activities that may impact on the environment.
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from activities at Darwin International Airport.
Environmental Management System	The system which defines the processes and practices Darwin International Airport must implement to manage its environmental aspects. It facilitates the ongoing development, implementation, review and improvement of those procedures undertaken to meet the environmental goals of the organisation and the Commonwealth.
Environmental Objective	Defines the goal or intent for management of the Airport environment and may be quantified by the achievement of Environmental Targets.
Environmental Target	A specific aim or goal, defining a required outcome, to meet a specified Environmental Objective.
Northern Territory Airports Pty Ltd	The airport lessee company.
Ramp Safety Committee	Airport operator stakeholder group, established to address ground safety and environment issues.
The Regulations	*Airports (Environment Protection) Regulations 1997*

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SECTION 18

Appendices

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- APPENDIX 1: Airport Environment Strategy – Legislative Requirements
- APPENDIX 2: Flora and Fauna at the Darwin International Airport Site

SECTION 18

Appendices

APPENDIX 1

Airport Environment Strategy – Legislative Requirements

This AES has been prepared in accordance with the *Airports Act 1996* and the *Airports (Environment Protection) Regulations 1997* which specify elements that are to be addressed within an AES. The table below provides a reference guide to how each legislative requirement has been addressed within this AES.

AIRPORTS ACT 1996

LEGISLATIVE REQUIREMENT	AIRPORT ENVIRONMENT STRATEGY REFERENCE
DIVISION 2 SECTION 116	
(2) The Airport Environment Strategy must specify:	
(a) The airport-lessee company's objectives for the environmental management of the Darwin International Airport	Sections 3 - 14
(b) The areas if any which are identified as environmentally significant	Section 7: Biodiversity and Conservation Management
(c) The sources of environmental impact associated with airport operations	Sections 3 - 14
(d) The studies, reviews and monitoring to be carried out by DIA	Section 3: Environmental Management Framework
(e) Time frames for completing those studies and reviews and for reporting on that monitoring	Section 3: Environmental Management Framework
(f) The specific measures to be carried out by DIA for the purpose of preventing, controlling or reducing the environmental impact associated with airport operations	Sections 3 - 14
(g) The time frames for completion of those specific measures	Sections 3 - 14
(h Details of the consultations undertaken in preparing the strategy.	Section: Airports Legislative Framework

AIRPORTS (ENVIRONMENT PROTECTION) REGULATIONS 1997

LEGISLATIVE REQUIREMENT	AIRPORT ENVIRONMENT STRATEGY REFERENCE
DIVISION 2	
3.03 Sites of indigenous significance	Section 3: Environmental Management Framework
3.04 Operations other than airport operations	Sections 3 - 14
3.05 Environment management training	Section 3: Environmental Management Framework
DIVISION 3	
3.06 Management of Airport Site:	
(a) Continuous improvement in the environmental consequences of activities at the airport	Sections 3 - 14
(b) Progressive reduction in extant pollution at the airport	Section 5: Water Section 6: Land Section 8: Air Quality and Emissions Section 10: Hazardous Materials
(c) Development and adoption of a comprehensive environmental management system for Darwin International Airport that maintains consistency with relevant Australian and international standards	Section 3: Environmental Management Framework
(d) Identification, and conservation, by the airport-lessee company and other operators of undertakings at the airport, of objects and matters at Darwin International Airport that have natural, indigenous or heritage value	Section 7: Biodiversity Section 13: Cultural Heritage
(e) Involvement of the local community and airport users in development of any future strategy	Section 2: Airports Legislative Framework
(f) Dissemination of the strategy to sub-lessees, licensees, other airport users and the local community.	Section 2: Airports Legislative Framework
3.07 Identification of environmentally significant areas of airport site	Section 7: Biodiversity
3.08 Identification of sources of environmental impact at airport:	
(a) The quality of air at Darwin International Airport site and how it affects the air shed	Section 8: Air Quality and Emissions
(b) Water quality including groundwater, estuarine waters and marine waters	Section 5: Water
(c) Soil quality, already contaminated land	Section 6: Land
(d) Release into the air of substances that deplete stratospheric ozone	Section 12: Resource Use
(e) Generation and handling of hazardous waste and any other kind of waste	Section 12: Resource Use Section 10: Hazardous Materials
(f) Usage of natural resources	Section 12: Resource Use
(g) Usage of energy the production of which generates emissions of gases known as 'greenhouse gases'	Section 12: Resource Use Section 8: Air Quality and Emissions
(h) Generation of noise	Section 9: Noise
3.09 Proposed studies, reviews and monitoring – must address:	
(a) The matters mentioned in regulations 3.03, 3.07 and 3.08	Sections 3 - 14
(b) The scope, identified by the airport-lessee company, for conservation of objects and matters at Darwin International Airport hat have natural indigenous or heritage value	Section 13: Cultural Heritage
(c) The approaches and measures identified by the NTAPL as its preferred conservation approaches and measures	Sections 3 - 14
(d) The professional qualifications that must be held by the person engaged in carrying out the monitoring	Section 3: Environmental Management Framework
(e) The proposed system of testing, measuring and sampling to be carried out for possible, or suspected pollution or excessive noise	Section 3: Environmental Management Framework
(f) The proposed frequency of routine reporting of monitoring results to the Darwin International Airport Environment Officer (if any) for the airport, or to the Secretary.	Section 3: Environmental Management Framework
3.10 Proposed measures for preventing, controlling or reducing environmental impact:	
(a) The matters mentioned in regulations 3.06, 3.07 and 3.08	Sections 3 - 14
(b) The means by which it proposes to achieve the cooperation of other operators of undertakings at Darwin International Airport in carrying out those plans.	Section 3: Environmental Management Framework
DIVISION 4	
3.11 How Darwin International Airport will ensure that every person who is a sublessee or licensee of NTAPL will be made aware of the final environment strategy.	Section 3: Environmental Management Framework

