Alice Springs Airport

Final Environment Strategy 2004

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This Final Environment Strategy was prepared by Northern Territory Airports PL as part of a strategic planning process and in accordance with the provisions of the *Airports Act 1996* (the Act) and the Regulations made under that Act and should be read in that context only.

This Final Environment Strategy is a revision of the previous Environment Strategy that was approved by the Minister in February 1999.

Strategies and scenarios in the Environment Strategy are based on certain assumptions and forecasts which have been prepared by us to assist in the strategic planning processes, and to discharge our obligations under the Act. Therefore, the assumptions and forecasts should not be used or relied upon by any person or entity for any other purpose.

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and Northern Territory Airports PL

Alice Springs Airport Final Environment Strategy
December 2004

Foreword

This Environment Strategy examines the success of Alice Springs Airport environment program over the past five years and outlines a series of best practice initiatives to be implemented over the next five years. We have maintained our program of continuous improvement in environmental management, and we have complied with all relevant legislative requirements.

Northern Territory Airports PL believes that it is important to be a good neighbour and is conscious of the impacts of the operation of the Airport on Alice Springs residents. Northern Territory Airports PL acknowledges and offers thanks for the assistance provided by those many persons and organisations that made contributions to the consultation process. Northern Territory Airports PL remains committed to working closely with key airport stakeholders and the general public.

This Environment Strategy has been developed in consultation with a variety of stakeholders, including government agencies, other airport operators and airport employees, to ensure that all relevant environmental issues are addressed. Alice Springs Airport is very active within its community and has made it a priority to encourage positive involvement with the local communities. Alice Springs Airport continues to support local groups through board memberships and sponsorships of local events, charities, environmental and conservation groups and to provide training and employment opportunities for local indigenous groups. The ties with the community will continue to form a very important cornerstone of the Northern Territory Airports PL.

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

The *Airport Act* and *Environment Protection Regulations* require a very high standard of environmental management and performance, generally above the standards applied in the Northern Territory.

I have pleasure in presenting to you Alice Springs Airport's 2004 Draft Environment Strategy.

Ian Kew
Chief Executive Officer
Northern Territory Airports PL

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1. Overview

This Airport Environment Strategy (AES) is a plan for managing the operations at Alice Springs Airport in a manner that minimises the impact upon the environment and promotes best practice environmental management by all airport users.

On 20 September 1999 the Minister approved the first Alice Springs Airport Master Plan and AES developed by SKM, consultants for Northern Territory Airports PL. Under the *Airports (Environment Protection) Regulations 1997* (the Regulations) the AES is expected to span a 5 year period.

The 2004 AES follows on from the 1999 AES. It is a legally binding document under the Act for management of all operations on Alice Springs Airport from the date of approval by the Minister, until development of the next AES in 2009.

This AES covers the management of all operations on airport, including both aviation and non aviation related activities. The AES has been developed in conjunction with the Alice Springs Airport Master Plan, which provides the direction and overall plan for development of the Airport site. This AES does not cover air emissions or noise generated by aircraft movements, as these are regulated separately by AirServices Australia and the Commonwealth under the *Air Navigation (Aircraft Engine Emissions) Regulations 1984* and the *Air Navigation (Aircraft Noise) Regulations*.

Northern Territory Airports PL is committed to the evolving process of environmental management on airports and has ensured that this AES builds on the management practices developed in the original 1999 AES and the Minor Variation to the AES, approved by the Minister and published in 2002.

The AES has been produced in accordance with the terms of the lease and with Section 6 of the Act. The AES has been developed entirely in compliance with the Act and the Regulations.

1.1 Management of Alice Springs Airport

1.1.1 Company Structure

The Airport Development Group Pty Ltd (ADG) through its subsidiaries acquired a lease for the three Northern Territory Airports comprising, Darwin International Airport, Alice Springs Airport and Tennant Creek Airport, from the Commonwealth Government which commenced on 10 June 1998 with a total consideration of $108.3 million.

ADG is the ultimate parent of the group (Figure 1). ADG owns 100% of Northern Territory Airports PL which in turn owns 100% of Darwin International Airport and Alice Springs Airport who are respectively the holders of a 50 year lease over Darwin International Airport and Alice Springs Airport with free options to renew for a further 49 years. ADG also owns 100% of Tennant Creek Airport who are the holders of a 50 year lease over Tennant Creek Airport with free option for a further 49 years.

1. Overview

1.1.2 Shareholders, Directors and Management

ADG is majority Australian owned and has five shareholders comprising:

- Development Australia Fund Management Ltd (managed by Hastings Funds Management Ltd)
- Australian Infrastructure Fund (managed by Hastings Funds Management Ltd)
- Perpetual Investments Ltd
- National Asset Management Ltd (trust units beneficially owned by Development Australia Fund Management Ltd)
- BAA Australia Pty Ltd

1.1.3 Mission, Scope and Performance of NT Airports Operations

The Mission Statement of NT Airports Pty Ltd is:

In the interests of all stakeholders, operate an airport business that is world class in financial and environmental performance, customer service and safety and security, and is recognised as a key contributor and participant in the economic growth of the Northern Territory.

Vision

Airport Development Group's vision is to be a world class Airport business. That is, we aspire to achieve the following:

- *Standards of efficiency and safety that equal world's best practice*
- *Compliance with all operational, regulatory and environmental standards*
- *Customer satisfaction with facilities, commensurate with the scale of our airports*
- *Staff and management excellence*
- *Appropriate returns to shareholders on invested capital that reflect the underlying risk*
- *All commercial opportunities are fully investigated, and where appropriate developed and implemented*

Values

We will demonstrate our values by action and we will:

- *Deliver on our commitments to customers, shareholders and other stakeholders*
- *Act with honesty and integrity in all our dealings with employees and customers*
- *Demonstrate our professionalism and credibility in all areas of our operations*
- *Respond in a timely and appropriate manner to stakeholder needs*
- *Reward staff for their endeavours on a fair and equitable basis*
- *Accept the responsibility and accountability that goes with the challenge of delivering objectives and plans*
- *Respect all people who we work and have contact with*
- *Excel in providing the highest quality service and support to our stakeholders*

Air travel is essential to Australia's economic and social well being. This is particularly true of the Northern Territory with its vast distances and geographically isolated major centres. Air travel plays an important role in connecting the people of the NT to the rest of Australia as well as to the key South East Asian centres of trade and commerce, including Singapore, Denpasar and Brunei. Through it's ownership of Darwin International Airport and Alice Springs Airport, Northern Territory Airports PL plays an important role in the development of the Northern Territory business and the community.

Alice Springs Airport has a total of 12 staff providing services to the company, tenants and public including financial, technical, commercial, airfield safety, maintenance, customer service, environmental and management services.

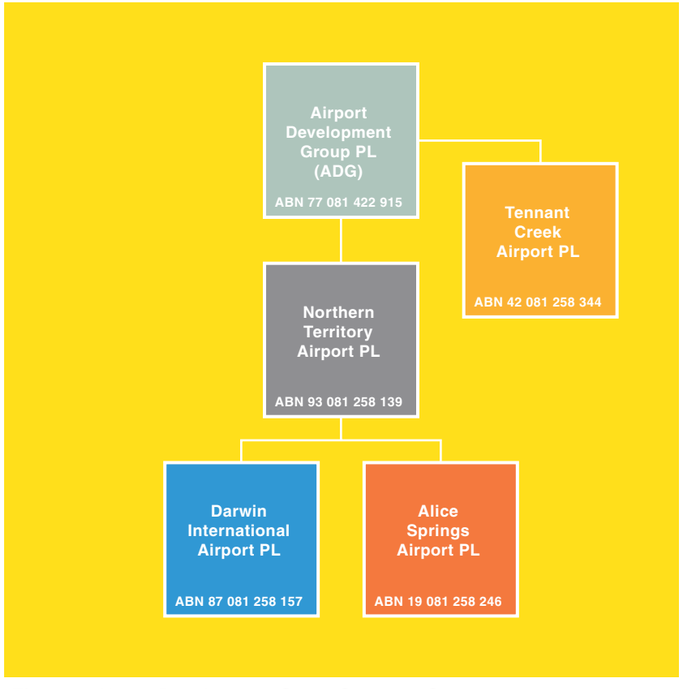

Figure 1 Airport Development Group Company Structure

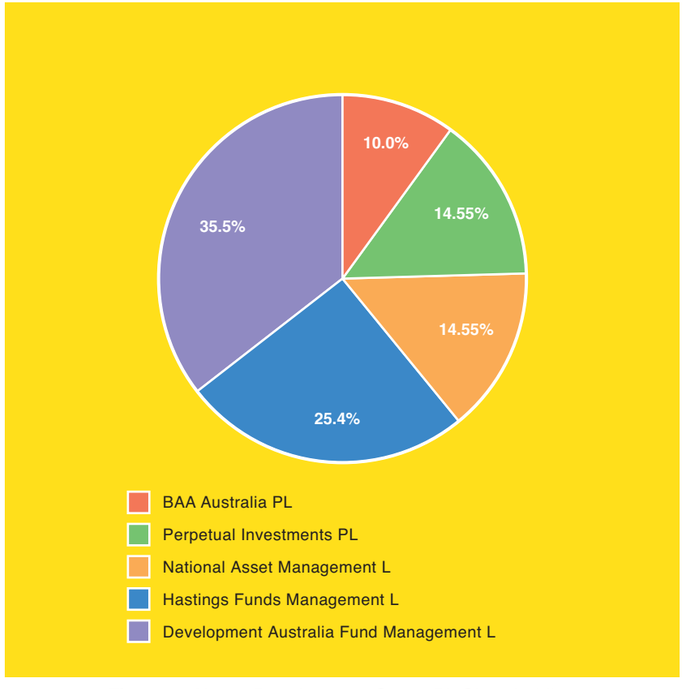

Figure 2 Airport Development Group PL Shareholdings

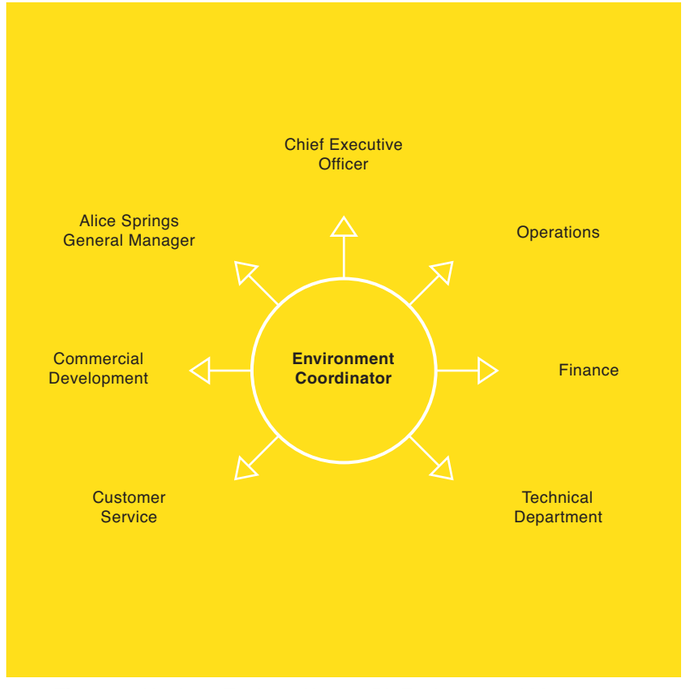

Figure 3 Northern Territory Airports PL Environmental Management Structure

1. Overview

1.2 Commitment to Environmental Management

The environment management function for Alice Springs Airport is represented at the management level of the ADG by the Environment Coordinator (Figure 3). Having environmental representation at this level of management demonstrates the commitment of the organisation to the management of environmental issues at its airports and ensures environmental consideration in all aspects of the operation. The Environment Coordinator holds the responsibility as part of the management team for ensuring consistency and improvement in environmental management.

1.3 Environmental Management Strategy – Past Initiatives

During the past five years Alice Springs Airport has progressively implemented a range of environmental management initiatives including:

1 The development and commencement of staged implementation of an Environmental Management System in line with the ISO 14001 standard

2 A risk management review of environmental issues on Alice Springs Airport and from the review implementation of an approved Minor Variation to the AES (2002). The Minor Variation provided an improved framework for environmental management on Alice Springs Airport

3 The establishment of a Environmental Geographic Information System (GIS) which involves the continual updating of data on threatened species, contaminated sites, monitoring sites as well as biophysical data such as drainage information, soils and vegetation communities etc

4 In conjunction with the Airport Environment Officer (AEO), hosting of an annual Environmental Awareness Seminar for Airport staff and tenants for the past three years. The topics covered in the seminars including regulatory issues, spill training, standards for safe storage of chemicals, fire management and bird hazard management among others

5 The development and implementation of a soil and water quality monitoring program of stormwater drains and potential contaminated sites

6 The development and implementation of a soil erosion monitoring program across Alice Springs Airport

7 Monitoring of weed distributions and presence on airport lands

8 The design and implementation of a Wildlife Hazard Management System (WHMS) to improve control of bird hazards on airport and reduce the impact of airport operations on local bird populations

9 The development and implementation of an Airport Fire Plan, to reduce the risk of wildfire on airport and minimise the risk of environmental damage resulting from wildfire

10 The initial development of a Heritage Conservation and Management Plan for the Seven Mile Aerodrome, one of the most intact WW2 aerodromes remaining in Australia

11 The commissioning of a full flora and fauna survey of Alice Springs Airport

12 Conducting an energy use and efficiency survey of Alice Springs Airport

13 Joining the Commonwealth Greenhouse Challenge program

1.4 The Commonwealth Government's Requirements for Environmental Management

The Act and the Regulations were enacted to provide a regulatory framework for operation and development of federal airports in Australia leased to non-government enterprises.

Specific to the AES is Part 6 of the Act – Environmental Management, which directs how the Airport Lessee Company (ALC) should manage the environmental issues arising on the Airport. The following is a simplified outline of Part 6 of the Act:

- For each airport, there is to be a Final AES
- A Final AES is a Draft AES that has been approved by the Minister
- A Draft AES is prepared by an ALC after taking into account public comments
- It is an offence to cause environmental harm at an airport site
- The Regulations may deal with environmental standards at airport sites

Under the Act, an Airport Environment Officer (AEO) appointed by Department of Transport and Regional Services (DoTaRS) administers the Act and the Regulations on Alice Springs Airport and oversees adherence with the Final AES.

The Act and Regulations set standards and imposes requirements in order to prevent or minimise:

- Environmental pollution (including air, water or soil pollution) generated at airport sites
- Impacts on biota and habitats
- Interference of sites of heritage value
- Interference of sites of significance to Aboriginal or Torres Strait Islander people
- Emission of noise generated at airport sites
- The storage and disposal of wastes at airport sites

The Regulations do not apply to:

- Aircraft noise generated during flight, landing, taking off or taxiing. Such aircraft noise is regulated by AirServices Australia under the *Air Navigation (Aircraft Noise) Regulations*. The Act requires that Australian Noise Exposure Forecasts (ANEF) to be included in the Airport Master Plan.
- Air pollution caused by aircraft engines. This is regulated by the Commonwealth under the *Air Navigation (Aircraft Engine Emissions) Regulations*.

The Act also requires that each airport have an Airport Master Plan. The Master Plan describes the overall development plan and vision for Alice Springs Airport. Like the AES, the Master Plan is reviewed every 5 years although the overall development plan must address the medium term future to 2024. A summary of environmental management requirements for potential developments on Alice Springs Airport is also included in the Alice Springs Airport Master Plan.

The development foreshadowed in the Alice Springs Airport Master Plan does not constitute a development proposal. The Act sets out a process for the consideration and approval of "Major Development Plans" (MDPs) for specific developments. The triggers for an MDP are outlined under Part 5, Division 4, Section 89 of the Act. Specific developments likely to require an MDP include:

- Runways or taxiways.
- Terminals.
- Major road works.
- Developments costing in excess of $10 million (Aus).
- Developments that substantially add to an airport's capacity.
- Developments that may have an environmentally significant impact or that may impact upon an area of environmental significance listed in the AES.

Individual MDPs are assessed by DoTaRS and require a separate environmental assessment, independent of the AES.

The Regulations do not cover the entirety of environmental regulation on Alice Springs Airport. Territory law must also be considered for any environmental standards not specified in the Regulations. In this case State/Territory regulations can be used to develop a local standard. Some Territory laws which apply to Alice Springs Airport include:

- *NT Motor Vehicles Amendment Act 2003*
- *Work Health Act 2004*
- *Ozone Protection Act 1996*
- *Waste Management and Pollution Control 2003*
- *Dangerous Goods Act 1996*

Commonwealth law, other than those matters specified in the Regulations, is also relevant to environmental management on airport sites. Relevant legislation includes the *Australian Heritage Council Act 2003*, the *Environmental Protection and Biodiversity Conservation Act 1998* and the *Aboriginal and Torres Straight Islander Heritage Protection Act 1984*. State/Territory laws that cover biota, habitat, heritage and sites of indigenous significance have an effect on airport provided they are not inconsistent with Commonwealth laws dealing with the subject.

The management of off-airport site impacts needs to address the relevant Northern Territory legislation including the *Water Act 2000*, the *Soil Conservation and Land Utilisation Act 2001*, the *Heritage Conservation Act 2000*, the *Territory Parks and Wildlife Act 2001*, the *Crown Lands Act 2000* and the *Waste Management and Pollution Control Act 1998*.

1.4.1 Required Contents of an Environment Strategy

In accordance with the Act, the AES must specify all of the following:

- Northern Territory Airports PL objectives for the environmental management at Alice Springs Airport
- Areas within the Airport site which Northern Territory Airports PL, in consultation with State or Territory and Federal conservation bodies, identifies as environmentally significant
- Sources of environmental impact associated with airport operations
- Studies, reviews and monitoring to be carried out in connection with the environmental impact associated with airport operations
- Time frames for completion of those studies and reviews and for reporting on that monitoring
- Specific measures to be carried for the purposes of preventing, controlling or reducing the environmental impact associated with airport operations and time frames for completion of those measures
- Time frames for completion of specific measures
- Details and outcomes of the consultations undertaken in preparing the AES
- Any other matters (if any) as are specified in the Regulations

1.5 Summary of Consultations

1.5.1 Submission to Minister

Section 125(2) of the Act requires that the Draft AES be submitted to the Commonwealth Minister for the Department of Transport and Regional Services for approval. The Draft Strategy should also include:

- A summary of consultations with stakeholders and the general public and views expressed in those consultations.
- A list of names of all persons who were consulted and members of the public who provided written comment.
- A statement demonstrating that Alice Springs Airport has taken full account of comments by stakeholders and the public in developing the draft AES.
- Any other information required by the Regulations with regard to stakeholder and public comment for Transport and Regional Services.

This AES will become a legally binding document under the Act for management of all operations at Alice Springs Airport on its approval by the Minister. Until that time, the 1999 AES will remain in force.

1.6 Community Consultation

This AES was produced as a result of consultation with airport lessees, the AEO, NT Government Agencies and community stakeholders.

The Preliminary Draft AES was subject to a 90 day public exhibition period prior to submission to the Minister for Transport and Regional Services.

The Preliminary Draft AES was amended as required and was submitted with a summary of the public comments and consultation outcomes to the Minister for approval on 15 September 2004.

1.7 Dissemination of the Airport Environment Strategy

Northern Territory Airports PL will disseminate copies of the Final Alice Springs Airport AES to all airport tenants, the AEO, the Airport Building Controller (ABC), Alice Springs community representatives, Alice Springs and NT Government representatives and other relevant stakeholders. The AES will also be made available to the general public.

The following table summarises some of the major environmental commitments identified and the differences between the 1999 AES, the 2002 Minor Variation and the 2004 Draft AES.

see ***Table 1*** Summary of Environmental Initiatives

Environment Aspect	1999 AES	2002 Minor Variation	2004 AES
Water (ground, waste and storm)	Development of fuel spill response procedures.	Implemented a report all spills policy	Will implement an explain and report all spills policy
	Initial open drain monitoring commenced.	Purchased new spill clean up equipment for RPT and emergency kits for all safety vehicles	All water and sediment sampling will be taken as per new Standard Operating Procedure.
		Implemented targeted water and sediment monitoring program conducted bi-annually.	All water and sediment sampling results will be input into new database and reported to the AEO quarterly.
Soil (erosion and sedimentation)	Inspected drains in regards to maintenance.	New fencing completed along Santa Teresa and Maryvale Roads to prevent access of vehicles and wandering stock.	Will continue to maintain fencing along entire boundary of airport.
	Initial review of erosion landside.	Development of targeted erosion monitoring transects and collection of data bi-annually.	Will continue monitoring transects and include data and photo point monitoring into new data base – report results annually to AEO
		New methods implemented for fire break maintenance to reduce windrows and prevent dust.	
Wildlife Hazard Management	Continue bird monitoring and harassment on the airfield.	Commissioned a report in regards to bird hazard management.	Focus on Wildlife Hazard Management will be on land management to decrease wildlife attraction.
		New Wildlife Hazard Management System (WHMS) developed including convening a Steering Committee representing stakeholders.	Will implement new wildlife hazard database and provide data to relevant authorities and WHMS Steering Committee.
		Wildlife Hazard Training conducted by Northern Territory Airports PL and AEO	Will continue targeted training for Safety Officers and tenants.
Land Management (weeds, fire and ferals)	Monitor for mosquito breeding grounds conducted.	Monitoring and control program implemented for declared weeds.	Will be implementing second stage of airport Fire Plan including fire scar mapping.
		Development of 1st stage fire plan in conjunction with Bush Fires Council.	Weed and fire data will be included on a Geographic Information System (GIS) database.
			Feral animal program will be reviewed and data entered onto WHMS database.
Native Flora and Fauna	Desktop review conducted for potential species of conservation significance.	Intensive on-ground surveys conducted for fauna as well as flora mapping. 3 plant species discovered of NT conservation significance.	Data from fauna and flora surveys will be available on GIS to assist with sustainable planning of development.
Air Quality and Ozone depleting substances	Continue dust control measures – no disturbance of dust buffer zone.	Black smoke agreement developed with ARFF.	Continue to reduce emission commitments under the Greenhouse Challenge
		Participant in Commonwealth Greenhouse challenge program.	Continue dust abatement measures.
Hazardous Materials	Develop spill procedures.	Implemented report all spills policy to all operators on airport.	Will implement an "explain all spills" as well as "report all spills" policy.
	Ensure all hazardous products are stored to appropriate standards.	Surveyed building material dump for asbestos.	Focus on providing training for spill clean up procedures for all tenants.
	Conduct asbestos review.		
Resource Use	Implement any recommendations from energy audits.	Energy audit conducted and found no significant savings to be made.	Tenants will be encouraged to use energy efficient building design through the building development approvals process.
		Installed power factor correction equipment.	Energy saving recommendations from the Greenhouse challenge will be implemented.
Waste, Recycling and Litter	Encourage waste reduction and practical recycling programs.	Implemented green waste recycling.	Ensure that waste oil and battery storage meets appropriate standards.
			Investigate options and practicalities for implementing a recycling program.
Noise	Review existing noise management program.	Investigations undertaken have not shown noise to be a significant issue at ASA. Very few noise complaints have been received at ASA.	Continue to evaluate noise issues.
Contaminated Sites	Develop and update register and perform risk assessment on contaminated sites.	Investigations have been conducted at all contaminated sites and 4 sites have been remediated.	Further investigation will be conducted for the extent of asbestos in an historical airside dump site.
	Ensure all above ground tanks are sufficiently bunded and managed.	All fuel tanks have been investigated to appropriate standards.	Remediated contaminated sites will continue to be analysed for contaminants on a bi-annual basis.
Indigenous and Heritage	Northern Territory Airports PL to consult with relevant bodies to identify any heritage or indigenous sites.	Draft management plan developed for 7-mile precinct.	ASA will work with DIPE in regards to 7-mile nomination under NT Heritage Conservation Act.
		Advice from AAPA has indicated 2 recorded sacred sites.	ASA will finalise management plan for 7 mile precinct and implement practical recommendations.
		ASA has been visited by Arrernte men and women to investigate any further sacred sites.	ASA will comply with conditions on AAPA certificate for any further sacred sites identified.
Social and Community	No specific commitments.	No specific commitments.	Develop an environmental Information booklet for all airport tenants in conjunction with AEO
			Maintain support to the Lower Todd Landcare group.

Table 1 Summary of Environmental Initiatives

2. Description of Existing Airport Environment and Operations

2.1 Environment

2.1.1 Location

Alice Springs Airport is located approximately 14 kilometres south-east of the town of Alice Springs in the Northern Territory. Alice Springs is located at approximately the geographic centre of Australia. Figure 4 shows the location of Alice Springs Airport.

see ***Figure 4*** Location of Alice Springs Airport

Understanding the geographic isolation of Alice Springs is important in describing how Alice Springs Airport relates to the nearby town. Whilst Alice Springs is classed as a small city with around 28,000 people, it is also a service centre for a massive area of Australia. Tennant Creek is the next largest town in the region, with a population of only 3,900 people and is located 500 kilometres to the north of Alice Springs. To reach a city of equivalent or larger size to Alice Springs requires travelling over 1400 kilometres in any direction. Alice Springs Airport is one of the few regional airports with regular flights to six capital cities on the Australian mainland and thus provides a vital link between the red centre and the rest of Australia.

The Airport site in total covers approximately 3,550 hectares which makes it Australia's largest airport in area. The elevation of the Airport is 545 metres ASL.

The Airport is bounded by:

- Colonel Rose Drive to the north which includes the Arid Zone Research Institute and rural residential housing
- The Todd River to the north-east and Amoonguna settlement east of the river
- Undoolya cattle station to the east, south-east and south
- Stuart Highway, the Finke Desert Race Track, the Old Ghan Railway and Roe Creek Bore Field to the west

2.1.2 Physical Environment

Climate

The Alice Springs climate is typical of central Australian rangelands, with a highly variable low average rainfall, high average evaporation rate and a wide annual temperature range. The Alice Springs Bureau of Meteorology is located on the Airport and provides accurate local climatic data.

The annual mean maximum temperature is 28.6°C and the annual mean minimum temperature is 13.2°C. January is usually the warmest month, with daytime temperatures occasionally rising to over 45°C and July is the coldest month, with night time temperatures occasionally below -7°C. Temperatures over 40°C or below 2°C occur on average less than 50 days of the year.

The long term average annual rainfall for Alice Springs Airport is 286mm and fine weather is expected on an average of 204 days per year. Rainfall is more frequent between December and March and can be sufficient to constitute a summer 'wet season'. However rainfall totals can vary dramatically between years. For instance rainfall at Alice Springs Airport was 741mm in 2001, 198mm in 2002 and 158.2mm in 2003. Average evaporation rate is around 3066mm/year (8.4mm/day) which is 11 times the average annual rainfall.

Generally wind gusts are less severe than in cyclone prone country to the north, though small twisters ('dust devils' or 'willy willies') are common and can on rare occasions produce extremely strong winds, up to 180km/h, within a localised area and for a short period of time.

2. Description of Existing Airport Environment and Operations

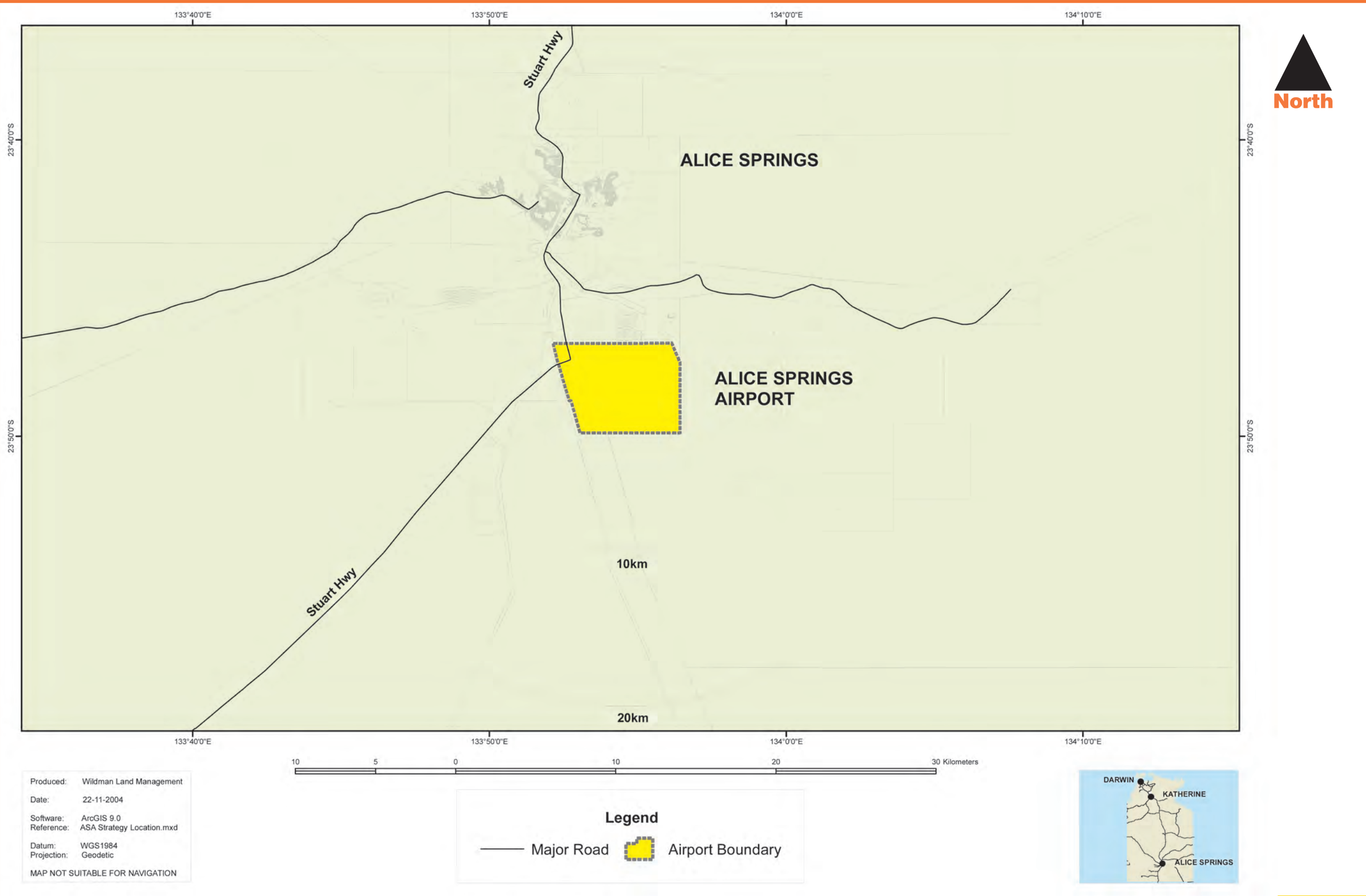

Figure 4 Location of Alice Springs Airport

The prevailing winds are from the south east or north west and are known to create dust storms.

Geology and Soils

The Airport is on the Todd River floodplain, an alluvial basin filled by deposition of materials eroded from the uprising MacDonnell Range since the Alice Springs orogeny 350 million years ago. Soils at Alice Springs Airport are typically red sandy clay, clayey sands or sandy clay loam to depths exceeding 250 metres. Tracts of sand are scattered throughout the landscape. Low sand ridges are typically generated from Aeolian material though some are thought to have been deposited by extreme magnitude flood events during the Holocene period.

Hydrology

The two closest significant natural waterways are:

- The Todd River, which is adjacent to the north eastern boundary of the Airport, 5 Kilometres north east of the Terminal. The Todd River drains south–east and is well away from the eastern airport border and storm water discharge area.
- The Roe Creek, which is located near the south western border. Lower drainage channels emanating from the creek cross the south western airport border in undeveloped areas but are separated from the main body of the Airport by the Old South Road and pastoral land south of the Airport.

Hydrogeology

Small shallow aquifers occur 50 to 100m below the surface and major aquifers that could be used for the town water supply are at greater depth. Potential water source aquifers currently thought to exist under the Airport include:

- The Goyder Formation Aquifer between 192-280m depth.
- The Shannon Formation Aquifer at over 500m depth.
- Roe Creek Aquifer (Mereenie and Pacoota formations). This aquifer may occur on the Airport, but only under the western margin. The bulk of the aquifer is located west and south of the Airport.

The town of Alice Springs is totally dependant on groundwater for water supply. The town water supply is drawn from the Power and Water Authority's Roe Creek bore field situated approximately 12 kilometres south west of the town and 8 kilometres west of the terminal building. A potential future bore field has been identified in the Rocky Hill area situated approximately 25 kilometres south-east of the town and 10 kilometres east of the Airport. However the cost of pumping water from the new site would be high and Water Resources NT continues to explore other potential water sources closer to town, including the aquifers that lie beneath the northern half of Alice Springs Airport.

Alice Springs Airport is zoned for aquifer protection in relation to the Roe Creek bore field, as set down in the 1999 Alice Springs Land Use Plan. On a zoning scale from 1 (high level protection required) to 3 (low level protection requirement) Alice Springs Airport contains Zone 3 (developed and northern areas) and Zones 1 and 2 (southern undeveloped dust suppression and bore field buffers). Land use requirements for the three Zones are listed in table 2 below.

Zone	*Resource*	*Permitted Land Use*	*Prohibited Land Use*
1	Source of Potable Water	Development associated with water production bores and associated water supply facilities.	Residential and industrial developments are prohibited. Grazing is not permitted within 100 metres of town supply production bores, and stock watering points are not permitted within1 kilometre of town supply production bores.
2	High to Moderate Yielding Aquifer	Grazing (stock bores are acceptable) and horticulture that is limited to economically sustainable yields.	Residential and industrial development, feed lots and the storage of chemicals and wash down facilities are prohibited.
3	Low yielding aquifers of the Amadeus Basin	Rural living, grazing and passive agriculture. Intensive agriculture and industrial uses should take into consideration the potential impact on downstream water resources with the aim of minimising any potential adverse environmental impacts.	none

Table 2 Development restrictions within Aquifer Protection Zones (Alice Springs Land Use Plan 1999)

2.1.3 Biological Environment

Due to the large area of undeveloped land on Alice Springs Airport a considerable variety of habitat types are known to occur on site. However previous land use for cattle and horse grazing and the current wide spread invasion of introduced Buffel Grass has resulted in the diversity of flora and fauna being relatively low.

Habitats

Six habitat vegetation types have been described on Alice Springs Airport including:

- Witchetty Bush and Ironwood on sandy-loam rises (Vegetation type 15a)
- Witchetty Bush and Whitewood on sandy rises (Vegetation type 15b)
- Mulga in valleys with red earth soils (Vegetation type 16)
- Ironwood and Fork-leafed Corkwood woodland on alluvial flats (Vegetation type 17a)
- Ironwood and Fork-leafed Corkwood open woodland on alluvial flats (Vegetation type 17b)
- Drainage depressions with Coolabah and Ironwood (Vegetation type 23)

Flora

Vegetation surveys have recorded a total of 181 plant species at Alice Springs Airport. Species identified include native plants, introduced plants and declared weeds within the NT. Declared noxious weeds, as classified by the *NT Weeds Management Act (2001)*, are uncommon on Alice Springs Airport. This is primarily due to the invasion of introduced Buffel Grass *(Cenchrus ciliaris)*, which may exclude most other grasses or forbs from areas it occupies. Buffel Grass is not itself classified as a weed and many pastoralists continue to promote its growth as a pasture species in Central Australia.

Some other introduced species on Alice Springs Airport are:

- Couch Grass *(Cynodon dactyl*on)
- Kapok Bush *(Aerva javanica)*
- Paddy Melon *(Citrullus lanatus)*
- Ruby Dock *(Acetosa vesicaria)*
- White Cedar *(Melia azedarach)*

Native grasses that may be locally common include:

- Erect Kerosene Grass *(Aristida holathera)*
- Button Grass *(Dactyloctenium radulans)*
- Finger Panic Grass *(Digitaria coenicola)*
- Woollybutt Grass *(Eragrostis eriopoda)*
- Woolly Oat-grass *(Enneapogon polyphyllus)*

Native shrubs that may be locally common include:

- Witchetty Bush *(Acacia kempeana)*
- Colony Wattle *(Acacia murrayana)*
- Emu Bush *(Eremophila longifolia)*
- Ruby Saltbush *(Enchylaena tomentosa)*
- Acacia Bush *(Acacia victoriae)*

Native trees that may be locally common include:

- Ironwood *(Acacia estrophiolata)**
- Bloodwood *(Corymbia opaca)*
- Coolabah *(Eucalyptus coolabah)*
- Mulga *(Acacia aneura)**
- River Red Gum *(Eucalyptus camaldulensis)*
- White Wood *(Atalaya hemiglauca)**

*Can also occur as a shrub

Three plant species of conservation significance within the Northern Territory have been recorded on Alice Springs Airport, including:

- *Einadia nutans* subsp. *nutans* (Rare in the southern region of the NT, though common in southern Australia)
- *Ixiochlamys nana* (poorly known or 'data deficient')
- *Maireana lobiflora* (poorly known or 'data deficient')

Fauna

Fauna surveys have recorded a total of 118 species on Alice Springs Airport. The list includes 3 amphibians, 23 reptiles, 80 bird species and 12 mammals.

Common native reptiles on airport may include:

- Centralian Blue-tongue *(Tiliqua multifasciata)*
- Western Brown Snake *(Pseudonaja nuchalis)*
- Sand Goanna *(Varanus gouldii)*
- Long-nosed Water Dragon *(Lophognathus longirostris)*
- Bearded Dragon *(Pogona vitticeps)*

Birds are the most diverse class of vertebrates to be found on Alice Springs Airport and several species require regular control or harassment programs in airside areas to reduce the bird strike hazard to aircraft. Some common species include:

- Black Kite *(Milvus migrans)*
- Galah *(Cacatua roseicapilla)*
- Masked Lapwing *(Vanellus miles)*
- Spiny-cheeked Honeyeater *(Acanthagenys rufogularis)*
- Willie Wagtail *(Rhipidura leucophrys)*

Two recorded bird species are classified as "near threatened" in the NT under the *Territory Parks and Wildlife Act (2000)* and include:

- The Red-tailed Black Cockatoo *(Calyptorhynchus banksii samueli)*
- The Square-tailed Kite *(Lophoictinia isura)*

Native mammals are uncommon on Alice Springs Airport probably due to habitat limitations, historical grazing and feral predators. Bats are the most diverse group of mammals known to exist on the Airport. Some native mammals on airport include:

- Red Kangaroo *(Macropus rufus)*
- Lesser Long-eared Bat *(Nyctophilus geoffroyi)*
- Southern Freetail Bat *(Mormopterus planiceps)*
- Sandy Inland Mouse *(Pseudomys hermannsburgensis)*
- Dingo *(Canis lupus dingo)*

Feral or pest animals on airport include:

- Feral Cat *(Felis catus)*
- Red Fox *(Vulpes vulpes)*
- European Rabbit *(Oryctolagus cuniculus)*
- House Mouse *(Mus domesticus)*

Low numbers of domestic camels are allowed to graze restricted areas to assist in fire break maintenance and reduce Buffel Grass fuel loads.

2.2 Airport Operations

Alice Springs Airport is significant to the national Aviation Network. Qantas uses the Airport for hubbing flights to and from all capital cities except Canberra and Hobart as well as Ayers Rock, Broome and Cairns. The other major airline that uses the Airport, Virgin Blue, currently only services the Alice Springs to Adelaide route. Chartair operates services to Tennant Creek. Chartair, Aboriginal Aircraft Maintenance and Services and Pearl Aviation also conduct 'milk runs' and regular service flights to various communities and mine sites within the Northern Territory.

see ***Figure 5*** Alice Springs Airport Layout and Infrastructure

The Airport has three runways:

- Main Runway (12/30), length: 2438m (sealed)
- Secondary Runway (06/24), length: 1029m (part sealed)
- Runway (17/35), length: 1133m (sealed)

Current land use on Alice Springs Airport includes:

- Domestic Terminal
- 3 runways with associated taxiways and aprons
- Car parking
- An aviation fuel storage farm
- Commercial developments
- Airport services operations including fire fighting, air traffic control, security and maintenance
- Atmospheric research
- Bureau of Meteorology
- Police Airwing and Royal Flying Doctor facilities
- Tourism operations including balloon launching and ecotourism
- Leased camel grazing

The high strength Regular Public Transport (RPT) apron can accommodate up to B747 aircraft. There are 10 Aircraft Bays. There are 12 Jet A1 refuelling hydrants.

The General Aviation (GA) commuter area consists of two aprons with parking for approximately twenty to thirty aircraft. Light aircraft hangers adjoin the GA apron. Fuel is supplied from a BP Avgas refuelling facility tanker or bowsers on both GA aprons.

The RPT passenger terminal building normally serves domestic services only; however, charter international flights are available by arrangement. A number of concessionaries such as bar and bistro, souvenir and retail shops, car hire desks and tour operator desks exist within the terminal building.

Car parking facilities are to the north of the terminal. There are 123 public car spaces with an additional 85 spaces leased to car rental companies.

In 2002/03 there were 16,200 GA aircraft movements, and in 2003 the busiest standard operational demand required parking for three B737 and three BA146 aircraft at one time in the mid-day period. Busiest standard operational demand for domestic passenger handling in 2003 was 355 arrivals and 380 departures at one time. During the 02/03 period Alice Springs Airport provided facilities for 222,976 landed tonnes of civilian air traffic, 572,300 civilian passengers and made EBITDA earnings of $3,769,983.

Annual GA aircraft movements are forecast to be between 17,000 and 29,000, by 2023/24, with a busiest standard operational demand of between four and eight B737 aircraft and two to three BA146 aircraft. Domestic passenger handling will most likely rise to a busiest operational demand of 455 arrivals and 490 departures at one time.

Currently there are 12 full time staff employed by Northern Territory Airports PL on Alice Springs Airport. This includes management, administration, Airport Operations Officer and maintenance personnel (Groundstaff). The Alice Springs Operations Manager is the primary contact for environmental issues and deals regularly with the AEO. Environmental management is supported from Darwin International Airport by the Northern Territory Airports PL Environmental Coordinator, who visits Alice Springs frequently to ensure compliance with the AES and to conduct onsite monitoring and measurements.

2.3 Surrounding Land Use and Tenure

Undoolya cattle station occupies the land adjacent to the Airport on the eastern and southern boundaries. Cattle occasionally enter airport land through breaks in the boundary fence in these areas. The cattle station land

2. Description of Existing Airport Environment and Operations

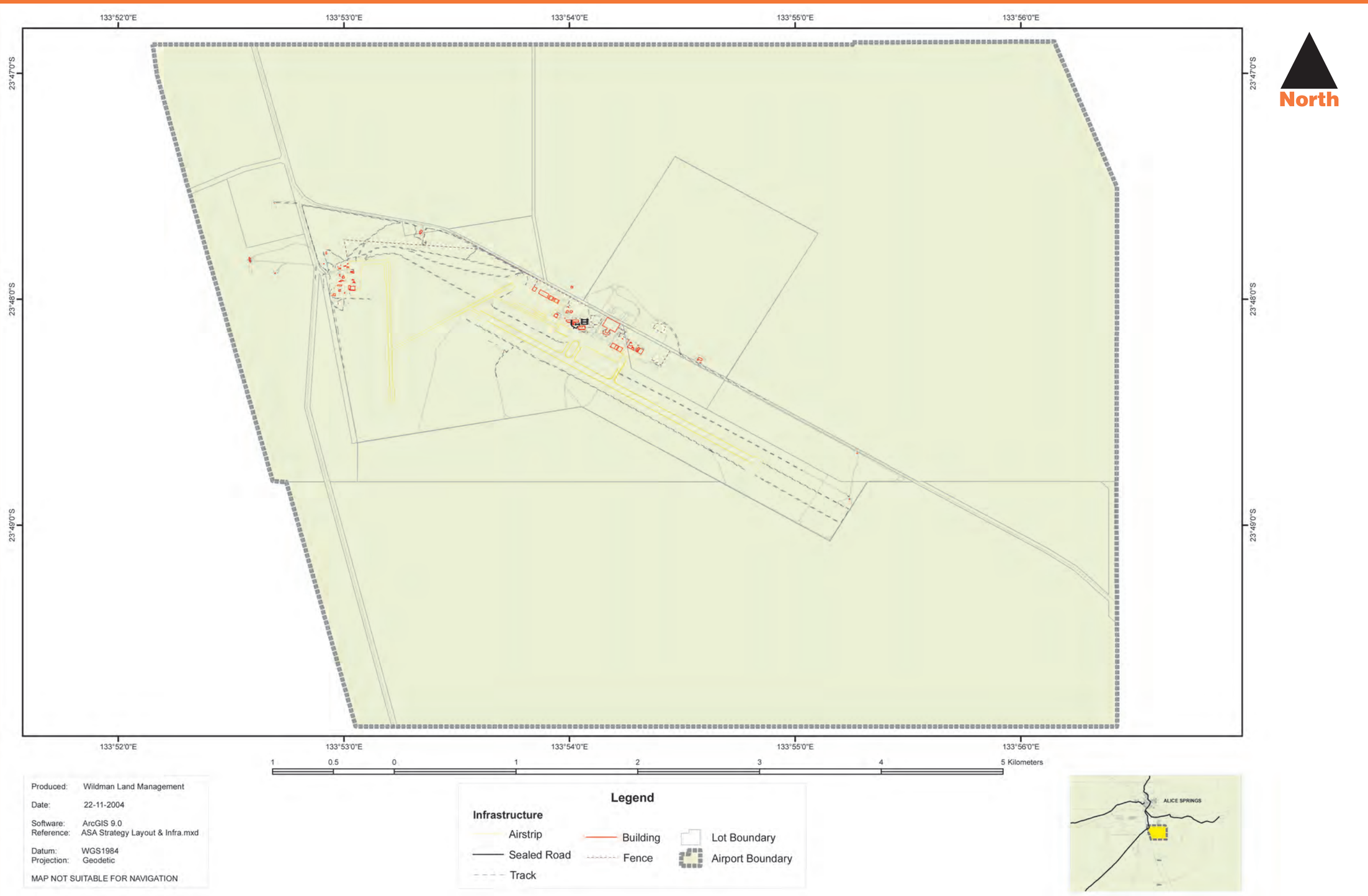

Figure 5 Alice Springs Airport Layout and Infrastructure

is generally undeveloped and has not been cleared, thus it is primarily low open woodland and open shrubland.

The Finke Desert Race Track is located to the south west of the Airport. Recreational vehicles use the track throughout the year and large crowds gather in the area during the long weekend of the annual Finke Desert Race in June. The former Owen Springs cattle station is now an NT Government mutiple use property and is located to the west of the Airport. Owen Springs Station was purchased by the NT Government in 2000. The western and northern parts of the station have been converted into a low impact tourism and recreational reserve, whilst the eastern area closest to the Airport has been designated for grazing research by the NT Department of Business, Industry and Resource Development.

The Arid Zone Research Institute run by the NT Government is located to the north of the Airport. Rural residential housing is also located to the north of the Airport.

Amoonguna aboriginal community (population <300) is located to the north east of the Airport, beyond the Todd River.

2.4 Tenants

There are 75 listed tenants on Alice Springs Airport ranging from companies renting bus bays or advertising space through to large scale aircraft operations and maintenance. Lease terms vary between one and 40 year periods. Renewal options can be offered for 3 or 5 year periods.

There are 30 tenancies with no staff regularly operating on site and include mobile phone transmission towers, tour bus and rental car company parking, various advertising features and vending machines.

There are 45 tenancies that have staff operating on site and include tour companies, car rental and hotel service desks, catering and retail facilities, airline and charter aircraft operations, helicopter charters, housing construction, maintenance, rental vehicle storage, emergency services, research stations, Bureau of Meteorology, AirServices, tourism operations and grazing leases.

The majority of tenants are located on or adjacent to airside areas, leaving over 80% of the Airport undeveloped. Undeveloped areas are either vacant or used for camel grazing or low impact tourism operations.

2.5 Environmentally Significant Areas

1999 AES

In the previous AES, environmentally significant sites were subjectively determined due to the lack of detailed on-site survey work. The 1999 AES made note of a sand ridge habitat located to the north east of the terminal building. The Alice Springs Greening Australia office had made comment that this habitat potentially "has local significance as an intact, mature vegetation community structure which is relatively uncommon in the region". The 2003 Environmental Survey of Alice Springs Airport investigated this area but found no indication that the habitat had unique conservation value. Consequently Alice Springs Airport will continue to manage this habitat appropriately to preserve the habitat as far as practical; however the area has not been listed on the Environmental Site Register as locally or regionally significant.

2.5.1 Determination of Significance

The Regulations do not contain a definition or description of what is considered ‘environmentally significant’, or a methodology for determining such significance.

Therefore Alice Springs Airport has taken into consideration many aspects and conducted several surveys in order to accurately determine Environmentally Significant Sites.

An extensive flora and fauna survey has been conducted during the past AES period as well as extensive consultation with the Arrernte people and officers from NT Environment and Heritage. The main differences from the 1999 AES are two recorded Sacred Sites by the Aboriginal Areas Protection Authority and the identification of a possible further sacred site resulting from a recent visit by Arrernte people as well as the identification of three plant species. 20 bird species recorded on Alice Springs Airport are found on the EPBC list.

Other agreements and legislation that have been taken into account include:

International Agreements

- Species or communities listed under international conventions, for example, Japan Australia Migratory Bird Agreement (JAMBA), China Australia Migratory Bird Agreement (CAMBA) and the Bonn Convention (Bonn).