APPENDIX 2

Flora and Fauna at the Darwin International Airport Site

FLORA SPECIES RECORDED ON SITE

SCIENTIFIC NAME	COMMON NAME
Acacia auriculiformis	Black Wattle
Acacia dunnii	Elephant Ear Wattle
Acacia holosericea	
Acacia lamprocarpa	
Acacia latescens	
Acacia mimula	
Alphitonia excelsa	Red Ash
Alstonia actinophylla	Milkwood
Ampelocissus acetosa	
Amyema sanguinea	Mistletoe
*Andropogon gayanus**	
Aristida exserta	
Axonopus compressus	
Barringtonia acutangula	
Blechnum indicum	
Brachychiton diversifolius	Kurrajong
Brachychiton megaphyllus	
Breynia cernua	
Bridelia tomentosa	
Buchanania obovata	Green Plum
*Calopogonium mucunoides**	Calopo
Calytrix exstipulata	Turkey Bush
Carallia brachiata	
Carpentaria acuminata	
*Caryota mitis**	
Cassytha filiformis	
Cenchrus elymoides	
Clerodendrum floribundum	
Cochlospermum fraseri	Kapok Bush
Corymbia bella	
Corymbia confertiflora	
*Crotalaria goreensis**	Gambia Pea
Crotalaria montana	
Croton arnhemicus	
Cycas armstrongii	
Denhamia obscura	
*Desmodium pullenii**	Beggarweed
Dicranopteris linearis	
Dioscorea bulbifera	Round Yam
Dioscorea transversa	Native Yam
Ectrosia leporina	
Erythrophleum chlorostachys	
Eucalyptus alba var. australasica	
Eucalyptus miniata	Woolybutt
Eucalyptus tetrodonta	Stringybark
*Eulophia graminea**	
Exocarpos latifolius	
Ficus aculeata	
Ficus hispida	
Ficus scobina	Sandpaper Fig
Flueggea virosa	
Gardenia megasperma	
Geodorum neocalidonicum	
Gomphrena canescens	
Gymnanthera oblonga	Harpoon Bud
Heteropogon contortus	
Heteropogon triticeus	
Hibbertia tasmanica	
Hibiscus meraukensis	Bush Hibiscus
*Hyptis suaveolens**	Hyptis
Imperata cylindrica	
Ipomoea eriocarpa	Morning Glory
*Leonotis nepetifolia**	Lions Tail
*Leucaena leucocephala**	
Litsea glutinosa	
Livistona humilis	
Lophostemon lactifluus	
Lygodium microphyllum	
Maranthes corymbosa	
Melaleuca leucadendra	
Melicope elleryana	
*Milinis repens**	Red Natel Grass
*Mitracarpus hirtus**	
Mnesithea rottboellioides	
Pandanus spiralis	
*Passiflora foetida**	
Patersonia macrantha	
Pennisetum pedicellatum subsp. indeterminate	
*Pennisetum polystachion**	Mission Grass
Persoonia falcata	
Petalosigma quadriloculare	
Petalostigma pubescens	Bitter Bark
Philydrum lanuginosum	
Pittosporum sp	Whitewood
Planchonella pohlmaniana	
Planchonia careya	
Pleaurocarpaea denticulata	
*Rottboellia cochinchinensis**	
Sarga intrans	
Sehima nervosum	
Setaria apiculata	
Smilax australis	
*Spermacoce remota**	
*Sporobolus sp.**	
*Stachytarpheta jamaicensis**	Snakeweed
*Stachytarpheta sp.**	
Sterculia quadrifida	Peanut Tree
*Stylosanthes viscosa**	