Commonwealth Legislation

- *Environmental Protection and Biodiversity Conservation Act 1999 (EPBC)*
- *Torres Straight Islander Heritage Protection Act 1984*
- *Commonwealth Register of National Estate*

NT Legislation

- *Territory Parks and Wildlife Conservation Act*
- *NT Heritage Conservation Act*
- *NT Sacred Sites Act*

Species considered to be of conservation significance in this AES are those listed on the Threatened Species List under the Territory Parks and Wildlife Conservation Act 2000 and/or listed under the Commonwealth EPBC Act as:

NT – near threatened

EN – endangered

VU – vulnerable

Plants listed as ‘data deficient’ (DD) or ‘not evaluated’ (NE) on the Threatened Species List under the *Territory Parks and Wildlife Conservation Act 2000* are also considered to be of some concern, as there is the possibility that they could include rare or restricted species.

see ***Figure 6*** Significant Sites on Alice Springs Airport

2.5.2 Indigenous Sites

There are two “recorded” Sacred Sites of significance to the Arrernte people of the Alice Springs region that have been identified on Alice Springs Airport. The Aboriginal Areas Protection Authority (AAPA) provided a location map of the two sites at the request of Alice Springs Airport and these are marked in Figure 6. Both Sacred Sites are located away from major operational areas and are currently under no threat from development.

Northern Territory Airports PL has applied to the AAPA to conduct an investigation into the potential for additional Sacred Sites on Alice Springs Airport, within the zones of potential development. The AAPA investigation will also include the two known Sacred Sites to determine their cultural significance.

Upon completion of the investigation the AAPA will issue an Authority Certificate to Northern Territory Airports PL identifying the management provisions for the two sites, as well as for any other sites that are identified. Northern Territory Airports PL will act in accordance with these management provisions, to ensure it remains compliant with the *Aboriginal Sacred Sites Act, 1989*.

As part of this investigation, a group of Arrernte people conducted site visits on Alice Springs Airport in April 2004 where a further possible site was highlighted by Arrernte men. Further information in regards to these sites of significance and management is currently being sought from AAPA.

2.5.3 Heritage Sites

The one heritage site on Alice Springs Airport is known as the 7-mile Aerodrome and consists of a complex of buildings the first of which were constructed in 1940 (Figure 6). The Aerodrome was used for military and

2. Description of Existing Airport Environment and Operations

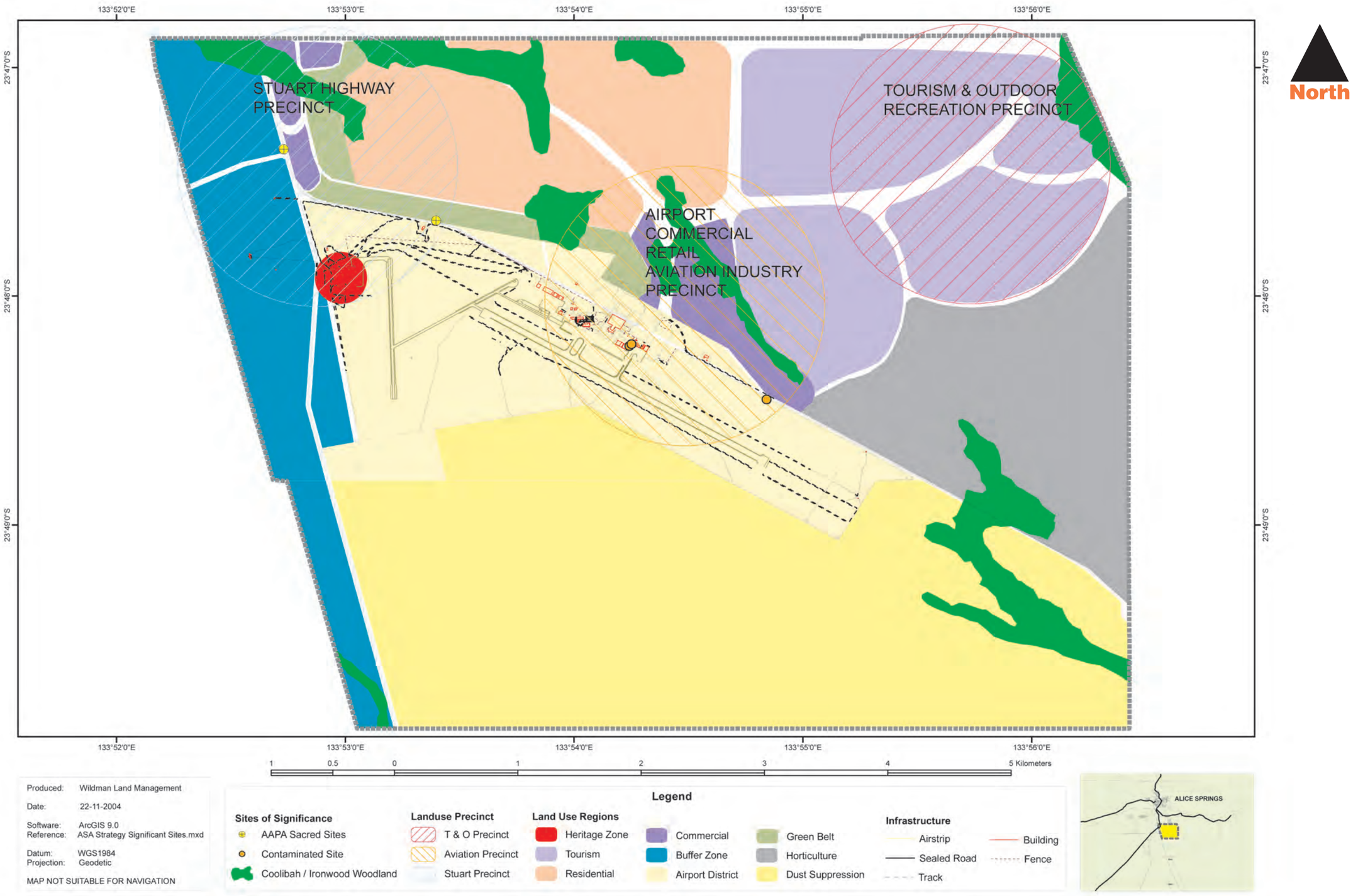

Figure 6 Significant Sites on Alice Springs Airport

civilian operations throughout the 1940's and 1950's but became too small to accommodate Alice Springs air traffic by the 1960's. Thus in the 1960's the current 12/30 runway and a new terminal were constructed to the east of the 7-Mile area and the old Aerodrome was taken over for housing Airport Groundstaff and small aircraft charter companies.

The majority of buildings within the 7-Mile area have experienced continual use and upgrading since they were constructed. This has meant that many buildings have been modified from their original form; however this adds further heritage value due to its association with the historical development of the aviation industry in Alice Springs. The continual occupancy by tenants has played a significant role in ensuring that the buildings have remained intact and have not become derelict over the years. Consequently the 7-Mile Aerodrome is considered to be one of the best preserved airfields from the WWII period that exists in Australia today and has significant heritage value.

A Conservation and Management Plan of the heritage values of the 7-Mile precinct is under development. The development of the Management Plan for the 7-Mile Aerodrome will ensure the continued preservation of this precinct. Consultation in regards to the seven mile precinct significance has been conducted with the Environment and Heritage Officers from NT Department of Infrastructure Planning and Environment (DIPE) and further consultation will be conducted with Department of Environment and Heritage.

2.5.4 Significant Flora

During the 2003 survey the habitat of Coolabah and Ironwood woodland in drainage depressions was noted for its high diversity of plant and bird species. The habitat type is uncommon and at risk in Central Australia due to threats from weed invasion and changed fire regimes but is not currently a listed habitat under Territory or Commonwealth conservation law. Northern Territory Airports PL will continue to manage this habitat appropriately to preserve the habitat as far as practical; however the area has not been listed on the Environmental Site Register as locally or regionally significant.

Three plant species of conservation significance in the NT have been identified on airport in the December 2003 Flora and Fauna Survey and are the only flora species of significance that have been recorded including results of surveys conducted in the 1990s by the FAC.

One species, *Einadia nutans* subsp. *nutans* is considered rare in the southern region of the NT, though it is common in southern Australia, and two species; *Ixiochlamys nana* and *Maireana lobiflora* are considered to have a poorly known or 'data deficient' distribution. A survey to formally identify the locations of individuals of this species is planned within this AES period and the sites will be added to the Environmental Site Register once this is completed.

Family	Genus, Species	Categories		
		1	2	3
CHENOPODIACEAE	*Einadia nutans* subsp. *nutans*		NT	
ASTERACEAE	*Ixiochlamys integerrima*		DD	
CHENOPODIACEAE	*Maireana lobiflora*		DD	

Categories: 1 Northern Territory Endemics
2 Threatened Species Listing under the *Territory Parks and Wildlife Conservation Act 2000.*
3 Threatened Species Listing under the under the *Commonwealth EPBC Act 1999.*

Table 3 List of Plant Species of Conservation Significance

2.5.5 Significant Fauna

Two bird species of conservation significance in the NT have been identified at the Airport in the December 2003 Flora and Fauna Survey and are the only fauna species of significance that have been recorded including results of surveys conducted in the 1990s by the FAC.

The Red-tailed Black Cockatoo is a regular visitor to the Alice Springs Airport and the Square-tailed Kite is seen visiting rarely. The Red-tailed Black Cockatoo and the Square-tailed Kite are classified as 'near threatened' under the Territory Parks and Wildlife Conservation Act.

2.5.6 The Environmental Site Register

In accordance with the Regulations, Northern Territory Airports PL has developed and maintained an Environmental Site Register. This Register is divided into three sections including:

1 *Pollution Monitoring and Contaminated Sites*
Containing a digital map of all water and soil monitoring locations, contaminated sites and fuel storage tanks. Each monitoring location on the map is linked to a database containing the results of soil and water quality testing for those sites. Historical and current contaminated sites on the map are linked to information on remedial plans, pollution control equipment installed to prevent further contamination and any additional requirements stipulated by the AEO for those sites.

2 *Sites of Significance*
Containing a digital map of habitats of conservation priority as well as heritage sites and aboriginal sacred sites on the Airport. Each of the sites on this map is linked to a summary of management requirements and operations restrictions defined for those sites.

3 *Land Management*
Containing a digital map of erosion monitoring locations, natural habitats, fauna survey sites, ecotourism facilities, the borrow pit quarry, the sewage treatment facility and paddocks used for camel agistment. Each of the monitoring sites on this map is linked to the database of monitoring results. Habitat types and fauna survey sites are linked to the database of species found at those sites.

2.5.7 Review of EPBC Compliance

As Alice Springs Airport is situated on federal land it is essential that operations comply with the EPBC Act particularly in relation to potential impacts on environmentally significant flora, fauna and vegetation communities. Only the bird species indicated in Table 4 trigger the EPBC Act. Northern Territory Airports PL will comply with all legislative requirements under the EPBC Act.

There is no habitat, nesting or other sites on Alice Springs Airport that have been identified as significant to the survival and reproduction of any of these species.

Common Name	Scientific Name
Black Kite	*Milvus migrans*
Black-breasted Buzzard	*Hamirostra melanosternon*
Black-fronted Dotterel	*Elseyornis melanops*
Black-shouldered Kite	*Elanus axillaris*
Black-winged Stilt	*Himantopus himantopus*
Brown Falcon	*Falco berigora*
Brown Goshawk	*Accipiter fasciatus*
Collared Sparrowhawk	*Accipoter cirrhocephalus*
Little Eagle	*Hieraaetus morphonoides*
Masked Lapwing	*Vanellus miles*
Nankeen Kestrel	*Falco cenchroides*
Oriental Plover	*Charadrius veredus*
Oriental Pratincole	*Glareola maldivarum*
Rainbow Bee-eater	*Merops ornatus*
Red-tailed Black Cockatoo	*Calyptorhynchus banksii*
Rufous Songlark	*Cincloramphus mathewsii*
Southern BooBook Owl	*Ninox novaeseelandiae*
Square-tailed Kite	*Lophoictinia isura*
Wedge-tailed Eagle	*Acquila audax*
Whistling Kite	*Haliastur sphenurus*

Table 4 Bird species present at the Alice Springs Airport listed under the EPBC Act

3. Northern Territory Airports Environmental Management System

3.1 Overview of the EMS

Northern Territory Airports PL remains committed to the development of an environmental management system (EMS) “in accordance with ISO 14001 series” as stated in the previous AES 1999. In accordance with this commitment Northern Territory Airports PL has developed an EMS and is currently in the process of implementing the System into all aspects of operations.

All activities at Northern Territory Airports PL that have the potential to have an impact on the environment are analysed and managed in the EMS. The EMS is being implemented to enable Northern Territory Airports PL 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 its operational activities.

Northern Territory Airports PL EMS is structured on the requirements of AS/NZS ISO 14001:1996 “Environmental management systems – Specifications with guidance for use”. Whilst it is the intention of Northern Territory Airports PL to maintain the EMS consistent with ISO 14001, it is expected that accreditation to the standard, will not be sought at this stage. The following figure shows the various aspects of Northern Territory Airports PL EMS.

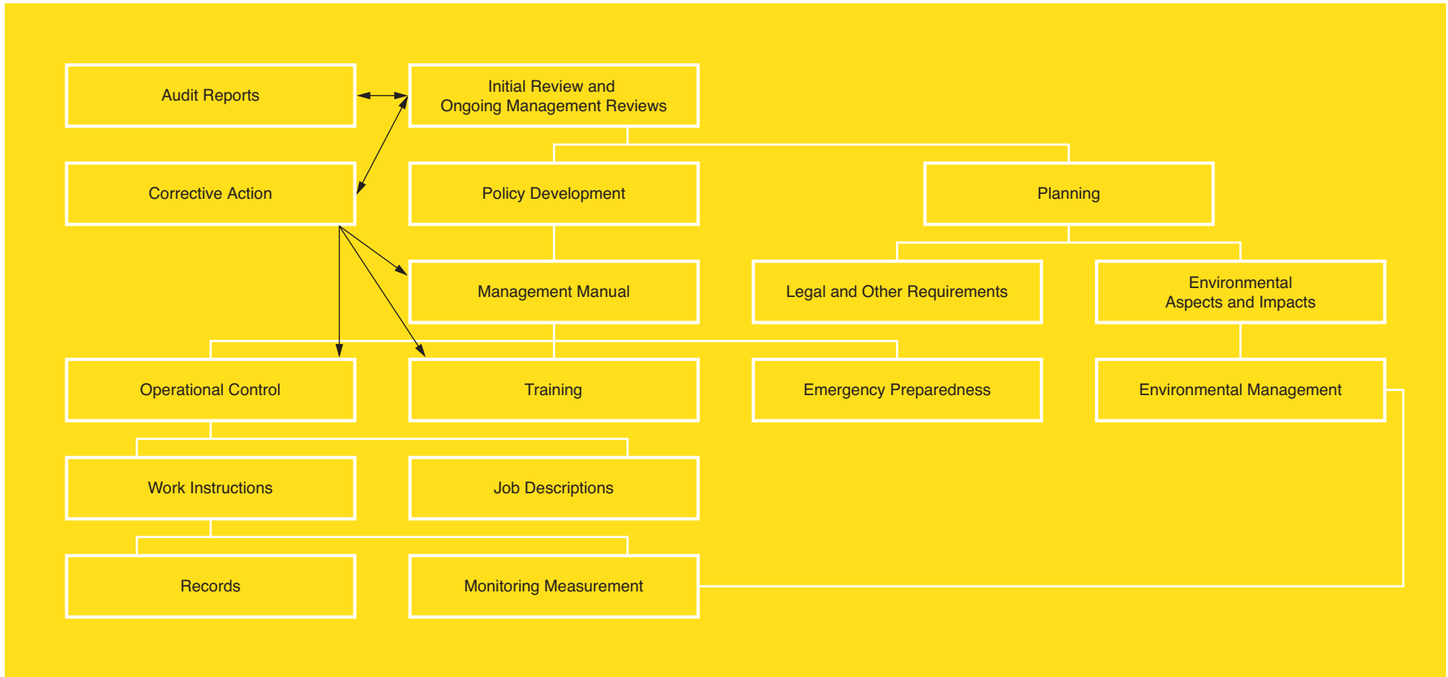

Figure 7 Flowchart of sections of Northern Territory Airports PL Environment Management Structure

4. Commitment to Environmental Management

4.1 Environmental 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;
- Comply with relevant environmental legislation and regulations;
- Set, in consultation with relevant authorities and the community, specific environmental objectives and targets to minimise environmental impact and 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, tenant's customers and neighbours.

Reviews of the Environmental Policy are conducted periodically by the Environmental Management Review Committee and also upon appointment of a new Chief Executive Officer (CEO). The Environmental Policy was last updated in January 2002 and is communicated, implemented and maintained at all levels within the organisation and is prominently displayed so as to be available to the public.

This policy emphasises continual improvement and is consistent with other management policies and programs. The Environmental Policy is used when setting and reviewing objectives and targets for Northern Territory Airports PL. All Northern Territory Airports PL employees and agents are responsible for compliance with the Environmental Policy.

4.2 Organisational Structure and Responsibilities

The primary responsibility for environment issues at Alice Springs Airport is held by the General Manager. The Operations Manager's responsibilities include being the first on-site contact for the AEO as well as managing day to day issues and accidents and emergencies. The Environment Coordinator who is based in Darwin visits Alice Springs Airport regularly and is

4. Commitment to Environmental Management

responsible for the implementation of the AES and conducts monitoring and measurements.

ADG Board and Risk and Audit Committee

The ADG Board is responsible for the overall environmental performance and compliance of Northern Territory Airports PL and the appropriate allocation of funds and resources to discharge Northern Territory Airports PL environmental obligations.

The Risk and Audit Committee (a subcommittee of the ADG Board) deals with areas of significant risk including environmental risk and Northern Territory Airports PL progress in relation to environmental objectives and targets.

Management Team

The CEO is responsible for the provision of resources that are needed to implement and control the EMS. These resources include human resources and specialised skills, technology and financial resources.

Environmental Management Review Committee

The Environmental Management Review Committee membership consists of the Chief Executive Officer, Environment Coordinator (Management Representative and Secretary), General Manager, Finance, General Manager Operations, Technical Asset Manager, Operations Manager – Darwin and Operations Manager – Alice Springs.

Other staff will are seconded if required or particular issues need to be addressed.

EMS Environment Representative

Under the EMS, the Environment Coordinator is appointed as the Management Representative whose responsibilities are outlined in the Northern Territory Airports PL EMS Management Manual and includes:

- Ensuring that EMS requirements are established, implemented and maintained
- Reporting on the performance of the EMS to senior management for review and as a basis for improvement
- Acting as Secretary to the Environmental Management Review Committee

Environment Department

The Northern Territory Airports PL Environment Department is responsible for:

- Ensuring compliance with the Regulation
- Preparing the AES and monitoring its implementation
- Assessing the Environmental Management Plans
- The Environment Department head is part of the Northern Territory Airports PL Management Team and is the EMS Environment Representative
- Providing advice to Northern Territory Airports PL staff on environmental issues
- Assisting all staff to discharge their environmental responsibilities
- Primary contact for DoTaRS and the AEO
- The production of the Annual Environment Report

Employees

To ensure successful implementation of the EMS, it is essential that responsibilities for environmental management are clearly allocated to individual managers and staff. Employees at all levels within the organisation have responsibilities under the EMS and are responsible for the management of environmental issues associated with their day to day duties.

Contractors

Contractors are engaged by Alice Springs Airport to provide a wide range of services at the Airport, including land management, maintenance and construction. Alice Springs Airport ensures that contractors operate to the same high level of environmental management and performance as that adopted by Alice Springs Airport. Alice Springs Airport makes every effort to ensure that contractors adopt sound environmental practices by:

- Providing contractors with clear work instructions covering standards of environmental management of the proposed operation;
- Advising contractors of sensitive environmental features of the site and informing them of necessary emergency action procedures should these features be threatened;
- Requiring some significant contractors providing ongoing services to Alice Springs Airport to prepare a works specific Environmental Management Plan (EMP) each year in relation to their operations; and
- Requiring contractors involved in major construction projects to prepare an EMP in relation to construction works.

Northern Territory Airports PL ensures that environmental management and performance obligations are included in any new agreements and otherwise as our commercial agreements with our various tenants, operators and other stakeholders. This includes requiring significant contractors to prepare an EMP indicating how they intend to manage environmental issues in their operations.

Tenants

Northern Territory Airports PL assists with the environmental performance of all operators of undertakings through liaison and awareness raising, on-site visits and advice, provision of training and audits.

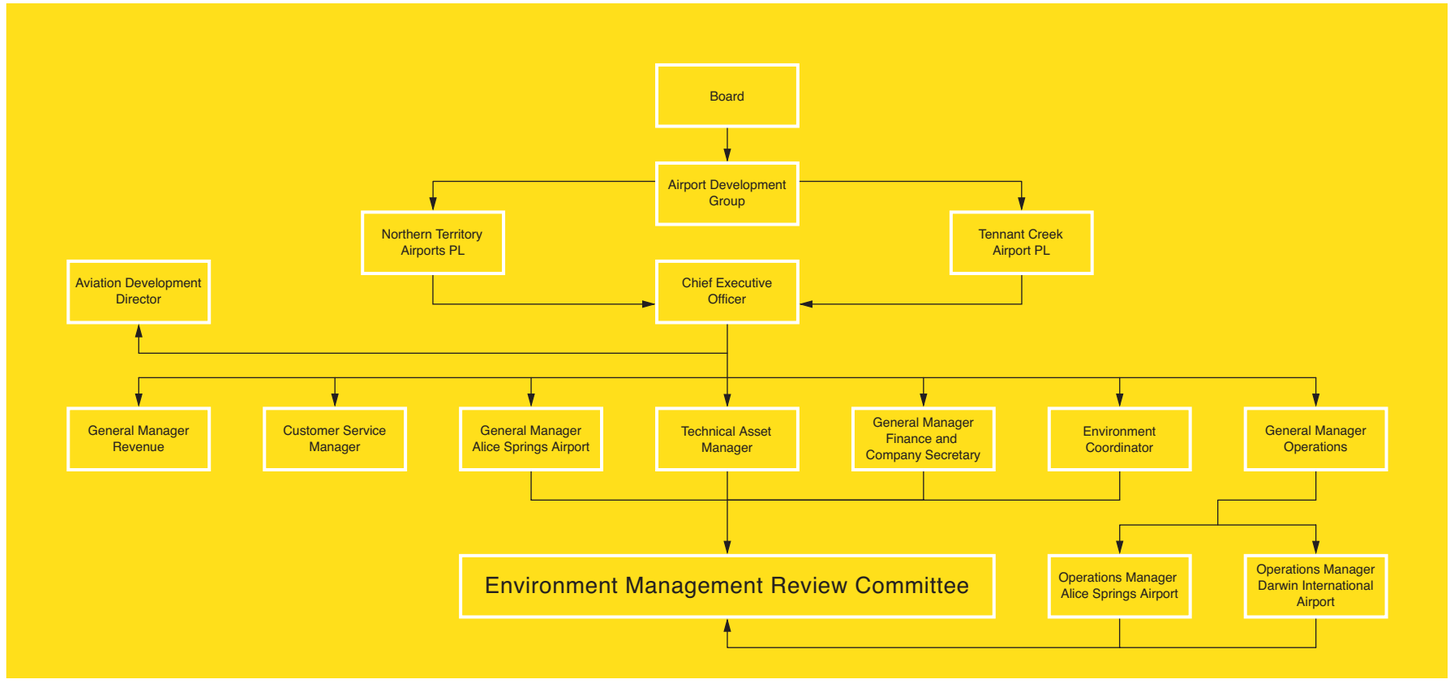

Figure 8 Northern Territory Airports PL Current Organisational Chart

4. Commitment to Environmental Management

Northern Territory Airports PL have a policy that all development considered by the Environment Department to have a considerable impact is to develop and commit to the outcomes of a Construction EMP.

A future focus for Northern Territory Airports PL will be the staged implementation for facilitating further development of Tenant operational EMP's. All Tenants' will be categorised by Northern Territory Airports PL dependant on the nature and scale of activities that are undertaken at the Airport. This process will require extensive consultation and education of tenants and will be implemented gradually focussing foremost on those tenants who undertake activities that are considered to be of highest potential environmental impact.

Environment Forum

Awareness raising and input from tenants in Alice Springs is conducted at the annual Environment Forum. Northern Territory Airports PL will be increasing the number of tenant meetings in Alice Springs in the future.

4.3 Training, Awareness and Competence

Northern Territory Airports PL has established and shall continue to maintain documented procedures to ensure that all personnel, whose work has a risk of creating a significant impact on the environment, have received adequate training. In particular personnel need to be aware of:

- The importance of compliance with the Environmental Policy and objectives and with the requirements of the EMS
- The significant environmental effects of their work, whether actual or potential
- The environmental and economic benefits of improved performance
- Their roles and responsibilities in achieving compliance with the Environmental Policy and objectives including emergency procedures
- The potential consequences of deviating from acceptable procedures

Some specific training that personnel are required to go through is outlined in the following Table 5. Some of the training is conducted by outside organisations and others conducted by the Airport Managers in house.

Training	Type of Training
Airport Induction	In house
Spill Response and Management	Certificate and In house
Wildlife Hazard Management	In house
Chemical Hazard Management	Certificate
Fire Fighting and Clean Up	Certificate

Table 5 Environmental Training at Alice Springs Airport

5. Components of the Northern Territory Airports PL EMS

5.1 Legal and Other Requirements

Northern Territory Airports PL has established and maintains documented procedures to identify and have access to all legislative, regulatory and other applicable policy requirements and codes. The primary regulatory obligations for Northern Territory Airports PL in respect to environmental matters stem from the Act and the Regulations.

5.2 Environmental Aspects and Impacts

5.2.1 Policy

Northern Territory Airports PL have established and maintains a procedure for identifying, examining and evaluating those aspects of its activities that it can control and over which it can be expected to influence, in order to determine those which have, or potentially have, significant impact on the environment. Northern Territory Airports PL categorises and ranks its activities, aspects and associated significant impacts according to their environment risk.

Northern Territory Airports PL ensures that the aspects relative to significant impacts are considered in setting its environmental objectives and that this information is kept up to date. Consideration of environmental aspects is an element of the Management Review.

All environmental impacts or potential impacts were analysed considering the following:

- Likelihood of the impact occurring
- Impact description including areas affected
- The potential consequences
- Whether it is a past, future or ongoing impact
- Normal or abnormal conditions
- Potential regulatory and legal exposure
- Interested parties and extent of concern
- Any data available

5.2.2 Risk Assessment

All aspects and impacts were assessed using an Environmental Risk Analysis Tool modelled on the AS/NZ 4360:1999 Risk Management Standard.

The response to the Risk Assessment provides the following categories:

Low	Manage by routine procedures
Moderate	Specific management needed
High	Senior Management attention: possible increases to management activities needed.
Extreme	Immediate Action. Likely additional management activities needed.

The Management Representative is responsible for the analysis which is done together with operations managers and other personnel twice yearly prior to Management Reviews.

The identification of specific aspects and impacts is discussed further in section 6.

5.3 Environmental Objectives, Targets and Management Plan

Northern Territory Airports PL has established and maintains documented objectives and targets throughout the organisation. When establishing and reviewing its objectives and targets, Northern Territory Airports PL considers legal and other requirements, its significant environmental impacts, its

technological options and its financial, operational and business requirements together with a consideration of the views of interested parties.The objectives and targets are consistent with the Environmental Policy, and include a commitment to continual improvement and the prevention of pollution.

Environmental targets are outlined in the 5 year action programs found in the Environmental Aspects (sections 7-19). All targets will be reviewed annually by the Environmental Management Review process outlined in section 5.8.

The overall objectives of Northern Territory Airports PL in relation to environmental management at Alice Springs Airport are as follows:

- Maintain an EMS that is consistent with the ISO 14001 series (Environmental Management)
- Continue to commit to continual improvement in minimising environmental consequences of activities at Northern Territory Airports
- Continue to define clear environmental objectives and targets for all airport operations; for all environmental aspects and impacts including matters of natural indigenous or heritage value
- Continue to define clear responsibilities and conduct training for staff and contractors in upholding 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 will identify legal and other requirements that apply to environmental management and will keep informed on new legislation and regulations
- Continue to establish procedures for the control, reduction or prevention of pollution caused by airport activities
- Continue to provide programs for monitoring and reporting of pollution within the Airport
- Continue to maintain systems to ensure compliance with all requirements of the Act, Regulations and the EMS
- Clearly define contingency plans for dealing with accidents and emergencies and to ensure adequate training of staff
- Ensure non-conformances are detected, investigated and documented and that corrective and preventative action procedures are adopted
- Continue a system of ongoing auditing of the EMS to ascertain compliance with the objectives
- Ensure periodic review of the EMS to ensure its continuing suitability, adequacy and effectiveness
- Involve the local community and stakeholders in the development of all future AES
- Disseminate Northern Territory Airports PL Environment Policy and AES to all Operators of undertakings, sublessees, licensees, other stakeholders, NT Government and the local community

Objectives that are specific to identified aspects are noted in sections 7-19.

5.3.1 Environmental Management Plan (EMP)

The 1999 EMP commitments including the 2002 minor variation have been completed except for one commitment. This commitment is the review of the Water Resources drilling report which has not been completed. See Appendix 1 for all previous EMP commitments taken from the 2002 Minor Variation.

Development and implementation of EMP's are the primary mechanism for achieving Northern Territory Airports PL's environmental objectives and targets. Individual EMP's have been prepared for both Alice Springs Airport and Darwin International Airport.

The EMP for Alice Springs Airport is a dynamic document and is updated in the light of new information or changed circumstances. The EMP includes objectives and targets for each environmental aspect along with designation of responsibility and a target date for completion. An example extracted from the Alice Springs Airport EMP is provided below.

Impact Number	40
Risk	Low
Objective – overall goal	Ensure mulch and green waste material does not enter stormwater
Target – performance measure	Regular checks of green waste stockpile
Responsibility	Environment Coordinator and Groundstaff supervisor
Resources Required	Time Fees for dumping of old materials
Target Date	September 2004
Date Closed Out	

Table 6 An extract from the Alice Springs Airport EMP

EMP's are reviewed every quarter in conjunction with the AEO and are also considered as part of the periodic Management Review of the EMS.

OPERATIONS

5.4 Operational Control

Northern Territory Airports PL has identified operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives and targets. In order to plan these operations and activities particular attention has been given to:

- Establishing and maintaining Standard Operating Procedures to cover situations where their absence could lead to deviations for the environmental policy and the objectives and targets
- Stipulating operating criteria in the procedures
- Establishing and maintaining procedures related to the identifiable significant environmental aspects of the operation
- Communicating relevant policies, procedures and requirements to suppliers and contractors

5.4.1 Emergency Preparedness and Response

Northern Territory Airports PL has in place an Airport Emergency Plan (AEP) particular to Alice Springs Airport. The emergency plan details how the company will respond to emergency situations and includes measures to prevent and mitigate environmental impacts that may be associated with them.

An emergency response exercise is conducted every two years to test the effectiveness of the AEP. The Environment Department is involved in all emergency testing and resulting debriefs.

Northern Territory Airports PL also has established a comprehensive notification and reporting system to address environmental incidents. Incidents are reported by staff in the field and then entered into an electronic database for follow up. With significant incidents, the responsible company is required to provide a comprehensive report on the incident and detail the implementation of preventative measures.

CHECKING AND CORRECTIVE ACTION

5.5 Monitoring and Measurements

Monitoring and measurement processes provide information to management and stakeholders in relation to environmental performance. Northern Territory Airports PL 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
- Operators of undertakings in order to verify that appropriate measures are in place

Monitoring Program	Frequency
Water /sediment monitoring program	Bi-annual
Soil Erosion Monitoring Program	Annual
Bird counts	Weekly
Flora & fauna surveys	Every two years
Contaminated sites	Bi-annual

Table 7 Currently Established Monitoring Programs at Alice Springs Airport

All data is collected and analysed under the supervision of an environmental scientist. Data from monitoring programs is reviewed annually to evaluate the appropriateness and frequency of the monitoring program. All data is entered in databases connected to the Environment GIS.

Future monitoring is identified under the 5 year plans in sections 7-19.

5.6 Non-conformances and Corrective and Preventive Action

Northern Territory Airports PL has established and maintained procedures for defining responsibility and authority for handling and investigating non-conformance, taking action to mitigate any impacts caused and completing corrective and preventive action.

Corrective and preventive action taken to eliminate the cause of actual and potential non-conformances is appropriate to the magnitude of the problem and commensurate with the level of actual or potential environmental impact. Northern Territory Airports PL implements and records any changes in the documented procedures resulting from corrective and preventative action.

Instances of non-conformance may be identified by the following processes:

- Incidents, accidents or complaints
- Internal audits
- Monitoring of EMS and the physical environment
- Management reviews
- Direction from regulatory agencies eg Airport Environment Officer
- Staff meetings / communication
- Communication forms

All non-conformances are dealt with using a Corrective Action Request (CAR). The decision to raise a CAR is the responsibility of the Management Representative who in the case of Northern Territory Airports PL is the Environment Coordinator. CARs are not closed out until the action taken can be verified for effectiveness in preventing recurrence of the problem or maintaining continual improvement.

5.7 Internal Audit

Northern Territory Airports PL has established procedures and maintains a program for periodic EMS audits which are to be carried out in order to determine whether or not the EMS:

- Conforms to planned arrangements for environmental management and in line with ISO 14001 Standard;
- Has been properly implemented and maintained; and
- Provides information on the results of audits to management.

Northern Territory Airports PL audit program, including any schedule, is based on the environmental importance of the activity concerned and the results of previous audits. Audit procedures outline the audit scope, frequency and methodologies, as well as the responsibilities and requirements for conducting audits and reporting results.

All elements of the Northern Territory Airports PL EMS will be internally audited every twelve months against the ISO 14001 Standard. Most, if not all, sections of the EMS will be audited every 6 months internally.

Audit checklists are drawn up to ensure that Standard Operating Procedures and management plans are being complied with. All non-conformances are recorded on the audit checklist and a CAR is raised for each non-conformance.

Internal audits of the EMS are carried out by suitably trained Northern Territory Airports PL staff not directly responsible for the work area or function being audited.

5.8 Management Review

The Environmental Management Review Committee will review the Northern Territory Airports PL EMS at least annually to ensure its continuing suitability, adequacy and effectiveness. The Management Review process ensures that the necessary information is collected to allow management to carry out its evaluation. The Management Review is documented in the form of minutes and includes recommendations. The Management Review addresses the possible need for changes to policy, objectives and other elements of the EMS, in the light of the results of the internal audit, previous external audits, changing circumstances and commitment to continual improvement.

Management Reviews consider:

- Results from audits
- Corrective action requests issued since the previous review
- The extent to which objectives and targets have been met
- The continuing suitability of the EMS in relation to changing conditions and information
- Concerns amongst relevant interested parties

DOCUMENTATION & COMMUNICATION

5.9 Document and Data Control

A document control system has been established to ensure that the EMS manual, policies and procedures essential to the function of the EMS are current and up-to-date. This system ensures that all obsolete and superseded documentation is no longer accessible but is retained for record keeping purposes. All controlled documents are listed on a register, which shows the title and issue status.

The EMS has been documented in two parts:

1. The EMS Manual which explains the core elements and the application of the EMS with respect to Alice Springs Airport policies and objectives in the consideration of legislative and other requirements; and
2. Detailed EMS procedures which outline implementation of the core elements of the EMS including other related documents such as Standard Operating Procedures and policies on specific environmental issues, standards, guidelines and codes of practice are listed in the EMS document register.

5.10 Records Management

Northern Territory Airports PL has established and maintains procedures for the identification, maintenance and deposition of environmental records. These records include training records as well as the results of audits and monitoring. Records are stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration or loss. Their retention times are established and recorded.

5.11 Communication

Northern Territory Airports PL has established and maintains documented procedures for receiving, documenting and responding to relevant information and requests. These procedures also address necessary communications with public authorities regarding emergency planning and consultations with Airport stakeholders. Environmental communications consists of input from:
External Sources such as:

- Complaints from the public
- Correspondence from Commonwealth and NT Government Agencies (including AEO)
- Information/correspondence from Airport operators
- Information from other industry associations
- Media articles

Internal communications from:

- Correspondence in regards to corrective action requests
- Monitoring programs
- Audit Reports
- Management Reviews

All incoming environmental communications are directed to the Management Representative and are listed on a Correspondence Register.

Northern Territory Airports PL submits a regulatory Annual Environmental Report to DoTaRS detailing progress in relation to commitments listed in the AES, new additions to the Environmental Site Register and an update on the previous years monitoring and auditing results.

AEO

The Commonwealth Department of Transport and Regional Services (DoTaRS) has appointed an Airport Environment Officer (AEO) to manage the administration of environmental legislation on Alice Springs Airport and to oversee adherence to the Final AES. The Alice Springs Airport AEO role has been managed by Low Ecological Services Pty Ltd of Alice Springs, since the Airport was first leased in June 1998. A review in regards to Northern Territory Airports PL ’s progression of the AES is conducted with the AEO on a quarterly basis with Northern Territory Airports PL’s Environment Coordinator and Operations Manager. Northern Territory Airports PL maintains regular weekly contact with the AEO and all monitoring results are passed onto the AEO for feedback.

6. Environmental Aspects

6.1 Introduction

Identifying the sources of potential environmental impact on airports requires a comprehensive review of all airport operations. Prior management practices, the current situation, projected changes within the coming five year period and beyond all require evaluation before development of an effective AES.

In compiling the following sections of this AES, Northern Territory Airports PL has reviewed various aspects of environmental management at Alice Springs Airport, including:

- Environmental management practices that occurred on airport prior to Northern Territory Airports PL acquiring the lease from the Federal Government in 1998 and prior to implementation of the initial Master Plan and AES in October 1999.
- Progress in environmental management on airport within the last AES period.
- Review of changes to relevant legislative requirements and standards within the last management period and of new legislation that has been developed.
- Sources of potential and real environmental impact given priority within the last AES period, current significant sources of impact and prioritising sources of potential environmental impacts that may become prominent in the future.
- Identifying and prioritising realistic goals for the coming AES period within the constraints of available resources, projected expansion of the Airport (in terms of development and air traffic volume), projected service development within Alice Springs City, general climatic, geographic and environmental conditions.
- Identifying current best management practices, technologies and techniques for achieving the goals of the new AES.

6.2 Evaluating Prior Achievements

The first Northern Territory Airports PL AES for Alice Springs Airport came in to force in 1999. Over the next two years of operation it became evident that some issues and the time frames set for some of the goals of the AES were unneccesary, unrealistic or no longer appropriate due to changes in the local environment and the global aviation industry. On the local front three years of above average rainfall resulted in the rapid spread of introduced Buffel Grass, which has reduced dust hazards and erosion potential and excluded most declared weeds, whilst increasing the risk of wildfire and the loss of natural biodiversity. On the world stage the downturn in the aviation industry after 11 September 2001 and the collapse of Ansett Airlines changed the economic focus and projected development status of Alice Springs Airport.

In light of these changes, Northern Territory Airports PL decided to re-evaluate its Environmental Management goals, developing a new table of Environmental Priorities and Actions using a risk assessment approach. This table was completed in November 2001 and submitted to DoTaRS as a Minor Variation to the AES. The Minor Variation was approved by the Minister and published in February 2002. The connection between the original AES, the 2002 Minor Variation and the current AES is essential in understanding the continuity and evolving process of environmental management on Alice Springs Airport.

Specific achievements in environmental management within the last five years are described in this AES and are evaluated primarily against (but are not limited to) the goals and time frames specified in the 2002 Minor Variation.

6. Environmental Aspects

The 1999 Environmental Management Plan commitments including the 2002 minor variation have been completed except for commitment #34, *"Investigate results of Northern Territory Government borehole monitoring on Alice Springs Airport lands and surrounding areas to determine the potential for groundwater contamination and if further investigation is required."* A report on the drilling program conducted by DIPE is integral to this report and this has not been completed. See appendix 1 for all previous EMP commitments taken from the 2002 Minor Variation.

6.3 Five Year Action Plan

From the previous AES period it is evident that unforeseen circumstances can significantly alter environmental management priorities and sources of potential environmental impact can change dramatically within a short period of time. Northern Territory Airports PL recognises this and has adapted its future action plan accordingly.

Over the next five years Northern Territory Airports PL aims to build strongly on experience gained within the first AES period. New initiatives are to be introduced placing a greater focus on the preservation of heritage values, environmental auditing of operations, conservation of natural ecosystems and strengthening of links with the local community of Alice Springs. Through the evolving EMS, Northern Territory Airports PL will continue to enhance environmental management practices on Alice Springs Airport. The EMS will be reviewed annually to ensure it remains consistent with best practice environmental management.

Progress with these objectives will be described in the Annual Environmental Report submitted to DoTaRS and evaluated against the time frames specified in the AES and EMP. Progress with achieving the goals of the AES will be reviewed on a quarterly basis by the AEO.

After consultations with the AEO, Northern Territory Airports PL has agreed to take over the annual Environmental Self –Audit of environmental management practices at Alice Springs Airports. The AEO has agreed to review the Audit findings each year.

6.4 Time Frames and Priorities

Goals of this AES were developed and prioritised based on a risk assessment approach using the Northern Territory Airports PL EMS Risk Management Matrix based on the AS/NZS 4360:1999. The Matrix was used to classify objectives as having a high or lower priority. High priority objectives will generally be completed within the first two years of the AES period before December 2007. Lower priority objectives will be completed before the end of this AES period in 2009. Ongoing actions, such as soil and water quality monitoring will be given priority each year.

Where possible the EMP timeframes for objectives have been spread out over the coming four years to avoid creating unrealistic workloads at any one time that could otherwise hamper achieving goals on schedule.

6.5 Sections

The 2002 Minor Variation to the 1999 AES identified 15 source areas requiring environmental management. Figure 9 describes how those areas fit into the 13 environmental aspect sections of the 2004 AES.

Section Reference	Requirement	Relevant Aspect/Section
3.03	Specify an area within the airport site that the ALC has identified as being a site of indigenous significance, following consultation with relevant indigenous communities and organisations and relevant federal or Territory bodies.	18. Indigenous and Heritage
3.06 (d)	ALC objectives for environmental management must address identification, and conservation, by the airport-lessee company and other operators of undertakings at the airport, of objects and matters at the airport that have natural, indigenous or heritage value.	18. Indigenous and Heritage
3.07 (a)	In specifying environmentally significant areas on airport the ALC must address any relevant recommendation of the Australian Heritage Commission.	9. Wildlife Hazard Management System. 10. Land Management 11. Native Flora and Fauna
3.07 (b)	In specifying environmental significant areas on airport he ALC must address any relevant recommendation of the Department of the Environment, Sport and Territories regarding biota, habitat, heritage or kindred matters.	9. Wildlife Hazard Management System. 10. Land Management 11. Native Flora and Fauna
3.06 (e)	ALC objectives for environmental management must address involvement of the local community and airport users in development of any future strategy.	19. Social and Community
3.08 (a)	In specifying sources of environmental impact, the ALC as the case requires must address that quality of air at the airport site, and in so much of the regional airshed as is reasonably likely to be affected by airport activities.	12. Air Quality, Greenhouse and ozone depleting substances.
3.08 (b)	In specifying sources of environmental impact, the ALC as the case requires must address water quality, including potentially affected groundwater, estuarine waters and marine waters.	7. Water (surface, ground, storm and waste)
3.08 (c)	In specifying sources of environmental impact, the ALC as the case requires must address soil quality, including that of land known to be already contaminated.	8. Soil (erosion, sedimentation and dust) 17. Contaminated Sites
3.08 (d)	In specifying sources of environmental impact, the ALC as the case requires must address release, into the air, of substances that deplete stratospheric ozone.	12. Air Quality, Greenhouse and ozone depleting substances.
3.08 (e)	In specifying sources of environmental impact, the ALC as the case requires must address generation, and handling, of hazardous waste and any other kind of waste.	13. Hazardous Materials 15. Waste, Recycling and Litter.
3.08 (f)	In specifying sources of environmental impact, the ALC as the case requires must address usage of natural resources (whether renewable or non-renewable).	14. Resource Use
3.08 (g)	In specifying sources of environmental impact, the ALC as the case requires must address usage of energy the production of which generates emissions of gases known as 'greenhouse gases'.	12. Air Quality, Greenhouse and ozone depleting substances.
3.08 (h)	In specifying sources of environmental impact, the ALC as the case requires must address generation of noise.	16. Noise

Table 8 Environmental Aspects and how they relate to the Regulations

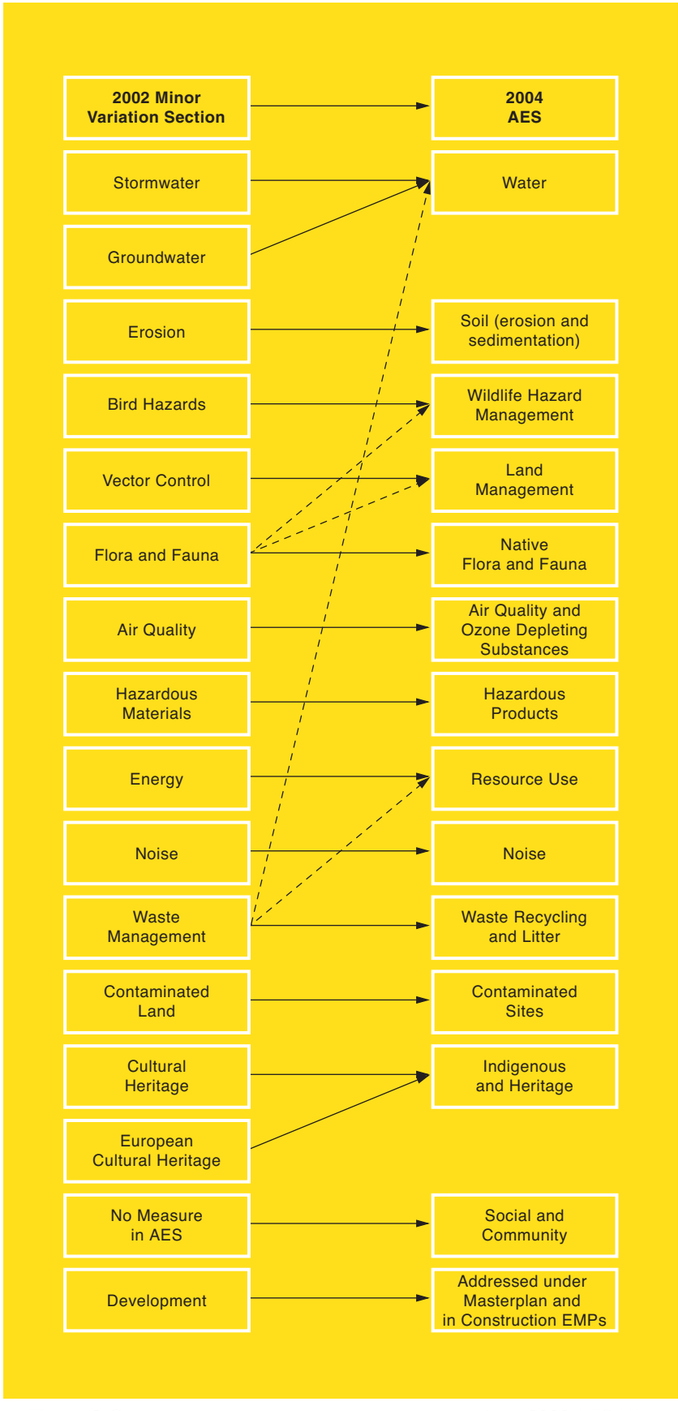

Figure 9 Continuity between environmental aspects of the 2002 AES Minor Variation and the 2004 AES

7. Water *(surface, ground, storm, waste)*

7.1 Objective

Northern Territory Airports PL objective is to prevent or minimise water pollution at all times and comply with legislative standards.

7.2 Overview

The Regulations define water pollution to have occurred if a substance or organisms causes or is likely to cause:

1 The physical, chemical or biological condition of the waters to be adversely affected.

2 An adverse effect on beneficial use of the water, including public health, safety, aesthetic enjoyment or other benefits.

Water 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. At Alice Springs Airport bodies of water covered by the Regulations include natural watercourses, water in channels, drains or pipes and other artificial holding facilities (except sewage pipes and wastewater treatment facilities), groundwater and any other pond or free standing water body.

Groundwater

Alice Springs Airport lies within the Roe Creek bore field catchment and is zoned for aquifer protection under the 1999 Alice Springs Land Use Plan. On a zoning scale from 1 (high level protection required) to 3 (low aquifer protection requirement) Alice Springs Airport contains Zone 1 (developed and northern areas) and Zones 1 and 2 (southern undeveloped areas). These Zones place restrictions on development that can occur in the area and are described in Section 2.1.2. The Airport is also within the identified future town water supply source at Rocky Hill bore field. Airport operations therefore have the potential to impact on the current or future water supply at Alice Springs. Fortunately the risk of this is minimal due to:

- Rainfall runoff being contained within the Airport area, except during periods of extremely heavy rainfall, at which time dilution of contaminants is maximal.
- The water table being located some 50 to 100m below the surface and major aquifers that could potentially be used for water supply are at an even greater depth.
- Clay soils and sand lenses located at various depths above the aquifers, which act respectively as a barrier and to filter water moving down through the soil profile.
- An annual evaporation rate of over 11 times the annual average rainfall, which minimises potential infiltration from spills of toxic or hazardous substances.

As part of NT Water Resources ongoing exploration for future water supply options for Alice Springs it has conducted three test drill sites within the northern half of Alice Springs Airport during 2002/2003. Preliminary results identified small aquifers at around 100m depth and possible water supply aquifers at 468m depth. One of the three bore holes was drilled to over 300m without locating any significant water sources.