Syzygium angophoroides	
Syzygium eucalyptoides	
Syzygium suborbiculare	Red Bush Apple
Tabernaemontana orientalis	
Tacca leontopetaloides	
Terminalia ferdinandiana	Billy Goat Plum
Terminalia grandiflora	
Tinospora smilacina	
Trema aspera	
Trichodesma zeylanicum	
Uraria lagopodioides	
*Urochloa humidicola**	
Vigna vexillata	
Xanthostemon paradoxus	

FAUNA SPECIES RECORDED ON SITE

VERTEBRATE FAUNA - BIRDS	
COMMON NAME	SCIENTIFIC NAME
Australasian Figbird	*Sphecotheres viellotí*
Australasian Pipit	*Anthus novaeseelandiae*
Australian Hobby	*Falco longipennis*
Australian Pratincole	*Stiltia isabella*
Azure Kingfisher	*Ceyx azurea*
Bar-breasted Honeyeater	*Ramsayornis fasciatus*
Barking Owl	*Ninox connivens*
Bar-shouldered Dove	*Geopelia humeralis*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
Blue-faced Honeyeater	*Entomyzon cyanotis*
Blue-winged Kookaburra	*Dacelo leachii*
Brahminy Kite	*Haliastur indus*
Brown Goshawk	*Accipiter hiogaster*
Brown Honeyeater	*Lichmera indistincta*
Brown Quail	*Coturnix ypsilophora*
Brush Cuckoo	*Cacomantis variolosus*
Bush Stone-curlew	*Burhinus grallarius*
Chestnut-breasted Mannikin	*Lonchura castaneothorax*
Collared Sparrowhawk	*Accipter cirrocephalus*
Crimson Finch	*Neochmia phaeton*
Diamond Dove	*Geopelia cuneata*
Dollarbird	*Eurystomus orientalis*
Double-barred Finch	*Taeniopygia bichenovii*
Dusky Honeyeater	*Myzomela obscura*
Eastern Koel	*Eudynamys orientalis*
Forest Kingfisher	*Todiramphus macleayii*
Galah	*Eolophus roseicapillus*
Glossy Ibis	*Plegadis falcinellus*
Golden-headed Cisticola	*Cisticola exilis*
Golden-headed Cisticola	*Cisticola exilis*
Great Cormorant	*Phalacrocorax carbo*
Green-backed Gerygone	*Gerygone chloronotus*
Grey Whistler	*Pachycephala simplex*
Grey-crowned Babbler	*Pomatostomus temporalis*
Horsfield's Bushlark	*Mirafra javanica*
Intermediate Egret	*Ardea intermedia*
Leaden Flycatcher	*Myiagra rubecula*
Lemon-bellied Flycatcher	*Microeca flavigaster*
Little Bronze-Cuckoo	*Chalcites minutillus*
Little Corella	*Cacatua sanguinea*
Little Curlew	*Numenius minutus*
Little Friarbird	*Philemon citreogularis*
Little Pied Cormorant	*Phalacrocora melanoleucos*
Long-tailed Finch	*Poephila acuticauda*
Magpie Goose	*Anseranas semipalmata*
Magpie-lark	*Grallina cyanoleuca*
Masked Lapwing	*Vanellus miles*
Mistletoebird	*Dicaeum hirundinaceum*
Nankeen Kestrel	*Falco cenchroides*
Nankeen Night-Heron	*Nycticora caledonicus*
Northern Fantail	*Rhipidura rufiventris*
Orange-footed Scrubfowl	*Megapodius reinwardt*
Oriental Pratincole	*Glareola maldivarum*
Pallid Cuckoo	*Cacomantis pallidus*
Peaceful Dove	*Geopelia placida*
Pheasant Coucal	*Centropus phasianinus*
Pied Butcherbird	*Cracticus nigrogularis*
Pied Imperial Pigeon	*Ducula bicolor*
Radjah Shelduck	*Tadorna radjah*
Rainbow Bee-eater	*Merops ornatus*
Rainbow Lorikeet	*Trichoglossus haematodus*
Red-backed Fairy-wren	*Malurus melanocephalus*
Red-tailed Black-cockatoo	*Calyptorhynchus banksii*
Red-winged Parrot	*Aprosmictus erythropterus*
Restless Flycatcher	*Myiagra inquieta*
Rufous-banded Honeyeater	*Conopophila albogularis*
Sacred Kingfisher	*Todiramphus sanctus*
Shining Flycatcher	*Myiagra alecto*
Silver-backed Butcherbird	*Cracticus argenteus*
Silver-crowned Friarbird	*Philemon argenticeps*
Spangled Drongo	*Dicrurus bracteatus*
Straw-necked Ibis	*Threskiornis spinicollis*
Striated Pardalote	*Pardalotus striatus*
Sulphur-crested Cockatoo	*Cacatua galerita*
Tawny Frogmouth	*Podargus strigoides*
Torresian Crow	*Corvus orru*
Varied Sittella	*Daphoenositta chrysoptera*
Varied Triller	*Lalage leucomela*
Wandering Whistling-Duck	*Dendrocygna arcuata*
Whistling Kite	*Haliastur sphenurus*
White-bellied Cuckoo-shrike	*Coracina papuensis*
White-bellied Sea-eagle	*Haliaeetus leucogaster*
White-gaped Honeyeater	*Lichenostomus unicolor*
White-throated Honeyeater	*Melithreptus albogularis*