The 2002 Minor Variation to the AES specified that Northern Territory Airports PL would review the hydrogeology of the Airport. An official report from NT Department of Water Resources on the drilling program was to be important in this review. However the drilling program and report had not been completed by the end of the AES period. When the NT Water Resources report on soil strata and aquifer formation in the Alice Springs Airport region is produced, Northern Territory Airports PL will review its groundwater policy.

Wastewater

Wastewater includes both sewage effluent and runoff water from airport operations including paint stripping, fire training exercises, aircraft and vehicle wash down and a variety of other cleaning processes.

7. Water *(surface, ground, storm, waste)*

Alice Springs Airport maintains a sewer system that is independent of the sewer system servicing the city of Alice Springs. The Airport sewer drains to a large septic tank and set of evapotranspiration beds located in Butcher's Paddock north of Santa Teresa Road and are of more than sufficient size to cope with current usage levels. Most of the commuter apron operators, car rental facilities, fuel distributors and the main terminal buildings are connected to the sewer system for the disposal of sewage effluent and other waste water. The majority of the General Aviation area is serviced by a separate package treatment system, which also drains to the evaporation beds.

Seven GA operators have their own septic tank and transpiration bed system, as well as all buildings within the 7-Mile Aerodrome precinct. These systems are appropriately sized and maintained to cope with effluent production. Tour group operators conducting bush tours on the north side of the Airport utilise composting toilets to deal with sewage effluent from their facilities. Wastewater other than sewage effluent is passed through a pollution interceptor and directed to the sewer, package treatment plant or storm water drainage system.

Due to the large land area of the Airport and high average evaporation rate any wastewater in the storm water drainage channels is unlikely to reach the Airport boundary, except during an extremely large rain event when dilution is maximal. Typically water is absorbed into the soil or evaporates within a short distance from its entry point into the open stormwater drainage network.

Consequently Alice Springs Airport can be considered to contain and manage all regularly produced wastewater within its boundaries, as such, the risk of waste water polluting natural water bodies under and outside of the Airport boundary is negligible.

Stormwater and Surface Water

Alice Springs Airport contains a network of open stormwater drains that collect rainfall runoff from the aprons, runways and roadways as well as treated waste water from a number of GA apron operators. Once in the storm water channels rainfall and waste water drains south east towards the eastern airport boundary. The Todd River is the major ephemeral river system in the immediate vicinity of Alice Springs and is located close to the north eastern boundary of Alice Springs Airport in an undeveloped area designated for habitat conservation. On the south eastern airport boundary, where runoff from airside operations is directed, the main drainage line of the Todd River is located much further to the east and does not receive runoff from the Airport.

Minor natural drainage channels run across the Airport, typically draining in a south easterly direction towards the lowest elevation point in the Todd River. All of these drainage lines, including the Todd River itself have unconnected drainage networks and only experience occasional intermittent flow after large rainfall.

The high evaporation rate in Central Australia means that free standing water remains for short periods and no permanent natural surface water bodies exist on airport property. The only two semi permanent open water bodies on the Airport are a small pond in the Airport Interpretive Gardens and an emergency water storage facility for fire fighting at the 7-Mile Aerodrome.

Due to the lack of permanent surface waters on airport both artificial and natural temporary water bodies can act as important water or food sources for native birds, mammals, amphibians and invertebrates. These ephemeral waters require appropriate management to ensure that they do not become contaminated.

Potential Sources of Environmental Impact

Potential water contamination sources within the Airport generally relate to a number of distinct areas including:

1 Leakage from above or below ground fuel storage tanks (ASTs and USTs).
2 Spillage of toxic or hazardous substances.
3 Aircraft and vehicle wash down or maintenance in areas with out appropriate pollution containment measures.
4 Waste water that passes through inappropriate or poorly maintained water treatment systems.
5 The use of chemicals such as pesticides and herbicides.
6 Historical activities such as using hydrocarbons for dust suppression.
7 Excessive fertiliser use or sewage spills creating nutrification.

These potential water pollution hazards are mitigated or managed on Alice Springs Airport by the following methods:

1 *Fuel Storage*: Five operators have USTs including NT Fuels (Shell, Alice Springs), Northern Territory Airports PL, Hertz car rental, and the joint BP/Shell fuel farm. Three operators have installed UST integrity monitoring systems and all have regular monitoring programs to check for leaks and comply with the required NT Regulatory Standards. AST's are regularly monitored by visual inspection and comply with the required NT Regulatory Standards. All UST's and AST's are listed on the Environmental Site Register including a description, location and record of monitoring.
2 *Spills*: Spillage of toxic or hazardous materials is monitored through a Standard Operations Procedure on spill response. A component of the SOP is a "Report all Spills" policy (Section 13.2). Spillage of materials such as fuel or oil that may pollute storm water are uncommon and typically of a small volume. Spills that occur on the Airport apron usually evaporate before they are able to enter the stormwater drainage system. The main cause of large fuel spills is overflow during refuelling of large aircraft. Most large aircraft do not fill up in Alice Springs; rather they will only take on sufficient fuel to safely travel to coastal destinations where fuel is less expensive. Consequently spillage from overflow during refuelling is rare.
3 *Wash down*: Northern Territory Airports PL and the AEO continually monitor GA operations to ensure that inappropriate wash down or maintenance procedures are not carried out in uncontained areas. Only superficial wash down of light aircraft is allowed to occur on the Airport aprons.
4 *Waste water*: Northern Territory Airports PL conducts a comprehensive biannual sediment and water quality monitoring program from airside and landside storm water drains (Figure 10) to test that all interceptor systems discharging to the drains are functioning properly and are able to remove contaminants from produced waste water.
5 *Poison use*: The only herbicide currently in use on airport is glyphosate (Round Up) and is used in the maintenance of landscape gardens and for clearing around runway lights and markers. There are no operations on Alice Springs Airport that use large amounts of pesticide or herbicide that are likely to pose a significant risk to human or environmental health.
6 *Historical dumping*: No landfill sites have been identified on Alice Springs Airport that contain materials likely to pose a risk to water quality. Diesel and waste oil has been used historically in areas adjacent to the eastern GA as a dust suppressant, these sites have been established for many years and the hydrocarbons have stabilized in the thick clay soils and have not migrated down into the soil profile further than 2 to 5cm. The biannual storm water drain monitoring indicates that hydrocarbons from these areas do not migrate into the storm water system in rainfall runoff.
7 *Nutrification*: Occasional small sewage spills occur on the RPT apron during unloading from aircraft and are the only known potential source that could produce water nutrification on Alice Springs Airport. Northern Territory Airports PL has recently upgraded two spill kit stations on the RPT apron, both of which contain chemical spill containment gear for the clean up of sewage waste.

An initiative for the coming AES period will be the reconsideration of options to install aircraft wash down bays on the eastern Commuter and western GA apron areas.

7.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted in the following list by a '*'. All specified water quality objectives have been achieved within the appropriate time frame with one exception, #34, *"Investigate results of Northern Territory Government borehole monitoring on Alice Springs Airport lands and surrounding areas to determine the potential for groundwater contamination and if further investigation is required."* This report has not yet been completed by the NT Government.

Northern Territory Airports PL achievements in water quality management since 1999 include:

- In 2000 commissioned a baseline study of water quality in land side and airside drains, a regular biannual monitoring program was developed from the results of this study.*
- Decommissioned the 7-Mile Diesel ASTs and remediated historic contamination below the tanks.
- In conjunction with the AEO successfully liaised with Chartair and facilitated them to install a new heavy metal hopper and hydrocarbon separator at their maintenance hanger to clean waste water before discharge to the storm water drains.
- In conjunction with the AEO successfully liaised with Chartair to ensure that paint stripping operations are only conducted in areas with an appropriate waste water treatment system.
- In conjunction with the AEO successfully liaised with ARFF to facilitate their remediation of the old fire training ground and install a new fully contained training area with waste water treatment system on site. Remediation of soils was completed in February 2001.
- Implemented a "Report All Spills" policy for all Airport operators to accurately identify the sources, type and size of spills on the Airport as part of the new SOP on spill response procedures.
- Investigated the viability of installing a combined use Aircraft wash bay for GA apron users, plans to install a wash bay were deferred to due high costs. Within the coming Strategy period options for wash down bays will be revisited.*
- Documented spill response procedures and ensured staff are appropriately trained.*
- Installed spill response equipment (recently upgraded) on the RPT apron and checked that they are sufficiently stocked on a quarterly basis.*
- Investigated the potential for overflow of sewage to contaminate stormwater, findings indicated that the risk was minimal.*
- Encouraged tenants by written notification to install and maintain interceptors/separators in all hangars where maintenance and wash down takes place.*
- Encouraged airlines to follow good practice when handling sewage and to maintain equipment in good working order.*
- Checked that sewage spill response procedures are documented, spill response kits are stocked and maintained and staff are appropriately trained.*
- Ensured contractors are suitably trained and licensed to handle the chemicals they use on site through the introduction of "Site Rules", a compulsory list of requirements for all personnel working temporarily on airport.*
- Commissioned the development of a database on spill occurrence and related response.

see ***Figure 10*** Monitoring sites at Alice Springs Airport

7.4 Five Year Action Plan

Groundwater

High Priority Actions

- Northern Territory Airports PL will review the NT Water Resources findings from exploration drilling on Alice Springs Airport and conduct a detailed risk analysis on the potential for ground water contamination. The final Water Resources report on the drilling program will be integral to this review.
- Develop a policy to minimise the installation of Underground Storage Tanks wherever practical.

Storm Water and Waste Water

High Priority Actions

- Develop and implement a Standard Operations Procedure (SOP) for water quality testing.
- As part of the new SOP on spill response procedures, implement an "Explain all Spills" policy for all airport operators.
- Provide spill training programs for airport staff and other airport operators.
- Ensure new developments incorporate appropriate waste water management systems into the building design.

Lower Priority

- Investigate options and feasibility of the installation of a contained wash down bay for use by all tenants on the GA and Commuter apron areas.

Ongoing Actions

- Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained.
- Check that fuel spill response procedures are documented and that staff are appropriately trained.
- Continue awareness raising to encourage tenants to manage waste water appropriately and the ways and means of doing so.

Monitoring and Measurements

Current

- Continue water quality monitoring at all sites currently tested using the new SOP - biannually.
- Check that fuel and oil storage facilities meet required standards with regard to bunding, roofing and spill containment -annually.
- Continue monitoring the integrity of the Airport sewage system and ensure its capacity remains greater than maximum potential input to the system. -annually.

Future

- New sites, analytes or testing frequency will be incorporated into the water quality monitoring program if any additional potential contamination sources are identified. Water quality will be assessed against the Regulations 1997 and if appropriate ANZECC water quality guidelines.

7. Water *(surface, ground, storm, waste)*

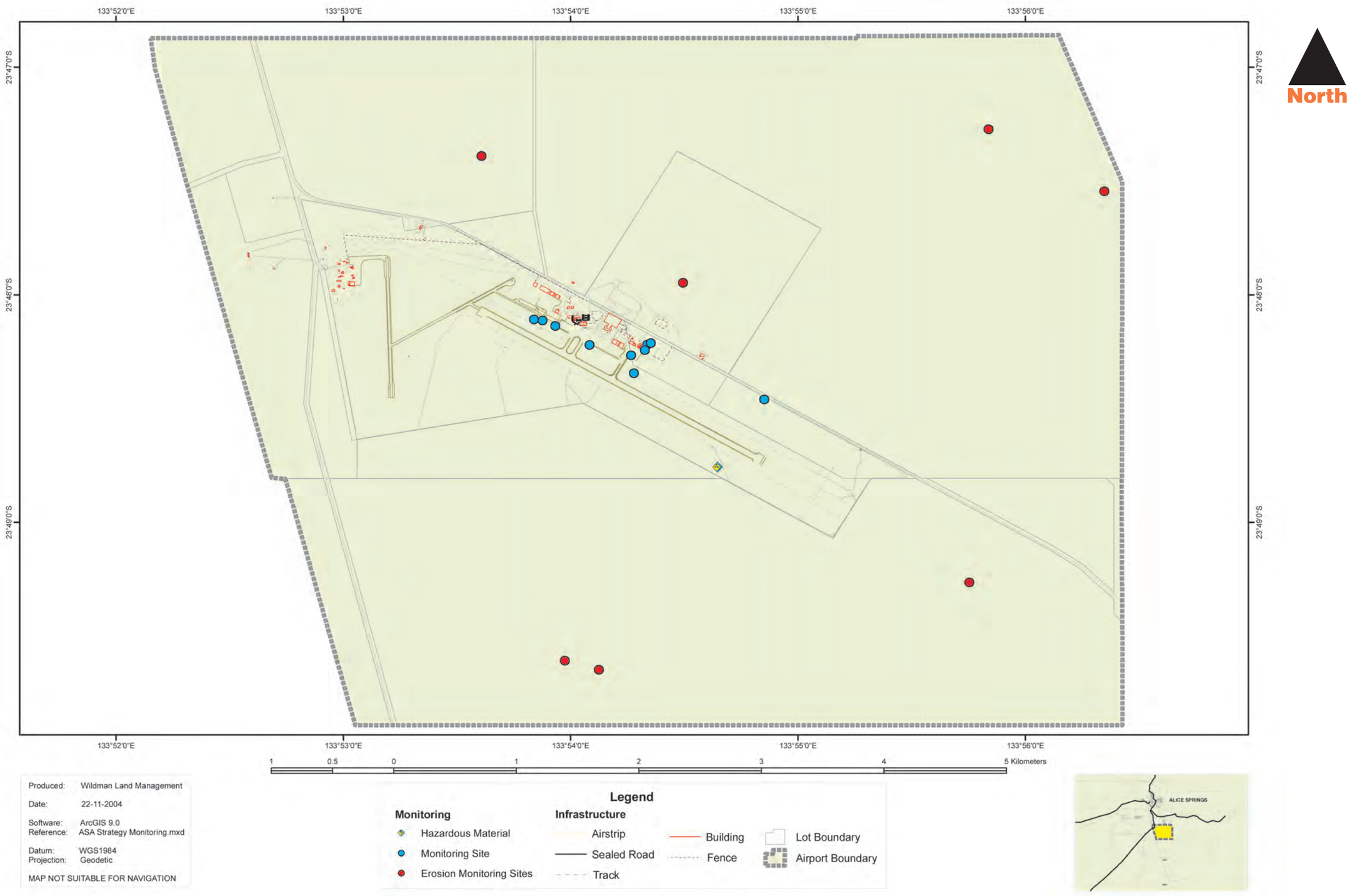

Figure 10 Monitoring Sites at Alice Springs Airport

8. Soil *(erosion, sedimentation and dust)*

8.1 Objective

Northern Territory Airports PL aims to minimise soil erosion, sedimentation and dust on Alice Springs Airport.

8.2 Overview

Soil conservation on Alice Springs Airport generally involves the minimisation of unnatural or excessive erosion by wind or water. Historically wind erosion has been a major environmental issue at Alice Springs Airport due to drought and loss of the majority of ground cover vegetation that otherwise stabilises the soil. Large quantities of wind blown material can damage engines and interfere with vision causing hazards for aircraft in take off or landing.

Potential sources of impact include:

Wind Erosion

The majority of the 3550ha of airport land was originally bought by the Commonwealth to combat wind erosion and to control stock movement in the 1960s and 1970s. Areas south of the Alice Springs Ilparpa Range, including the Airport, were gazetted for dust suppression under the NT *Soil Conservation and Land Utilisation Act* and a variety of soil conservation measures were trialled on airport in relation to this. The Alice Springs Airport Master Plan has set aside 1036ha as dust suppression buffer to complement the NT legislative requirement. The remaining 1980ha of former grazing land on airport that is not used for aviation related purposes is zoned into precincts with designated uses that have a minimal long term risk of creating dust hazards. This includes residential, low impact tourism, horticulture, low intensity grazing, commercial and conservation precincts.

In 1999 and 2001 Alice Springs Airport received well above average rainfall, which resulted in the rapid spread of the introduced Buffel Grass, *Cenchrus ciliaris*. Since this high rainfall period the additional ground cover has reduced the risk of wind erosion and associated dust hazards in and around Alice Springs. The rainfall and prolific ground cover has however produced an increased risk of wildfire in the area. Wind erosion can again become a hazard in severely burnt areas with little or no vegetation cover and is monitored at established erosion sites.

Water Erosion

Water erosion is caused by a concentration of water flowing across the ground surface creating a disturbance of the soil. This can cause gullies and rill erosion along tracks and fire breaks where the flow of water can be concentrated by winrows left from grading. Removal of these winrows can allow water flows to return to sheet flow across roads and minimise further erosion.

Water erosion in undisturbed country is a minor risk on Alice Springs Airport due to the low relief terrain. Consequently, run off water generally does not move at speed and thus does not contain enough energy to drive significant erosion processes. The wide spread establishment of Buffel Grass has also reduced the risk of water erosion.

Sedimentation is rarely an issue on Alice Springs Airport. The Todd River is the only major water course adjacent to the Airport and has been known to deposit large volumes of sediment in the north east corner of the property during floods, this is however a natural process and does not have a significant impact on the native vegetation in the area. Existing natural drainage lines located on Alice Springs Airport are not large enough to transport or deposit significant amounts of sediment into any area. As there are no permanent natural water bodies on or adjacent to the Airport property there is no risk of sediment being transported into sensitive receiving waters.

8. Soil *(erosion, sedimentation and dust)*

Control and Monitoring

Fencing along Santa Teresa Road and Maryvale Roads was a major soil conservation objective completed within the last strategy period. The fencing prevents stray stock and recreational off road vehicles from entering airport property and removes the risk of dust generation from these sources. This project was completed in 2004 and Alice Springs Airport is now fully fenced on all boundaries adjoining public or private lands.

In 2000 Northern Territory Airports PL established monitoring transects to provide information on the rates of erosion/deposition on the Airport over time. These transects were sited across the Airport specifically to gauge erosion and accumulation levels in areas that are most likely to be subject to wind and water erosion processes. Sites were located in bare areas (clay pans) where vegetation is naturally sparse and Buffel Grass had initially been introduced for the specific purpose of stabilizing the soil and reducing dust production. More sites were located in areas where water may flow after heavy rain and in shrub-land that has gradually regenerated since cattle grazing was stopped in the area. The Environmental Site Register (Figure 10) shows the location of these monitoring points across Alice Springs Airport.

Monitoring results have shown negligible erosion occurring across the Airport's erosion monitoring transects since the monitoring program began in June 2000. The average change across the seven monitoring sites shows an insignificant change in average level of -0.22 mm since the commencement of the program four years ago. It is likely that the low level of erosion and accumulation can be attributed to the minimal soil disturbance across the Airport and the high level of ground cover in the area. These results generally indicate that the Airport's land management practices are not causing significant levels of erosion.

8.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a '*' in the following list. All specified soil conservation objectives have been achieved within the appropriate time frame.

Achievements in soil conservation management since 1999 include:

- Works carried out to reinforce eroding runway flanks using compacted crushed rock.*
- The Airfield drains were regraded to reduce batter angles, decreasing the rate of water flow in the drains and the associated risk of erosion.
- The Airport has continued with new fire break maintenance practices developed in consultation with the AEO to minimise erosion whilst improving the management of wildfires on the site. Changes in practices have involved moving away from old grading techniques that left winrows and created a potential erosion hazard. The new techniques involve the introduction of slashing airport boundary fire breaks in areas prone to erosion, disk ploughing on remaining boundary firebreaks and grading winrows back over the fire breaks, thus leaving the ground flat and minimising the potential for the flow of water to be concentrated.*
- A number of slashed firebreaks have been installed within existing paddocks to break up fuel loads, reduce the risk of wildfire removing large areas of soil stabilising vegetation cover and provide access tracks for fire control.
- Annually reviewed the erosion monitoring and management program.*
- Continued monitoring of the erosion transects.*
- Completed fencing along Santa Teresa road and Maryvale road.*

8.4 Five Year Action Plan

High Priority Actions

- Put into practice patch burning as proposed in Bushfire Management Plan to prevent large wildfires from removing soil protecting plant cover.

Ongoing Actions

- Continue visual monitoring of erosion on airstrip flanks.
- Inspect drains to ensure adequate maintenance.
- Continue targeting erosion control on areas where active erosion may occur and to continue with practices such as slashing fire breaks which minimise the risk of erosion.
- Keep up to date with erosion control techniques.

Monitoring and Measurements

Current

- Continue the soil erosion monitoring program at the designated transects established in September 2000 - biannually.
- Results from all erosion monitoring including the photopoint monitoring will be input into the Environmental GIS. The data will be provided to the AEO to assist with an annual review – annually.

Future

- The erosion monitoring program frequency and sites will be increased in the event of drought or severe disturbance (such as bushfire) to vegetative cover.

9. Wildlife Hazard Management System

9.1 Objective

Northern Territory Airports PL aims to ensure the safe operation of all aircraft movements within the vicinity of Alice Springs Airport whilst minimising detrimental effects on local wildlife from airport operations.

9.2 Overview

The question of how to prevent birds or other wildlife interacting with moving aircraft is one of the most difficult and enduring problems faced by airports around the world. Bird strikes to aircraft can damage engines or other equipment and cost airlines millions of dollars each year. There is also a potential risk to human life when strikes cause a plane to malfunction in flight or during take off or landing.

Over the years numerous attempts have been made to find an assured method of preventing birds from entering operational areas on airport, though none have been consistently successful. Most methods have focused purely on harassing problem bird species using bird frite, trained birds of prey or various forms of noise disturbance. In some instances airport safety crews must resort to shooting birds to remove them from runways where they pose an extreme safety hazard.

Northern Territory Airports PL is committed to reducing the risks associated with bird hazards on airports and Alice Springs Airport is a priority site, with one of the highest strike rates in Australia. Northern Territory Airports PL also recognises the fact that the issue of bird hazard management needs to be addressed by a systematic approach, rather than focusing individually on problem bird species. Habitats, predators, water availability, food sources including vegetation, insects and other vertebrates, intra and interspecies bird behaviour and human interactions can all influence the number, type and placement of bird populations on an airport.

In light of this, Northern Territory Airports PL has chosen to expand upon the bird hazard management procedures detailed in the previous AES and has developed and implemented the first stages of a Wildlife Hazard Management System (WHMS). The primary objective of the WHMS is to reduce the number of bird strikes to aircraft, however it also recognises the fact that bird strikes and the current effective harassment technique of shooting birds is detrimental to native bird populations. The WHMS aims to identify and implement a range of techniques for discouraging birds from airside areas that in the long term are both more effective and less destructive than shooting.

The WHMS was introduced across Northern Territory Airports in 2003 and in its first year has focused on collating existing information and networking between various authorities and stakeholders, and increasing accuracy of bird behaviour data recording. To this end all major aircraft operators have been consulted, as well as Airport Operations Officers, Ground Staff, the AEO and local bird experts. Local meetings are held every three months to discuss actions and identify priorities. Meetings to discuss strategies across all Northern Territory Airports PL airports are held every 6 months. Improved accuracy of bird identification, databases on bird strikes and bird observations have been developed and are in use.

The WHMS is now at a stage where more detailed strategies for reducing bird numbers on airside can be implemented. Some strategies will continue to focus on direct bird harassment, whilst others will look at reducing bird attractants, particularly food and water sources and nesting or roosting habitat.

9. Wildlife Hazard Management System

It is envisaged that over time the WHMS will produce a decline in both bird strikes and observed bird activity near the runways on Alice Springs Airport with an associated decrease in the need to shoot problem birds.

Permits

Northern Territory Airports PL currently holds a permit from NT Parks and Wildlife for shooting native species on Alice Springs Airport. Only nominated species can be shot if they pose a direct hazard to aircraft safety. The permit allows for bird or animal carcasses to be retained for identification or gut analysis conducted if required. The permit is reviewed annually and Northern Territory Airports PL aims to decrease the number of native species and number of animals listed on the permit as new wildlife hazard management strategies are implemented.

No permit is required for feral animal control. Airport ground staff and Operations Officers hold a valid firearms licence and are qualified to humanely dispose of feral animals when they pose a safety hazard in airside areas.

2003 Survey

A comprehensive flora and fauna survey was conducted across the Airport in 2003. One fauna survey site was located within airside with the aim of identifying ground dwelling fauna within the area, particularly species that may attract birds of prey. Two species of reptile and 3 mammal species were recorded on the site, including 2 species of mice and feral cats. These results indicated that a more intensive control program of both feral cats and house mice (*Mus domesticus*) would be useful on airside, as the former species is an aircraft hazard and the latter a bird attractant.

Species of Conservation Significance

Two bird species identified on the Airport, the Red-tailed Black Cockatoo (*Calyptorhynchus banksii*) and the Square-tailed Kite (*Lophoictinia isura*) are classified as “Lower Risk - Near Threatened” under the Territory Parks and Wildlife Act (2000). NTAPL aims to minimise the impact of bird hazard management on these species and bird identification training has been implemented to ensure that Operations Officers conducting bird harassment are aware of the significance of these species. Species listed under the EPBC Act have been identified to prevent any impact on endangered and migratory species.

9.3 Achievements

Previous AES objectives, as outlined by the 2001 Minor Variation, are noted by a ‘*’ in the following list. All specified bird hazard management and WHMS objectives have been achieved within the appropriate time frame.

Achievements since 1999 include:

- Developed a Bird Strike database.
- Improved identification and recording of birds by Operations Officers.
- Developed a bird observation database which includes information on bird species, obvious sources of bird attractant and effective harassment techniques.
- Continued with current effective bird harassment techniques.*
- Modified habitat where necessary to discourage birds.*
- Implemented findings of Alison Rowell’s 2000 report on the bird hazard situation at Alice Springs Airport.*
- Voluntary assistance from the AEO which provided primary bird identification training for ASO's. Northern Territory Airports PL has also commissioned a consultant to develop an airport specific bird identification kit.
- Arranged quarterly local meetings and biannual Territory wide meetings with major airport tenants, airport staff and interest groups (e.g. bird enthusiasts) for the purposes of identifying problem bird species, common bird attractants and new methods of bird harassment or discouragement.
- An airport specific bird identification kit has been completed and provided to Operations Officers.

9.4 Five Year Action Plan

The WHMS is an evolving process and new procedures and techniques will be applied and tested as they are identified.

High Priority Actions

- Revise options for the development of a feral cats and house mice eradication plan for airside areas.
- Commission a study to consider options for various land management techniques that will minimise bird attraction.

Lower Priority Actions

- Develop a policy for only using native plants with a low bird attraction potential for new airside or near airside gardens and make airport operators aware of the policy.
- In relation to bird attraction, develop a management procedure for reducing human generated water ponding on airside and make airport operators aware of the policy.
- In relation to bird attraction, develop a management procedure for reducing human generated food sources on airside and make airport operators and patrons aware of the policy.

Ongoing Actions

- Current bird harassment and feral animal control will continue to be used in combination with new techniques.
- Feral animal control techniques on airside will be reviewed annually.
- A review of trends in the bird database information will be conducted at least annually.
- Regular meetings with the AEO and stakeholders will be ongoing.
- Habitats such as nesting or perching areas will be removed from airside where it is practicable to do so and where the overall environmental impact of removing the habitat is justifiable. Habitat removal will only be done with prior AEO consent.

Monitoring and Measurements

Current

- Updating of the bird strike and bird observation databases will be ongoing. Bird strike data will be reviewed annually and used to modify the WHMS program and provide information for annual Parks and Wildlife NT permits.
- Review of the Parks and Wildlife NT permit to shoot native animals and to retain carcasses of native species will be conducted annually.

Future

- Any data collected from future studies in regards to bird control, harassment and land management will be entered into the WHMS database and reported to the WHMS Steering Committee annually.

10. Land Management

10.1 Objective

Northern Territory Airports PL aims to manage airport land in a manner which allows for the continued safe and sustainable running of all operations on airport and does not have a significant impact upon the local environment. In addition airport land management practices will not be detrimental to the natural environment on neighbouring lands.

10.2 Overview

In 1939 the Department of Defence purchased approximately 410ha of land for use as an aerodrome. The original 7-Mile Aerodrome, 17/35 runway and buildings were constructed as a support base for Darwin military bases during WWII. After the war, the 7-Mile Aerodrome continued to support civilian air traffic to Alice Springs. Airport facilities were expanded within the original area in the early 1960's with the construction of the main 12/30 runway and a new terminal and fire station on the northern side of the runways. An additional 170ha of land was purchased north of the new terminal for the installation of transmitter towers. In the late 1960s and early 1970s the Commonwealth Government obtained land surrounding the aviation area for the purposes of dust suppression and controlling stock movements from adjacent pastoral stations. This expanded the Airport to 3550ha, making it the largest airport in Australia in terms of land area. The current terminal was constructed in 1991.

All of the undeveloped land currently managed by Alice Springs Airport was formerly natural shrubland or open woodland used for grazing cattle. Butcher's Paddock, in the North West corner of the Airport, was the only area under intensive management and contained market gardens, a piggery and cattle yards where animals were kept before being sent to the Alice Springs slaughter house.

Since the Airport acquired the additional land, stock have been gradually moved out and undeveloped areas have been allowed to naturally regenerate. Revegetation trials by NT Government in the mid 1960s for dust suppression resulted in Buffel Grass establishment south, west and northwest of the runways. This has aided in forming a variety of grassland, shrub and low open woodland habitats that can be seen on the Airport today. Of this land 1036ha on the south side of the Airport is zoned as a dust suppression buffer under the Airport Master Plan and cannot be utilised for any development or operations that could affect soil stability. The remaining 1991ha of undeveloped land is zoned for various uses such as residential, commercial, tourism and horticultural developments and currently only 4 tenants regularly operate within these areas.

Due to the low levels of activity and an almost complete lack of development within these zones the majority of land currently remains in its natural state and is managed as such.

A small area of 25ha, northeast of the Terminal is zoned as a borrow pit quarry under the Master Plan and was used extensively for gravel base material during construction of the main runway. The quarry now has very little use, although a section is now utilised as an approved green waste disposal area for Alice Springs Airport Groundstaff. Further removal of gravel from the quarry is only likely to occur in the future for large projects.

10. Land Management

Historically, wind erosion producing dust hazards was the major focus of land management issues on Alice Springs Airport. To combat this, the NT Department of Lands Planning and Environment instigated a dust suppression program in the 1960s which included the intensive establishment of Buffel Grass in the southern dust suppression buffer, along with the development of pond banks and staggered furrows. These techniques were also applied to areas north and west of airside in the late 1960s. Since Northern Territory Airports PL acquired Alice Springs Airport the Airport has promoted the retention of natural vegetation in undeveloped areas. Controlled grazing and removal of feral animals and fencing off undeveloped and sensitive land has facilitated this. Three years of high rainfall between 1999 and 2001 have resulted in the rapid, wide spread establishment of Buffel Grass around the Airport to the point where dust generation from airport lands is now minimal. The dominance of Buffel Grass in the understorey across much of the Airport has also excluded most declared weed species and currently there are no significant infestations of declared weeds on airport property.

Potential sources of environmental impact include:

Fire

A major negative effect of the spread of Buffel Grass is the increased fire hazard due to the large fuel loads. As Buffel Grass grows prolifically in the shelter of trees and shrubs wildfires resulting from Buffel Grass fuel loads also has a greater tendency to kill off the over storey vegetation.

Consequently Alice Springs Airport's recent land management focus has been the development, in consultation with NT Bush Fires Council, of a Fire Plan to manage the risk of wildfire on airport land. This has involved the introduction of slashed fire breaks to break up dense fuel load areas and provide better access for emergency fire crews. Camel's agisted on the Airport assist in reducing fuel loads within grazing areas. A second stage of the Fire Plan is due for implementation by 2006 and involves the use of patch burning techniques to remove excess fuel without creating intense fires that kill the over storey vegetation.

Weeds

Buffel Grass is the major introduced species that has a significant effect on native flora and fauna on Alice Springs Airport. However Buffel Grass is not classified as a weed and some pastoralists in Central Australia continue to promote its growth as a pasture species. Herbicide (glyphosate) or hand pulling individual plants are the only proven methods of controlling the spread of this species within residential areas, but neither method can be practically applied to broad scale Buffel Grass control on airport, where it would need to be applied to over 3000 ha. Consequently Northern Territory Airports PL has attempted to limit the spread of this species into pristine areas and has assisted with research studies undertaken by the University of NSW and the CSIRO into Buffel Grass ecology to better understand how the plant functions. Northern Territory Airports PL would consider options to undertake a Buffel Grass control program on airport if, or when appropriate control methods are identified.

Noxious weeds are those weeds that can or do pose a serious threat to human economic or social interests in an area. Management of noxious weeds is the responsibility of the landholder. Though weeds are not currently a major issue on airport, an annual weed survey is conducted and any weeds declared by the NT *Weeds Management Act (2001)* are located and either removed at the time or their location noted for future control programs. The only area with a regular weed control program is the flanks of the runway and around the runway lights and markings. These areas are sprayed with glyphosate to ensure that safety and visibility requirements are met.

Currently 5 species classified as Class B weeds under the *NT Weeds Management Act* are known to exist on airport in small populations. Class B legislation requires that it is neccesary to prevent the growing and spreading of the declared weed. One of the five species, Athel Pine (*Tamarix aphylla*) is also a declared Weed of National Significance (WONS). Though it is not spreading, existing individuals of this species (originally planted in the 7-mile area) are being removed.

Scientific Name	**Common Name**	**Control Region**	**WONS**
Tamarix aphylla	Tamarisk, Athel pine	Alice Springs Region outside of home gardens.	Yes
Calotropis procera	Rubber Bush, Calotrope	S of 16°30' S latitude.	No
Opuntia sp.	Cactus	S of 18° S latitude outside town areas.	No
Tribulus terrestris s.lat.	Cat-head, Caltrop, Bindieye	All of the Northern Territory	No
Xanthium spinosum	Bathurst Burr	All of the Northern Territory	Nominated

Table 9 List of all declared weeds known to exist on Alice Springs Airport

Feral Animals

Historically a variety of introduced animals have occupied airport land. Cattle and horses were stocked on Airport until the 1970s and 1980s respectively. Feral pigs that escaped from Amoonguna settlement in the 1960s were also not eradicated until the 1980s.

All cattle were removed from Alice Springs Airport property when it was purchased by the Federal Government from cattle station owners in the late 1960s and early 1970s. Horses remained in the Butchers Paddock area until 1992. Feral pigs that escaped from Amoonguna settlement in the 1970s survived on airport property until they were removed in the 1980s. Rarely stray cattle still enter airport land from neighbouring Undoolya Station and patrols to repair damages to the perimeter fence are required to prevent this. The only stock animals currently agisted on airport are up to 12 camels managed under two tenant leases.

There are two feral species (feral cat and red fox) and two pest species (European rabbit and house mouse) that currently exist on airport. Within airside areas these species are controlled under the Wildlife Hazard Management System (Section 9) due to the hazard they pose to aircraft and/or their potential to attract birds of prey.

In landside areas the only common feral species is the feral cat. These animals are difficult to control due to a continual influx and dumping of strays from the city of Alice Springs. Baiting on landside areas is also problematic due to the potential to harm domestic cats and dogs from adjacent rural residential areas. Control is currently limited to shooting and live trapping of feral cats and foxes.

Vectors

In 2000 Northern Territory Airports PL commissioned a study into the potential for disease carrying mosquito vectors to breed on airport land. The study was implemented in response to mosquitos breeding in old septic tank systems located on the Airport. The study only identified one species; the common brown house mosquito (*Culex quinquefasciatus*), which is a poor vector for disease.

Since that time the septic systems have been repaired and sealed to prevent further mosquito breeding at those sites and no major mosquito infestations have been reported since then. Northern Territory Airports PL continues to monitor water ponding in airport drains as another potential mosquito breeding site and will respond to any infestations if they occur.

10.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a '*' in the following list. All specified land management objectives have been achieved within the appropriate time frame.

10. Land Management

Achievements in land management since 1999 include:

- Developed and implemented the first stage of the Alice Springs Airport Fire Plan in 2003.*
- Conducted an annual weed monitoring survey.*
- Ongoing weed control in airside areas.*
- Contributed to a CSIRO/NSW University study on Buffel Grass and its effects on biodiversity and fire regimes. Donations were made of both staff time and equipment and Airport land for study trials.
- Managed camel agistment, ensuring stocking numbers are appropriate for fuel load reduction whilst not impacting on soil stability.
- Developed the Wildlife Hazard Management System for management of native and feral animals, (primarily on airside).
- Developed a policy for using low flammability native plant species for new landscaping or gardening developments. A list of appropriate native plant species recommended by the AEO was integral to policy.*
- Monitored possible mosquito breeding sites and removed known breeding sites.*
- Modified structures or drains to eliminate pooling of water where practicable.*
- Controlled landscaping to avoid creating migration corridors or selecting plants known to harbour mosquitoes.*

10.4 Five Year Action Plan

High Priority Actions

- Implement the second stage of the Airport Fire Plan including patch burning and education of tenants on the need for fire control.
- Develop a Fire Plan Map of Alice Springs Airport. The Fire Plan Map will include all recent fire scars and firebreaks on airport. New fire scars, controlled burn sites and new firebreaks will be added to the map on an ongoing basis. The map will link in with existing Environmental GIS database and provide a basis for selection of future patches for fire control.

Lower Priority Actions

- Develop a feral cat management program for landside areas.
- Develop a weed management plan, including GIS mapping of larger weed populations.
- Undertake a widespread Buffel Grass control program on airport if or when appropriate control methods are identified.

Ongoing Actions

- Clear airside stormwater drains of weeds and debris to reduce the potential for water ponding and mosquito breeding.
- Review strategies for dust suppression if dust again becomes a major hazard at the Airport.
- Continue current feral animal control practices.
- Monitor possible mosquito breeding sites.
- Continue to control landscaping to avoid creating migration corridors or selecting plants known to harbour mosquitoes.
- All weeds listed under the NT *Weeds Management Act 2001* will continue to be controlled appropriately.

Monitoring and Measurements

Current

- Continue the annual weed monitoring survey and weed control program. All species identified will be entered into the Environment GIS and schedules for destruction produced.

Future

- Records for all feral species destroyed will be entered into the Wildlife Hazard Management System database including location, species and numbers.
- Upon completion of the fire scar mapping project, all data including air photos will be entered on the Environment GIS and used for monitoring and assisting with future planned burns.
- Areas for all new controlled burns will be entered onto the Environment GIS.

see ***Figure 11***
Land management and vegetation types on Alice Springs Airport

10. Land Management

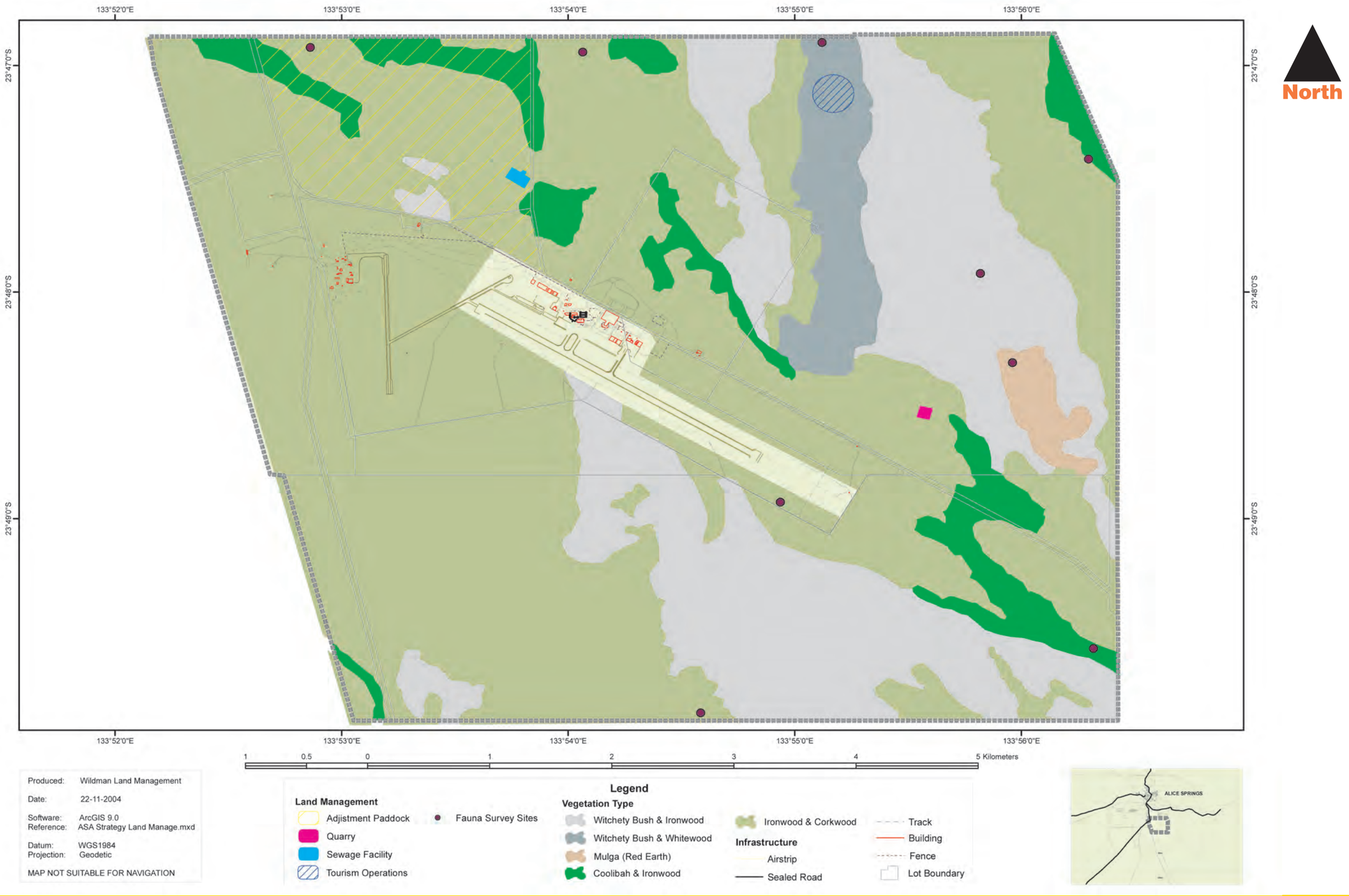

Figure 11 Land management and vegetation types on Alice Springs Airport

11. Native Flora and Fauna

11.1 Objective

Northern Territory Airports PL aims to protect rare and endangered species and any other area of environmental significance on the Airport. Natural habitats, flora and fauna will be preserved on the Airport wherever practicable and management practices will be compliant with relevant legislation.

11.2 Overview

Alice Springs Airport covers 3550ha of land of which approximately 560ha is designated for aviation related use, the remaining 3030ha are largely undeveloped and contain native habitats. Before purchase by the Commonwealth Government in the 1960s and 1970s most of this area was used for grazing cattle and was impacted upon by overstocking and drought. Since then natural vegetation has slowly regenerated, creating the mosaic of vegetation communities evident today. However species diversity remains relatively low due to the type of habitat, the ongoing impacts of feral animals, weeds and particularly introduced Buffel Grass.

Reviews of native flora and fauna existing on the Airport were conducted just prior to Northern Territory Airports PL acquiring the airport lease. Both surveys conducted in 1997, found no evidence of rare or endangered flora and fauna existing on airport land, though the potential for endangered species to exist on airport was not ruled out. In light of this information Northern Territory Airports PL adopted an approach of preservation and continual enhancement of existing natural habitats with a contingency plan in place should any significant species be identified at a later date. The 1999 AES also stipulated that all major developments would require a flora/fauna survey to ensure significant species were not present on site.

In 2003 a comprehensive flora/fauna survey was commissioned by Northern Territory Airports PL and conducted by Desert Wildlife Services. The survey covered both airside and landside areas with the following objectives:

- To describe and map the vegetation communities that occur on Alice Springs Airport.
- To compile an inventory of plant and animal species that occur on Airport land.
- To identify any species or habitats of conservation significance.
- To assess the role of the site as part of the local mosaic of habitat patches.
- To obtain information for use in developing the Wildlife Hazard Management System.

Results from the 2003 survey identified 6 vegetation types on Alice Springs Airport including:

1 Witchetty Bush and Ironwood on sandy-loam rises
2 Witchetty Bush and Whitewood on sandy rises
3 Mulga in valleys with red earth soils
4 Ironwood and Fork-leafed Corkwood woodland on alluvial flats
5 Ironwood and Fork-leafed Corkwood open woodland on alluvial flats
6 Drainage depressions with Coolabah and Ironwood

Five of these habitats are considered relatively common within Central Australia, though the 6th vegetation type (Coolabah and Ironwood) was considered to be locally rare as it comprises only 1% of the Alice Springs municipality, though other isolated patches do occur in both the MacDonnell Ranges Bioregion and in the northern part of the Finke Bioregion. This vegetation type has a higher species diversity and is vulnerable to degradation by wildfire and camel browsing. The 2003 Survey recommended

that portions of this habitat at the airport be protected from these two threatening processes and Northern Territory Airports PL will review appropriate management options within this AES period.

Though not identified as significant by the 2003 Flora/Fauna Survey, Northern Territory Airports PL is aware that the Witchetty Bush and Ironwood community located near the eastern boundary of the Airport, north of Santa Teresa Road has previously been described as the most intact vegetation community of its type remaining within the Alice Springs municipality. This area was noted by botanists from NT Parks and Wildlife in 2001 and by the Arid Lands Environment Centre in 2002. In recent years the spread of introduced Buffel Grass (which has occurred over much of the Alice Springs region) has resulted in a partial decline in the quality of this habitat on airport, though it remains a common habitat type within Central Australia.

The 2003 vegetation survey recorded 181 plant species at Alice Springs Airport. No species of national conservation significance were found. Three species considered significant within the Northern Territory were recorded: *Einadia nutans* subsp. *nutans* in Mulga woodland, and *Ixiochlamys nana* and *Maireana lobiflora* in Ironwood and Fork-leafed Corkwood woodland or open woodland. Of these species *E. nutans* is classified as Rare (in the southern NT Bioregion) whilst *I. nana* and *M. lobiflora* are classified as having a poorly known or 'data deficient' distribution within the Northern Territory. Within this AES period Northern Territory Airports PL will examine appropriate management options to preserve individuals of these 3 species located on the Airport.

The 2003 fauna survey, in combination with previous records from the Fauna Atlas database managed by DIPE, listed a total of 118 species that have now been identified at the Airport site. The list includes 3 amphibians, 23 reptiles, 80 bird species and 12 mammals. None of these species are considered rare or endangered within the NT or at a national level. Two recorded bird species (Red-tailed Black Cockatoo and Square-tailed Kite) are classified as "near threatened" under the *Territory Parks and Wildlife Conservation Act (2001)*. Management of bird species is discussed in Section 9.

11.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a '*' in the following list. All specified flora/fauna management objectives have been achieved within the appropriate time frame. Achievements since 1999 include:

- Continued to carry out developments and site management in a manner that does not impact upon natural biodiversity.*
- Controlled feral animals and declared weed species that would otherwise impact upon native species and habitats.*
- Contributed to a CSIRO/NSW University study on Buffel Grass and its effects on biodiversity and fire regimes. Donations were made of staff time, equipment and airport land for study trials.
- Commissioned a flora and fauna survey of airport land and developed a flora and fauna inventory from that survey.
- Developed and maintained an Environmental Site Register.
- Developed a Wildlife Hazard Management System for native and feral animal control within airside areas and for minimizing the long term impact of control methods on native species.
- Implemented a procedure for using only local native plant species in new airport gardens or landscaping, to limit introduced species being bought onto the Airport. Plant species lists are provided by the AEO.*
- Completed fencing of Santa Teresa and Maryvale Roads to exclude wandering stock and recreational vehicles from the area.

11.4 Five Year Action Plan

High Priority Actions

- Review management requirements for NT significant flora species identified by the 2003 flora and fauna survey.
- Examine the feasibility of preserving the uncommon Coolabah and Ironwood habitat type identified by the 2003 flora/fauna survey and develop a management plan.

Lower Priority Actions

- Commission a survey to identify locations of rare or uncommon plants on airport property and add any sites identified to the Environmental Site Register.
- Implement all other practical recommendations arising from the 2003 flora/fauna survey.
- Assess potential for the implementing grazing enclosure fencing for habitats of significance.
- Consider options for application to register a portion of airport land under the Alice Springs *Land for Wildlife* program.

Ongoing Actions

- If major developments are proposed in areas of intact native habitat on airport land a flora and fauna survey will be conducted before construction begins – in the event.
- Continue to carry out developments and site management in a manner that does not impact upon natural biodiversity – in the event.

Monitoring and Measurement

Future

- The need for future fauna and flora surveys will be reviewed when necessary.
- Enter all species lists from fauna and flora surveys onto the Environment GIS.
- Update all data records on the Environment GIS as new species are discovered.
- Plot the location of any plant species of conservation significance discovered and enter onto the Environment GIS.
- All data entered on the Environment GIS will be used for the purpose of assessing any potential development and to protect and improve habitat

12. Air Quality, Greenhouse and Ozone Depleting Substances

12.1 Objective

Northern Territory Airports PL's objective is to comply with air quality standards as defined by Commonwealth and Northern Territory Regulations and to minimise air emissions from the Airport particularly greenhouse gases and ozone depleting substances.

12.2 Overview

Air quality issues at airports have relevance to the health of people in the area, as well as for the surrounding biological environment and for the health of the atmosphere. The Regulations define air pollution to have occurred when it is likely to cause harm to the environment or unreasonable inconvenience to:

1 The general public in any place, or

2 Persons conducting operations that are not located in the immediate vicinity of the pollutant source.

Air pollutants, as defined by the Regulations may include:

- Particulate matter, including dust, smoke and soot.
- Gases and Vapours including acids, oxides of nitrogen, Volatile Organic Compounds (VOCs), halogen compounds, heavy metal compounds, compounds of sulphur, ozone and carbon monoxide.
- Any substance causing an objectionable odour.