White-winged Triller	*Lalage sueurii*
Yellow Oriole	*Oriolus flavocinctus*
Yellow White-eye	*Zosterops luteus*
Zitting Cisticola	*Cisticola juncidis*

VERTEBRATE FAUNA - AMPHIBIANS	
COMMON NAME	SCIENTIFIC NAME
Bilingual Froglet	*Crinia bilingua*
Cane Toad*	*Bufo marinus*
Dahl's Aquatic Frog	*Litoria dahlii (possible)*
Floodplain Toadlet	*Uperoleia inundata*
Giant Frog	*Litoria (Cyclorana) australis*
Green Tree-frog	*Litoria caerulea*
Javelin Frog	*Litoria microbelos*
Marbled Frog	*Limnodynastes conveiusculus*
Northern Dwarf Tree-frog	*Litoria bicolor*
Red Tree-frog	*Litoria rubella*
Rocket Frog	*Litoria nasuta*
Tornier's Frog	*Litoria tornieri*
Wotjulum Frog	*Litoria wotjulumensis*

VERTEBRATE FAUNA - MAMMALS	
COMMON NAME	SCIENTIFIC NAME
Agile Wallaby	*Macropus agilis*
Beccari's Freetail Bat	*Mormopterus beccarii*
Black Flying-fox	*Pteropus alecto*
Black Rat*	*Rattus rattus*
Black-footed Tree-rat	*Mesembriomys gouldii*
Common Brushtail Possum	*Trichosurus vulpecula arnhemensis*
Forest pipistrelle	*Pipistrellus adamsi*
Grassland Melomys	*Melomys burtoni*
Hoary Wattled Bat	*Chalinolobus nigrogriseus*
Large Bent-winged Bat	*Miniopterus schreibersii*
Large-footed Myotis	*Myotis macropus*
Little Broadnosed Bat	*Scotorepens greyii*
Northern bent-winged bat	*Miniopterus schreibersii orianae*
Northern broad-nosed bat	*Scotorepens sanborni*
Northern Brown Bandicoot	*Isoodon macrourus*
Northern Longeared Bat	*Nycotphilus bifax*
Northern pipistrelle	*Pipistrellus westralis*
Pale Field Rat	*Rattus tunneyi*
Western little free-tailed bat	*Mormopterus loriae cobourgiana*
Yellow-bellied Sheathtail Bat	*Saccolaimus flaviventris*