Potential Sources at Alice Springs Airport

The Regulations and this AES considers both stationary and other sources of air pollution. Stationary sources on airport may include:

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

Other sources include:

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

This AES does not deal with air emissions from motor vehicles as they are controlled by NT *Motor Vehicles Amendment Act (2003)*. Aircraft taxiing, landing and departure are regulated under *Air Navigation (Aircraft Engine Emissions) Regulations* and are not the responsibility of Northern Territory Airports PL.

On Alice Springs Airport there are few current 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 dust generated during firebreak maintenance. General operations on airport do not normally produce air emissions over the limits specified in the Regulations (1997), other than emissions covered by the Black Smoke Agreement with DoTaRS for ARFF fire training exercises.

Historically dust has been a major environmental issue at Alice Springs Airport. In years of below average rainfall ground cover can be minimal, resulting in large quantities of wind blown material that can damage engines

12. Air Quality, Greenhouse and Ozone Depleting Substances

and cause a hazard for aircraft in take off or landing. On two occasions dust storms have resulted in the temporary closure of the Airport to all air traffic. Under the Alice Springs Airport Master Plan 1036ha of land has been set aside as a dust suppression buffer and complements the NT gazetted dust suppression area south of Alice Springs Ilparpa Range, under the NT *Soil Conservation and Land Utilization Act (2001)*. The buffer covers the south eastern section of the Airport and lies in the path between airside operations and dust storms carried by the prevailing winds from the south east.

Within the previous AES period three years of high rainfall and an associated rapid spread of introduced Buffel Grass, *Cenchrus*, *ciliaris*, has resulted in dust hazards becoming less common around Alice Springs. The prolific ground cover has however produced an increased risk of wildfire in the area, with smoke and ash from large fires potentially posing as great a safety risk as dust storms. Dust can again become a hazard after fire in severely burnt areas with little or no vegetation cover. After extensive consultations with NT Bushfires Council, Alice Springs Airport has implemented a fire plan to reduce the risk of wildfire on airport property.

Emissions

As Alice Springs Airport is only of a moderate size, primarily catering for regional and interstate traffic, 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. In 2000 total air emissions produced by Alice Springs Airport were assessed by the NT Department of Lands Planning and Environment (now Infrastructure Planning and Environment, DIPE) and the air emissions produced did not exceed National Pollution Inventory (NPI) trigger levels, for any individual operation on airport, nor for the Airport as a whole.

Black Smoke Agreement

ARFF fire training exercises producing Black Smoke are a necessary operation for the continual training of an effective fire and rescue service on airport. A local Black Smoke Agreement made between the Alice Springs AEO, AirServices Australia and DoTaRS allows for this operation to continue provided that the AEO and Alice Springs Airport are informed of the fire training prior to any fires being lit. All fire training exercises producing black smoke are conducted outside the hours of major aircraft activity.

Greenhouse Challenge Program

In 2001 the Airport joined the Greenhouse Challenge program with the aim of reducing greenhouse gas emissions from Airport operations. An air emissions inventory for the 2001 period was developed and an emissions reduction program agreed upon. This agreement was signed by Northern Territory Airports PL in April 2002.

The principal source of greenhouse emissions is carbon dioxide related to energy use in buildings, transport and fixed plant. In the 2001 inventory Alice Springs Airport produced an equivalent of 4,809.6 tonnes of CO_2, over 96% of which resulted from energy consumption. A number of direct actions have been implemented including a review of airfield lighting and plant equipment operation with the aim of reducing energy consumption and greenhouse gas production. Projected emission reduction for Alice Springs Airport is 136.71 tonnes per year.

Air emissions that only impact upon the ozone layer (i.e. are ozone depleting) are addressed in this AES. Recommendations resulting from the Greenhouse Challenge program also targeted ozone depleting substances and Northern Territory Airports PL is in the process of implementing those recommendations.

12.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a '*' in the following list. All specified air quality objectives have been achieved within the appropriate time frame.

Achievements in air quality management since 1999 include:

Dust and Fire Control

- Ongoing rabbit control, to reduce the impact on native vegetation. The rabbit population on airport is now minimal.
- Overlying topsoil with crushed rock to reduce dust creation in airside areas.
- Incorporated dust control measures into requirements for the development approvals process.*
- Regularly maintained fire breaks by slashing fire breaks in areas with unstable topsoil.*
- Designed and implemented the Alice Springs Airport Fire Plan in association with the NT Bushfires Council.*
- Initiated the use of low flammability native plants (species recommended by the AEO) in landscaping.*
- Approved camel agistment on Airport land to reduce Buffel Grass fuel loads, with stocking rates set by the AEO.*
- Continued the Black Smoke agreement with AirServices Australia, the AEO and DoTaRS.*
- Encouraged ARFF to only carry out training when conditions do not adversely impact on other airport users.*
- Completed fencing of all areas of natural vegetation along public roads to prevent uncontrolled stock and vehicle movement.*

Air quality and Emission Management

- An independent audit of energy usage by Johnson Controls and Honeywell in 2000 provided recommendations for reducing power consumption and emissions of greenhouse and ozone depleting substances. Recommendations have been implemented.*
- In 2001 joined the Greenhouse Challenge program and implemented practical recommendations from the program.
- In 2000 NPI reporting requirements for Alice Springs Airport were assessed. No reporting requirements were identified.
- Carried out additional assessments of NPI substances with DIPE to update the inventory as required.*
- Added ozone-depleting substances to the Hazardous Materials register.*
- All line marking activities now use water based paints with a lower number of volatile components.*
- Developed a notification procedure to ensure NT Worksafe is notified of any issues or incidents on the Airport.*

12.4 Five Year Action Plan

High Priority Actions

- Implement the second stage of the Airport Fire Plan including patch burning and education of tenants on the need for fire control.

Ongoing Actions

- Continue implementation of operational methods promoting dust suppression.
- Continue contact with AirServices Australia, the AEO and DoTaRS to ensure the continued effectiveness of the local Black Smoke agreement.
- Reassess NPI reporting requirements if or when there are major changes to airport operations involving significant production of air emissions or there are significant increases in air traffic volume through Alice Springs Airport.
- Continue to phase out the use of air conditioners or refrigerators utilizing ozone depleting substances wherever feasible and encourage tenants to follow suite.
- Continue commitments under the Greenhouse Challenge

Monitoring and Measurement

Current

- Air quality monitoring by qualified consultants will continue periodically and when required.

Future

- Use fire scar mapping project to assess any potential need for revegetation to control dust nuisance.

13. Hazardous Materials

13.1 Objective

Northern Territory Airports PL will minimise the use of hazardous materials on airport as far as it is feasible and to manage hazardous material storage, use and disposal in a manner that minimises the risk to the surrounding environment.

13.2 Overview

Hazardous materials are classified as having any of the following characteristics:

- Explosive or Flammable Liquids/Solids including fuels and oils.
- Poisonous; Toxic; Ecotoxic; Infectious substances.
- Dust hazards (such as asbestos, paint stripping and fine powder chemicals).
- Dangerous Goods (Corrosive substances, radiation hazards, highly reactive substances).
- Hazardous wastes.

On Alice Springs Airport these substances, other than fuels and oils, are rarely used in quantities that pose a significant threat to the environment and stringent regulations apply to their use under occupational health and safety laws. As a matter of occupational health and safety, the Regulations do not examine the storage and handling of hazardous materials and thus Northern Territory legislation applies including the *Dangerous Goods Amendment Act (2003)*, the *Dangerous Goods (Road and Rail Transport) Act (2003)* and the *Waste Management and Pollution Control Act (1998)*.

Potential Sources for environmental impact.

There are only a limited number of hazardous materials used on Alice Springs Airport, with the most common being fuels and oils. The three major fuel stores currently on airport include the Air BP/Shell Fuel Farm, the AirServices above ground diesel tank and NT Fuel's vehicle supply bowsers and UST's. Numerous other GA apron operators store small quantities of fuel or oil or temporarily store waste fuel or oil during de-fuelling or aircraft/vehicle maintenance.

The joint BP/Shell fuel farm is the largest fuel store on airport, this site has inbuilt leak detection systems and monitoring systems for the Jet A1 reticulation supplying the RPT apron.

Other hazardous material stores on airport include:

- Hydrogen gas storage for use in weather balloons. Stored at the University of NSW Balloon Launching Station and the Bureau of Meteorology.
- Herbicides
- Small (gram) quantities of long half life radioisotopes for use in atmospheric research. Stored at the University of NSW Balloon Launching Station and the Bureau of Meteorology.
- Clinical wastes from the facilities of the Royal Flying Doctor Service.
- Batteries and battery electrolytes.
- Paint and paint stripping products.
- Asbestos in the 7-Mile Aerodrome buildings and in a pre 1970s construction material dump.
- Cleaning chemicals including acids and solvents used in aircraft maintenance.
- Waste water containing acid and heavy metals from paint stripping and aircraft maintenance at Chartair facilities.

Asbestos remains as part of the structure of buildings at the 7-Mile Aerodrome. There is no threat to human health whilst the building structure remains undisturbed and all areas containing asbestos have appropriate warning signage. There is also a dump of pre 1970s housing materials south

13. Hazardous Materials

of the main runway that has been confirmed as containing asbestos sheeting. Appropriate warning signage will be erected in the area and the site will be otherwise left undisturbed, as it is located away from operational areas. Investigation of removal and disposal of asbestos from this dump area is currently underway. Asbestos cladding in the old passenger terminal is being removed as part of its refurbishment.

Hazardous acidic waste water containing heavy metals is produced during engine detailing and paint stripping at Chartair facilities. This water is treated on-site using pollution control equipment, and cleaned waste water is discharged into the environment. Management procedures for the interceptor system are being reviewed in conjunction with the AEO.

Hazardous materials incidents at Alice Springs Airport, other than minor fuel spills are extremely rare (less than 1 per year) and all tenants are required to store Material Safety Data Sheets (MSDS) for chemicals they use on site. In the rare event of a hazardous materials incident Alice Springs Airport provides chemical spill clean up kits in easy to access locations on the RPT apron. For large spills of hazardous materials the Airport Rescue Fire Fighters (ARFF) are qualified to contain the spill until specialist emergency crews can be called from Alice Springs.

Auditing

For the past three years the Alice Springs AEO has conducted an annual Self-Audit of airport staff and tenants to review chemical storage arrangements and maintain awareness of the appropriate management of hazardous materials among airport operators. The findings from these self audits indicated that an increasing number of tenants are complying with storage standards, including the use of flame proof bunded cabinets, warning signage and having MSDS available. When issues regarding hazardous materials were identified in these audits they were discussed with the operator.

Northern Territory Airports PL in conjunction with the AEO will continue the self auditing program within the 2004-2009 AES period. The results of the annual environmental audit will be provided to the AEO for review and use in conducting site inspections.

Hazardous Materials Register

Northern Territory Airports PL maintains a hazardous materials register for its own lease holdings, as required under the EMS. The register covers all hazardous materials and products stored by Northern Territory Airports PL staff, as well as an asbestos register for the entire airport. The asbestos register is linked to the Environmental GIS.

Spills Policy

Northern Territory Airports PL has a multi level approach to spill prevention summarised under a comprehensive Spill Response Procedure (SOP). Under the SOP, tenants are required to “Report All Spills” to NTAPL that occur from their operations. This process is aimed at quantifying the sources and frequency of spills at the Airport. Within the coming strategy period reporting requirements will be expanded into an “Explain all Spills” policy with the aim of better assisting tenants to identify the reasons why spills occur and how they can be prevented.

Small spills are cleaned up by the operator using spill containment products. Northern Territory Airports PL provides emergency spill response kits for spill cleanup on the GA and RPT apron areas.

If large spills occur then the ARFF are called in to conduct the clean up and the cost of the callout is billed to the tenant who created the spill. These charges can be significant and are equivalent to a fine, providing an additional incentive to tenants to prevent spill reoccurrence. All of the billed cost to the tenant is directed to ARFF to pay for services provided.

13.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a ‘*’ in the following list. All specified hazardous material management objectives have been achieved within the appropriate time frame.

Achievements in hazardous material management since 1999 include:

- Establishment of an agreement with ARFF to enable NTAPL to access the AirServices Hazardous Materials Database
- Asbestos contained within airport buildings (7 Mile Area) has been identified and appropriately labelled and an asbestos register is kept up to date.*
- An accurate Hazardous Materials Register is maintained, including compliance with MSDS.*
- The emergency spill response program has been reviewed and updated.*
- A “Report All Spills” policy was implemented for airport staff and tenants.
- Hazardous materials spill clean up kits have been installed on the main airport apron. The kits are frequently checked to ensure if they are sufficiently stocked.*
- Checked that fuel and oil storage facilities meet current NT requirements with regard to bunding, roofing and spill containment.*
- Removal of asbestos cladding from old passenger terminal.

13.4 Five Year Action Plan

High Priority Actions

- Further investigation will be conducted to determine type and extent of Asbestos in the old dump site and information entered onto the Contaminated Sites Register.
- Further recommendations for the handling of asbestos materials will be documented in the 7-Mile Aerodrome Conservation and Management Plan under development.
- Spill training will be provided for airport staff and also made available to tenants.
- As part of the SOP on spill response implement an “Explain All Spills” policy for all airport operators. This process aims to encourage airport operators to be more aware of the reasons that spills occur and of procedures to avoid these spills

Lower Priority Actions

- Options to incorporate information into Alice Springs Airport hazardous materials database from annual self audits of tenants will be considered.
- The use of hazardous materials will be phased out where possible and practicable and replaced with substances of a less hazardous nature.

Ongoing Actions

- Northern Territory Airports PL will facilitate environmental self-auditing reviews by airport tenants annually. Results of the audit will be provided to the AEO.
- Tenants using hazardous materials will be required to meet the required NT regulatory standards for storage and handling.
- Spill response procedures will be reviewed and updated.
- The annual Environmental Awareness Seminar for airport tenants, run by the AEO and Northern Territory Airports PL, will continue.

Monitoring and Measurements

Current

- All spills reported will be entered into the spill database and quarterly reports will be provided to the AEO.
- Spill trends will be reviewed on an annual basis and reported in the Airport Environment Report.

Future

- Upon development of a ground safety and environment committee at Alice Springs Airport, spill reports will be presented at meetings for discussion.

14. Resource Use

14.1 Objective

Northern Territory Airports PL aims to minimise the use of non-renewable natural resources wherever practicable and to improve the efficiency of the use of natural resources, particularly energy and water. In addition Northern Territory Airports PL will encourage the use of renewable energy sources.

14.2 Overview

Resource use considered in this section is focused on energy (including electricity usage and engines powered by fossil fuels) and water. Northern Territory Airports PL understands that it is essential that these resources be used sustainably on airport.

Energy

Alice Springs Airport is a relatively large facility that requires significant amounts of energy in its day to day operations and energy costs are one of the major expenses of the Airport. Alice Springs Airport is connected to the power grid of Alice Springs, running on a diesel/natural gas fired power plant. Onsite emergency power is provided via diesel generators.

The main sources of energy consumption on Alice Springs Airport include:

- Aircraft movement.
- 24 hour runway lighting.
- Control tower operations between 7am and 6pm.
- Lighting, air-conditioning, heating appliance, power use and conveyor belts within the terminal buildings, other buildings occupied by Airport staff and Airport tenants.
- Airside vehicle movement including safety and emergency vehicles, security patrols, maintenance and haulage vehicles.
- Landside vehicle movement including security patrols, Airport shuttle services and haulage vehicles.

Energy audits of airport facilities have been conducted at Alice Springs Airport since before the FAC relinquished control of the Airport. The first energy audit was conducted in 1994 and all practical recommendations from that audit have been adopted. Consequently the 1999 AES stated that at that time Alice Springs Airport was using "…the minimal amount of energy as was practically possible."

In 2000 Johnson Controls and Honeywell conducted an independent review of energy usage at Alice Springs Airport. Results of this review found that the Airport still retained minimal energy expenditure and that very few practical changes could be made to improve power use efficiency. The most significant recommendation from the report was for Power Factor Correction equipment to be installed to improve the efficiency of energy consumption throughout the site. The Airport has since worked with Power and Water NT to install the power factor correction equipment in the Airport's power distribution network.

In 2001 Northern Territory Airports PL joined the Greenhouse Challenge program and greenhouse gas emissions from energy consumption were evaluated. In the initial inventory of Greenhouse emissions in 2000-2001, Alice Springs Airport greenhouse emissions were equivalent to 4,809.6 tonnes of CO_2, with over 96% of these emissions due to energy consumption. Several actions identified could not be quantified at the stage of signing the agreement, however implementation of agreed actions are likely

to result in additional savings. A number of direct actions have been implemented including a review of airfield lighting and plant and equipment. Projected emission reductions, resulting from the implementation of the Greenhouse Challenge findings for Alice Springs Airport is 136.71 tonnes.

Overall the ongoing energy auditing procedures indicate that Alice Springs Airport is using close to the minimal amount of energy as practically possible.

Water

All water supply for Alice Springs Airport is currently produced by the Roe Creek Bore field, which also provides water to residential and commercial areas of Alice Springs. Water usage is especially pertinent to Alice Springs Airport as the city of Alice Springs has the second highest rate of water consumption per capita in Australia. The water source is an underground aquifer with a low rate of recharge. It is projected that the Roe Creek bore field can supply water to Alice Springs for approximately another 50 to100 years, at which time insufficient pumping pressure will require another location in the aquifer to be tapped.

Major sources of water use on Airport include:

- Aircraft and vehicle wash down
- Fire training exercises by Airport Rescue Fire Fighters
- Water usage by Airport customers
- Garden maintenance

Northern Territory Airports PL is committed to reducing water usage on airport and a study to identify methods of improving water efficiency will be conducted within the coming strategy period. Landscape gardening policies already ensure use of native gardens with low water requirements around the airside terminal entrance. Tenants are advised to use local native species that require less water than exotic species for their landscaping requirements.

14.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a '*' in the following list. All specified resource management objectives have been achieved within the appropriate time frame. Achievements since 1999 include:

Energy

- Contracted Johnson Controls and Honeywell to conduct an Energy Audit of the Airport in 2000 and implemented practical findings from the Audit including the installation of Power Factor Correction equipment. The Airport has worked with the Power and Water to install the power factor correction equipment in the Airport's power distribution network to improve the efficiency of energy consumption throughout the site. *
- Undertook the Greenhouse Challenge program run by the Australian Greenhouse Office and implemented practical findings from the energy review.*
- Replaced all airport fleet vehicles with current energy efficient models.
- Installed energy efficient lighting within the terminal building and reduced lighting wattage in appropriate areas.
- Conducted ongoing monitoring of Airport power consumption.

Water

- Continued a gardening policy using local native plants with low water requirements for new landscaping initiatives.

14.4 Five Year Action Plan

High Priority Actions

- Options for the commissioning of a water use sustainability study will be considered in order to determine practical means to reduce current water use.

Lower Priority Actions

- Northern Territory Airports PL will conduct a review of alternative sources of energy including natural gas, solar energy and wind power and begin utilising these resources if possible.

Ongoing Actions

- Tenants will continue to be encouraged to use energy efficient building design and the use of efficient technologies through the building and development approvals process.
- Tenants will continue to be encouraged to use local native plants in garden design.

Monitoring and Measurement

Future

- Monitoring will be conducted by a technician into the effectiveness of the load balancing work on the power factor correction equipment.
- Monitoring of the amounts of water used on airport will be conducted prior to and after practical recommendations from the water sustainability study have been implemented.

15. Waste, Recycling and Litter

15.1 Objective

Northern Territory Airports PL will aim to minimise waste production from all airport operations and recycle waste products wherever practicable. In addition the Airport will ensure wastes are properly stored, transported and disposed of.

15.2 Overview

Materials dealt with in this section include:

- Paper wastes, cardboard and plastic packaging waste
- Glass waste
- Green waste from gardening and landscaping
- Food preparation waste
- Waste oil and grease
- Batteries
- Tyres

Waste management is the responsibility of the individual tenant though Northern Territory Airports PL encourages all tenants to adopt waste minimisation strategies. The types and volume of waste production by airport tenants will continue to be reviewed annually through a comprehensive Environmental Self-Audit, developed by the AEO, but now conducted by Northern Territory Airports PL.

Wastes at Alice Springs Airport are collected and handled by local waste contractors, primarily Waste Master. General wastes are disposed of at the Alice Springs Town Council Rubbish Dump.

Due to the geographic isolation of Alice Springs from major centres there is very limited scope for recycling of general waste materials from this site. Currently there is no curb side collection of recyclable materials in Alice Springs.

Under these circumstances the minimisation of produced waste, as opposed to recycling, has the greatest potential benefits to the environment and Northern Territory Airports PL actively promotes waste reduction through measures such as limiting the use of packaging, reusing office paper and discouraging the use of disposable cups, plates and containers. The Airport has also reviewed its waste production and has reduced the number of weekly rubbish collections to better reflect the volume of waste being produced.

Dumping of household waste on airport lands has been a problem in the past, particularly litter dumped along road sides from passing traffic on the Santa Teresa and Maryvale Roads. Residents on properties surrounding the Airport have also been known to dump litter on airport property, particularly building and green waste. The erection of fences along Colonel Rose Drive and Santa Teresa Road has restricted access and greatly reduced the number of incidents of illegal dumping. Additional fencing along Santa Teresa Road and Maryvale Roads was installed in 2004 and completes the fencing of all airport boundaries adjacent to public or private lands. This should further reduce illegal dumping on airport land, as well as having added benefits for habitat conservation, as wandering stock and off-road vehicles are now fully excluded from Alice Springs Airport.

The NT Department of Transport and Works are responsible for the clean up of litter from road verges including Santa Teresa Road, and Maryvale Road. The Department periodically hires contractors for this purpose.

15. Waste, Recycling and Litter

Due to the landscaping program using exclusively native plants, very little green waste is generated. A recent initiative of Northern Territory Airports PL is to stockpile green waste on airport, contained within the old quarry on the north side of the Airport. A number of initiatives including a mulch production system, in Alice Springs will be able to utilise this stockpiled green waste in the future.

15.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a '*' in the following list. All specified waste management objectives have been achieved within the appropriate time frame.

Achievements since 1999 include:

- Encouraged tenants to undertake waste minimisation practices for office, construction, industrial and food wastes by written notification.*
- Encouraged the introduction of practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification.*
- Reduced the number of weekly rubbish collections to better reflect the volume of waste being produced by Northern Territory Airports PL.
- Implemented a monitoring system to discourage illegal dumping on airport property.*
- Cleaned up and disposed of illegally dumped wastes that could be harmful to the environment on Alice Springs Airport.*
- Completed fencing along Santa Teresa and Maryvale Roads to prevent illegal dumping in those areas.*

15.4 Five Year Action Plan

High Priority Actions

- Options for the best use and appropriate stock piling of green waste will be considered.
- Provide education materials for tenants outlining local waste disposal companies and the types of waste they are able to handle.
- Ensure that waste oil and battery storage on airport meets regulatory standards.
- Consider the options and practicality for the implementation of a recycling program taking into account Alice Springs remote location.
- Assess the need and potential for bulk purchasing and supplying materials for appropriate containment of waste materials including waste oil.

Lower Priority Actions

- If recycling is a feasible option, implement recommendations from recycling report including implementation of infrastructure, tenant education and hazardous waste disposal.
- Explore the options for incorporating recycling program into plans for a proposed curb side recycling program by Alice Springs Town Council.

Ongoing Actions

- Annually review the types and volume of waste production on Alice Springs Airport based on the results of the Annual Environmental Self-Audit of Airport tenants.

Monitoring and Measurement

Current

- Continue to record quantities of waste produced on airport from self audits and contracted report.

Future

- If recycling program is implemented, request data from contractor including percentage of waste stream recycled in order to reassess annual recycling goals.

16. Noise

16.1 Objective

Northern Territory Airports PL will minimise noise and vibration associated with ground running aircraft and all other operations and to comply with relevant noise standards.

16.2 Overview

Noise resulting from aircraft in flight and taxing is regulated under the Air Navigation (Aircraft Noise) Regulations and is controlled independently by CASA. For vehicles registered in the Northern Territory vehicle noise is regulated by the *Motor Vehicles Amendment Act (2003)*. Responsibility for ground running aircraft engines, auxiliary power units and all other airport operations lies with Northern Territory Airports PL.

Alice Springs Airport has had no serious noise related incidents since the inception of the 1999 AES and noise complaints are rare. In terms of land area Alice Springs Airport is the largest in Australia and as such has significant undeveloped buffer zones with Alice Springs rural residential areas to the north. In addition the flight paths to major destinations are generally clear of the urban centre of Alice Springs.