VERTEBRATE FAUNA - REPTILES	
COMMON NAME	SCIENTIFIC NAME
Aboreal Snake-Eyed Skink	*Cryptoblepharus plagiocephalus*
Asian House Gecko*	*Hemidactylus frenatus*
Black-tailed Monitor	*Varanus tristis*
Brown Tree Snake	*Boiga irregularis*
Burton's Legless Lizard	*Lialis burtonis*
Bynoe's Gecko	*Heteronotia binoei*
Children's Python	*Antaresia childreni*
Common Blue-Tongued Lizard	*Tiliqua scincoides*
Darwin Skink	*Glaphyromorphus darwiniensis*
Douglas' Skink	*Glaphyromorphus douglasi*
Yellow-spotted Monitor	*Varanus panoptes*
Frilled Lizard	*Chlamydosaurus kingii*
Gilbert's Dragon	*Amphibolurus gilberti*
Keelback	*Tropidonophis mairii*
Macleay's Water Snake	*Enhydris polylepis*
Main's Menetia	*Menetia maini*
Mitchell's Water Monitor	*Varanus mitchelli*
Northern Dtella	*Gehyra australis*
Northern Water Dragon	*Amphibolurus temporalis*
Port Essington Ctenotus	*Ctenotus essingtonii*
Red-Sided Rainbow Skink	*Carlia rufilatus*
Slaty-grey Snake	*Stegonotus cucullatus*
Slender Rainbow Skink	*Carlia gracilis*
Spotted Tree Monitor	*Varanus scalaris*
Storr's Snake-Eyed Skink	*Morethia storri*
Striped Rainbow Skink	*Carlia munda*
Three-spined Rainbow Skink	*Carlia triacantha*
Zig-zag Gecko	*Oedura rhombifera*

SIGNIFICANT SPECIES RECORDED ON SITE

GROUP	COMMON NAME	SCIENTIFIC NAME	LEGISLATION
Plants	Australian Cycad	*Cycas armstrongii*	TPWC (V)
Birds	Bush-stone Curlew	*Burhinus grallarius*	TPWC (NT)
	Red-tailed Black Cockatoo	*Calyptorhynchus banksii*	TPWC (NT)
Mammals	Black-footed Tree-rat	*Mesembriomys gouldii*	TPWC (NT)
	Pale Field Rat	*Rattus tunneyi*	TPWC (NT)
Reptiles	Yellow-spotted Monitor	*Varanus panoptes*	TPWC (V)
Migratory Birds	Glossy Ibis	*Plegadis falcinellus*	EPBC Migratory; Bonn; CAMBA
	Little Curlew	*Numenius minutus*	EPBC Migratory; Bonn; CAMBA; JAMBA; ROKAMBA
	Oriental Pratincole	*Glareola maldivarum*	EPBC Migratory; CAMBA; JAMBA; ROKAMBA
	Rainbow Bee-eater	*Merops ornatus*	EPBC Migratory; JAMBA
	White-bellied Sea-Eagle	*Haliaeetus leucogaster*	EPBC Migratory; CAMBA

Key

*: indicates pest flora species
TPWC: Territory Parks and Wildlife Conservation Act 2000
(V): Vulnerable listing
(NT): Near Threatened listing
EPBC: Environment Protection and Biodiversity Conservation Act 1999
Bonn: Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
CAMBA: China-Australia Migratory Bird Agreement
JAMBA: Japan-Australia Migratory Bird Agreement
ROKAMBA: Republic of Korea-Australia Migratory Bird Agreement

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SECTION 19

Figures and Tables

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Figures and Tables

FIGURES

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