For the initial Master Plan and AES noise levels were assessed using the Australian Standard AS2021 -1994 “Acoustics –Aircraft Noise Intrusion –Building Siting and Construction” the equal energy index Australian Noise Exposure Forecast (ANEF).

A new ANEF contour study was commissioned for the current Master Plan and includes both noise generated by aircraft movement and ground running operations. 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 of Alice Springs Airport.

Development

New developments need to be examined in terms of:

1 The potential impact of noise generated from the development, and
2 The potential impact of Airport noise on the development.

16.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a ‘*’ in the following list. All specified noise management objectives have been achieved within the appropriate time frame.

Achievements since 1999 include:

- Investigated individual noise complaints (very rare) and responded as needed.
- Ensured that new developments on airport comply with noise standards during construction and assessed likely noise levels from ongoing operations.*
- Conducted regular qualitative noise monitoring of airport operations.
- Reviewed existing noise contour levels surrounding Alice Springs Airport and compared current noise levels with predicted values described in the 1999 AES.

16.4 Five Year Action Plan

Ongoing Actions

- Investigate individual noise complaints and respond appropriately.
- In the absence of significant noise complaints continue to conduct qualitative noise monitoring on an ongoing and opportunistic basis.
- Evaluate the potential for noise generated by new developments on airport to impact upon other airport users or surrounding properties.

16. Noise

- Evaluate the potential for noise generated by airport operations to impact upon the sustainable running of new developments, particularly residential developments.
- In the event of major changes to airport operations or unprecedented increases in air traffic volume Northern Territory Airports PL will revaluate the impact of noise levels at that time.

Monitoring and Measurement

Current

- Record all noise complaints and report to the AEO on a quarterly basis and report in the Annual Environment Report.

Future

- Conduct noise monitoring in response to complaints or any future expansion.

17. Contaminated Sites

17.1 Objective

Northern Territory Airports PL objective is to prevent the creation of new contaminated sites and to monitor and remediate existing contaminated sites on Alice Springs Airport.

17.2 Overview

For the purposes of this AES, contaminated sites are classified as soil or water bodies that have received, through accident or mismanagement, quantities of toxic substances considered harmful to the environment or people.

Potential Sources of Environmental Impact:

As Alice Springs Airport is within a low (semi arid) rainfall zone, free standing water bodies are rare and potential contamination is usually restricted to soil pollution. The potential for groundwater contamination is minimal due to the depth of known aquifers (below 50-100m depth) and the existence of impervious clay soils at various depths above the aquifers. Water contamination issues are discussed in Section 7.

Alice Springs Airport has a low risk of contaminated site formation due to its relatively small size (primarily domestic flight services) and the associated small quantities of toxic and hazardous materials that are in use on airport. In addition, most airport operations that use these substances occur either indoors or on concrete/tarmac areas where the risk of contamination reaching exposed soil is low.

All operators on airport have a general duty to protect the environment and are responsible for any pollution that occurs as a result of their operations or management practices. Where contaminated sites are identified the person or company responsible will be informed of their general duty and required to remediate the site at their expense to standards defined by Northern Territory Airports PL and the AEO.

Contaminated Site Register

Northern Territory Airports PL has developed a Contaminated Sites Register as a component of the Environmental GIS for Alice Springs Airport. All known current and historic contaminated sites are listed on the register, along with any remedial plans that have been completed or are underway. Measures implemented to prevent further contamination from occurring at the site are also recorded on the register (Figure 6).

Currently there are four contaminated sites on Alice Springs Airport, they include:

1. A small waste water evaporation pit containing heavy metals from maintenance practices at Chartair's facilities. Hydrocarbon contamination on the site has fallen below threshold levels and the AEO has recommended that the contained area of the pit be allowed to continue natural remediation on site. A pollution interceptor was installed to manage waste water disposal from the above tenant's facilities, however soil quality monitoring by Northern Territory Airports PL early in 2004 showed that the system is not operating effectively. The AEO has been informed of this occurrence and Northern Territory Airports PL will work closely with the AEO and Chartair to resolve the situation as soon as possible.
2. Minor hydrocarbon water pollution produced by ineffective cleaning of waste water (containing AFFF fluid) from the Airport Rescue Fire Fighters (ARFF) training ground. Only small amounts of contaminated water are produced and there is no evidence of it contaminating the surrounding soil. By agreement with both Northern Territory Airports PL and the AEO, ARFF awaits the results of a national AirServices study into removing AFFF linked hydrocarbons from wastewater before further action will be necessary. Any findings from the study will be implemented to prevent AFFF linked hydrocarbons from passing through the pollution interceptor system.

17. Contaminated Sites

3 A large grease trap outfalling to sewer that has not been in use for over ten years has been recently tested and found to be over the scheduled limits for hydrocarbons. Planning for the remediation and decommissioning of this trap is currently underway as a high priority.

4 Recent tests of materials from an old building dump south of runway 12/30 has revealed the presence of asbestos. This site is airside and has not been used or disturbed for well over 10 years. Planning is currentlly underway to safely remove and dispose of the materials.

17.3 Achievements

Northern Territory Airports PL has made significant progress with remediation of existing and historic contaminated sites on Alice Springs Airport as well as implementing systems to minimise the risk of creating new contaminated sites. Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a '*' in the following list. All specified contaminated site management objectives have been achieved within the appropriate time frame.

Achievements since 1999 include:

- Liaised with AirServices Australia, resulting in remediation of the old ARFF fire training ground soil contamination and installation of a new fully contained training ground facility.
- Worked with the AEO and Chartair to remediate hydrocarbon soil contamination in the former Chartair waste water evaporation pit and the installation of a separator system aimed at preventing further contamination at this site.*
- Decommissioned the Alice Springs Airport diesel tanks at the 7-mile aerodrome and removed contaminated soil beneath the tanks for disposal and bioremediation off-site.*
- Worked with Alice Springs Aeroclub to remediate current and historic hydrocarbon contaminated soil on their lease and to prevent further contamination occurring at that site.
- Worked with Aircraft Engineering to remediate current and historic hydrocarbon contaminated soil on their lease and to prevent further contamination occurring at that site.
- Removed and remediated historic hydrocarbon contamination stored within an old sump system under the RPT apron.
- Implemented a biannual soil and water quality monitoring program in all airside drains to test for contamination produced by airport operations, in line with recommendations from a baseline environmental monitoring survey conducted in 2000.
- In conjunction with the AEO Northern Territory Airports PL has hosted an annual Environmental Awareness Seminar for all airport tenants for the past 3 years. The seminar informs tenants of their duty to prevent contamination from occurring on airport, methods of achieving this aim and the penalties for non compliance.
- Investigated the potential for historical contamination at the sand pit quarry north of the terminal. Surveys of the site and historic records by Northern Territory Airports PL and the AEO concluded that no contamination has occurred.*
- Created a contaminated site register and developed a risk based technique for assessing existing contaminated sites and priorities for remediation as a component of the 2002 Minor Variation to the AES. *
- Implemented a "Report All Spills" policy, requiring tenants to report all spills that occur on their lease to Alice Springs Airport as part of a new Standard Operations Procedure for spill response.

17.4 Five Year Action Plan

High Priority Actions

- Remediation and decommission grease trap on the eastern GA apron.
- Continue to work with the AEO and Chartair concerning the remediation of contaminated sites and hydrocarbon interceptors.
- Liase with licensed operators for the safe removal and disposal of asbestos from old building dump south of the runway.
- As part of the Standard Operations Procedure on Spill Response implement an "Explain All Spills" policy for all airport operators. This process aims to encourage airport operators to be more aware of the reasons that spills occur and of procedures to avoid these spills.
- Continue to monitor the pollution interceptor system installed by ARFF at the fire training ground.

Ongoing Actions

- Soil and water monitoring programs will continue biannually at Alice Springs Airport. Monitoring will continue at existing locations and expand to incorporate new locations as appropriate.
- Tenants with below ground fuel storage facilities will be checked regularly to ensure they continue to monitor the integrity of those tanks.
- Maintain the contaminated site register and continue with tenant consultation and awareness raising initiatives to minimise the potential for creation of new contaminated sites.

Monitoring and Measurements

Current

- All monitoring results for contaminated sites will continue to be entered into the Environmental GIS. All data will be provided to the AEO on a quarterly basis and summarized in the Annual Environment Report.
- The Contaminated Site Register will be maintained and ongoing actions reviewed annually (or more frequently if results are high) based on monitoring results.

Future

- Map an accurate boundary for the dump site containing asbestos and enter onto Environment GIS.

18. Indigenous and Heritage

18.1 Objective

Northern Territory Airports PL aims to preserve all currently identified indigenous and heritage sites located on Alice Springs Airport. In addition if new sites are discovered they will be preserved wherever practicable and procedures are in place to consult relevant stakeholders in this event.

18.2 Overview

At the time of writing this AES Northern Territory Airports PL is aware of one heritage site and two recorded sites of significance to traditional owners located on Alice Springs Airport.

Heritage

The heritage site is known as the 7-mile Aerodrome and consists of a complex of buildings constructed in 1940. The Airport was used for military and civilian operations throughout the 1940s. Civilian services increased in the 1950s and 1960s and this sparked the development of extra facilities at the 7-mile Aerodrome. The main 12/30 runway became operational in 1961 and a new terminal and fire station were opened north of the runway in 1965. The Airport continued to expand in the 1970s and 1980s and airport facilities such as fuel tanks, hangers and airline catering were installed. The current terminal to the east of the 1965 terminal was completed in 1991 to accommodate the increased tourist traffic to the Northern Territory. The original 1940s terminal area has been retained more or less intact.

All of the buildings of heritage value within the Aerodrome are currently occupied by airport staff or tenants, including the control tower, old terminal and hangers and service buildings. The continual occupancy by tenants has played a significant role in ensuring that the buildings have remained intact and have not become derelict over the years.

A Management Plan of the heritage values of the 7-Mile precinct is under development and describes the Aerodrome as “one of the most intact airfields” from the WWII period that exists in Australia today. The 7-mile Aerodrome has benefited greatly from the lack of over development in the area particularly of a built nature and its historic setting has remained largely undisturbed.

The 7-Mile Aerodrome is listed on the Northern Territory Airports PL Significant Site Register.

Indigenous Cultural Heritage

Two recorded Sacred Sites relating to the traditional owners (Arrernte group) of the Alice Springs region have been identified on Alice Springs Airport. The two sites are located on undeveloped land and are under no immediate threat from development.

Northern Territory Airports PL has applied to the AAPA to conduct an investigation into the potential for additional Sacred Sites on Alice Springs Airport, within the zones of potential development. The AAPA investigation will also include the two known Sacred Sites to determine their cultural significance. Once the investigation is complete the AAPA will issue an Authority Certificate to Northern Territory Airports PL identifying the management provisions for the two sites, as well as for any other sites that are identified. The Authority Certificate, to be held by Northern Territory Airports PL, indemnifies the Airport against prosecution under the Northern Territory *Aboriginal Sacred Sites Act (1989)*, provided the management provisions are met. This process will involve extensive consultation with the NT Government, the Central Land Council (CLC) and Aboriginal Traditional Owners.

18. Indigenous and Heritage

The two recorded Sacred Sites are listed on the Northern Territory Airports PL Significant Site Register.

18.3 Achievements

Previous AES objectives, as outlined by the 2002 Minor Variation, are noted by a '*' in the following list. All specified heritage management objectives have been achieved within the appropriate time frame.

Achievements since 1999 include:

- Appointed consultants to develop the 7-Mile Aerodrome Heritage Management Plan and produced the draft plan. This process has taken longer than expected due to the limited time of the heritage architect. *
- Historical records have been compiled from the official documents from the 7-Mile area and anecdotal interviews from long time residents are being obtained.
- In accordance with good heritage protection practice, all heritage buildings have been more or less continually occupied by airport staff or are otherwise tenanted.
- Applied and obtained documentation from AAPA defining recorded indigenous cultural sites on Alice Springs Airport.

18.4 Five Year Action Plan

High Priority Actions

- Provide comments to and work with DIPE in regards to the proposed registration of the 7-Mile Aerodrome under the *NT Heritage Conservation Amendment Act (1998)*.
- Review in conjunction with Office of Environment and Heritage the 7-Mile Aerodrome Heritage Management Plan.
- Obtain an AAPA Authority Certificate indemnifying NTAPL under the NT Aboriginal Sacred Sites Amendment Act.

Lower Priority Actions

- Implementation of the 7-mile Heritage Plan will be assessed in conjunction with the AEO, ABC and Department of Environment and Heritage.

Ongoing Actions

- Renew the Authority Certificate from the AAPA for all development precincts on Alice Springs Airport as required.
- Work on developments will be stopped immediately if culturally significant artefacts are found and the relevant authorities informed.
- Update the Significant Site Register in the event of new indigenous or heritage sites being identified on airport.

Monitoring and Measurements

Future

- Any new sacred sites identified will be mapped and entered onto the Environment GIS with an appropriate buffer zone to prevent disturbance.
- Any new development will be assessed based on the Significant Sites Register Map and database.

19. Social and Community

19.1 Objective

Northern Territory Airports PL aims to maintain and increase involvement with local environmental initiatives and promote positive relations with Alice Springs community groups. In addition Northern Territory Airports PL will work with airport tenants and operators to ensure best environmental practice continues to be implemented in all airport operations.

19.2 Overview

The Airport is located astride the southern boundary of the Alice Springs Municipal Planning Area. With a population of approximately 28,000 people, Alice Springs is the only major population centre within a large area of the Territory.

Within the last AES period Northern Territory Airports PL has continued to play an important role within the community of Alice Springs, providing sponsorship to a number of local clubs and sporting groups as well as remaining an active member of local industry and environmental organisations. Keeping strong links with the local community is the most effective way of communicating the environmental objectives and values of Northern Territory Airports PL to the public, as well as, for gaining an independent perspective on how the public views Northern Territory Airports PL achievements and management practices.

Internally it is also vital to maintain a positive working relationship with the AEO, tenants and other airport operators to ensure that the objectives of the AES can be carried out most effectively. To this end Northern Territory Airports PL has worked cooperatively with the Alice Springs AEO to provide an annual Environmental Awareness Seminar for all airport tenants. The Seminar, first held in 2001, provides tenants with a variety of information and updates on environmental management requirements as well as providing a forum for airport operators to ask questions and provide comment of their own.

Airport tenants have also been invited to join the local committee reviewing the Alice Springs Airport Wildlife Hazard Management System (Section 9). This provides another forum for tenants to view Alice Springs Airport's ongoing commitment to environmental management and allows for tenants to put forward their own views and ideas.

Alice Springs Airport is part of the dynamic and close knit regional community of Alice Springs, allowing for regular day to day contact between airport management, the AEO, staff and tenants, as well as local residents. Such circumstances provide frequent opportunities for issues to be discussed and advice given in a relaxed environment.

Aboriginal Traditional Owners

Indigenous people account for 12.8% of the population of Alice Springs, one of the highest proportions of any Australian city. The central, eastern, western and southern Arrernte groups have all occupied land around Alice Springs at some time. Northern Territory Airports PL acknowledges the significant contributions of the Arrernte people to the community of Alice Springs and continues to foster a positive relationship with the local Aboriginal community. Traditional Owners are fully consulted in relation to any aspects of Indigenous heritage identified on site.

19.3 Achievements

Achievements in community development and relations since 1999 include:

Alice Springs Community

- Continued assistance provided to the Friends of the Todd group to undertake land management in the Todd River through the donation of machinery for weed and fire control works.
- Donation of the use of line marking equipment and staff time for line marking Anzac Oval in the township for special community events.
- Northern Territory Airports PL stores equipment and portable infrastructure for the Finke Desert Race and hosts the starting area of the race.
- Northern Territory Airports PL contributes to the Masters Games and Netball tournaments by providing complimentary car parking.
- Northern Territory Airports PL has active membership of the Central Australian Tourist Industry Association and the NT Chamber of Commerce and Industry.
- Northern Territory Airports PL initiated consultations with the Alice Springs *Land for Wildlife* coordinator, with the aim of potentially joining this community program.
- Donated numerous prizes and gifts to various community groups and events. Of particular note is the donation of prizes to the Alice Springs Craft Awards.
- Worked with NT Bushfires Council to develop a Fire Plan for Alice Springs Airport.
- Donated staff time, equipment and the use of Airport land to a CSIRO/University of NSW study on Buffel Grass ecology.
- Cooperated in a study of Melaphorus ants with postgraduate students from Macquarie University.

Airport Tenants and Operators

- Hosted and facilitated an annual Environmental Awareness Seminar for Airport tenants since 2001. The Alice Springs AEO and Alice Springs Airport work closely together to produce the Seminar.
- Quarterly meetings with the AEO and tenants regarding the implementation of the Northern Territory Airports PL Wildlife Hazard Management System.
- Participated in the Rangelands Management Society Conference held in Alice Springs in July 2004.

19.4 Five Year Action Plan

High Priority Actions

- In conjunction with the AEO develop an Environmental Information Booklet for distribution to airport tenants and operators.

Ongoing Actions

- In conjunction with the AEO, continue to host the annual Environmental Awareness Seminar.
- Continue to develop the Airport Wildlife Hazard Management System in consultation with airport operators.
- Continue with current levels of commitment to involvement and consultation with environmental, social and industry groups within Alice Springs. When new opportunities arise, such as the development of new community environmental initiatives, Northern Territory Airports PL aims to be involved where practicable and within the constraints of available resources.

Monitoring and Measurements

Current

- All consultations with the community will be recorded using Environment Management System communication forms.

20. Abbreviations and Appendix

The following abbreviations have been used in this document.

AAPA NT Aboriginal Areas Protection Authority
ABC Airport Building Controller
ADG Airport Development Group, the parent company of NTAPL
AEO Airport Environment Officer
AER Annual Environmental Report
AES Airport Environment Strategy
ALC Airport Leasing Company (NTAPL)
ALEC Arid Lands Environment Centre
ANEF Australian Noise Exposure Forecast
ANZECC Australian and New Zealand Environment Conservation Council
APU Auxiliary Power Unit
ARFF Airport Rescue Fire Fighters
ASA Alice Springs Airport
ASO Airport Safety Officer
AST Above ground Storage Tank
AZRI Arid Zone Research Institute, NT Parks and Wildlife Section, DIPE
CASA Civil Aviation Safety Authority
CLC Central Land Council
CSIRO Commonwealth Scientific and Industrial Research Organisation
DIA Darwin International Airport
DIPE Northern Territory Government Department of Infrastructure, Planning and Environment
DoTaRS Commonwealth Department of Transport and Regional Services
EMP Environmental Management Program
EMS Environmental Management System
EPBC Commonwealth Environmental Protection and Biodiversity Conservation Act 1999
FAC Federal Airports Corporation
GA General Aviation apron
GIS Geographic Information System
GPU Ground Power Unit
ISO 14001 International EMS's standard developed by the International Organisation for Standardisation.
MDP Major Development Plan
MSDS Material Safety Data Sheet
NPI National Pollution Inventory
NTAPL Northern Territory Airports PL
RPT Regular Public Transport apron
SOP Standard Operations Procedure
UST Underground Storage Tank
VOCs Volatile Organic Carbons
WHMS Wildlife Hazard Management System
WONS Weeds of National Significance

References

- Alice Springs Airport, 2002, *Minor Variations to the Alice Springs Airport Environmental Strategy*
- BAA, 2004, *Darwin and Alice Springs Master Plan Forecasts*
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- DIPE, 1999, *Alice Springs Land Use Plan*
- DIPE, 1992, *Alice Springs Town Plan*
- DIPE, 2003, *Northern Territory Planning Scheme*
- Paltridge, R. & Latz, P. Desert Wildlife Services, Alice Springs, *Alice Springs Airport Fauna and Flora Survey December 2003*,
- Sinclair Knight Merz, 1999, *Alice Springs Airport Final Master Plan*
- Sinclair Knight Merz, 1999, *Alice Springs Airport Final Environmental Strategy*

Appendix 1

Overleaf, Appendix 1 outlines all of the environmental committments achieved by Alice Springs Airport in the past 5 years. It is divided into the 1999 AES and the 2002 variation.

20. Abbreviations and Appendix

Item#	Category	Hazard	AES Action	2002 Minor Variation
1	Bird Hazard	Residential and migratory birds	• Undertake bird management procedures such as reporting the presence of birds, use of Bird Frite or sirens. • Modify habitat where necessary to discourage birds (such as eliminating standing ponds of water near aircraft movement areas) • Consult with Alice Springs Town Council and DIPE to ensure compatible land uses near the airport (eg. avoidance of putrescible landfill areas.) • Continue to monitor bird numbers and record bird strikes	• Retain existing commitments. • Assess need for runway light time reduction to reduce insect and bird attraction. • Develop a plan for the implementation of findings of Alison Rowell's 2000 report on the bird hazard situation at Alice Springs Airport. i.e. improved bird identification training and identification. Improved bird hazard reporting.
2	Development	Horticulture in Natural Areas	• Conduct flora survey for the particular development area as part of Major Development Plans. • Conduct Fauna survey for the particular development area as part of Major Development Plans.	• Retain existing commitments in the event of a major development. • On proposal of any major development the AEO, ABC and ALC will make a determination as to the extent of environmental investigation required.
3	Development	Commercial development in Natural Areas	• Conduct flora survey for the particular development area as part of Major Development Plans. • Conduct Fauna survey for the particular development area as part of Major Development Plans.	• Retain existing commitments in the event of a major development. • On proposal of any major development the AEO, ABC and ALC will make a determination as to the extent of environmental investigation required.
4	Development	Rural residential in Natural Areas	• Conduct flora survey for the particular development area as part of Major Development Plans. • Conduct Fauna survey for the particular development area as part of Major Development Plans.	• Retain existing commitments in the event of a major development. • On proposal of any major development the AEO, ABC and ALC will make a determination as to the extent of environmental investigation required.
5	Cultural Heritage	Cultural values damaged by construction	• Northern Territory Airports PL to consult with the Australian Heritage Commission, Department of Environment, Sport and Territories, Northern Territory Heritage Advisory Council and other relevant bodies to manage indigenous and built heritage issues. • Work on development should stop if culturally significant artefacts were found. • Undertake archaeological survey of site where appropriate	• Continue with existing commitments, to notify the appropriate agencies as part of a major development. • Current documentation indicates there are no sacred sites on the airport. • However the Aboriginal Areas Protection Authority will be consulted along with the other agencies in the event of a substantial development proposal and a determination will be made as to the requirement for a site investigation.
6	Air Quality	Dust –Dust control Area	• Continue current dust control measures. • Construction - Contractors will be required to provide project specific environmental management plans. Northern Territory Airports PL will implement measures. • Undertake an investigation to determine methods to control dust. • Use practical means for the exclusion of grazing animals on airport lands and leased lands. – Camels remain with AEO concurrence • If applicable apply additional methods to minimise dust.	• Consult with DIPE to ensure compatible land uses near the airport. i.e. to ensure that a dust problem is not created. • Continue current dust control measures. Airport to keep current with dust suppression techniques and if practical apply additional methods to minimise dust. • Construction - Contractors will be required to provide project specific environmental management plans, where it is determined by the AEO and ALC that a dust hazard exists. NTAPL and AEO will develop dust control measures and ensure they are carried out. • Grazing levels will be managed to ensure ground cover is maintained and dust production is minimised.
7	Erosion	Drains	• Inspect drains to ensure adequate maintenance • Report against priorities and monitoring. • Investigate erosion control strategies	• Initial investigations have found drains to be stable and further revegetation is minimising any erosion. • Inspect drains to ensure adequate maintenance.

***Appendix 1* 1999 Environment Management Plan and 2002 Minor Variation** *continued overleaf*

Item#	Category	Hazard	AES Action	2002 Minor Variation
			• Monitor extent of erosion.	• Monitor erosion levels • Report against priorities and monitoring. • Keep current with erosion control techniques.
8	Erosion	Sheet –Roe Creek Flood out	• Maintain dust suppression measures • Report against priorities and monitoring. • Investigate erosion control strategies • Monitor extent of erosion.	• Maintain dust suppression measures (no grazing is permitted in this area) • Fence area to control public access to prevent the creation of new tracks and the associated erosion. – Fence along Santa Teresa and Maryvale Roads. • Keep current with erosion control techniques. • Continue to monitor erosion along transects and assess any requirements for remediation.
9	Stormwater	Runways, Taxiways, Aprons	• Check that aircraft parking on the general aviation apron do not have excessive oil leaks • Check that fuel spill response procedures are documented and staff are appropriately trained. • Encourage all tenants to effectively manage stormwater pollution through written notification. • Check chemicals are correctly stored and transported and MSDS available. • Monitor stormwater quality in open drains. • Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained	• Check that aircraft parking on the general aviation apron do not have excessive oil leaks. These procedures are documented in the Aerodrome Manual. Report any findings monthly. • Encourage all tenants to minimise stormwater pollution, use and maintain appropriate spill response and cleanup kits. • Monitor storm drains to determine whether stormwater pollution has occurred. • Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained.
10	Stormwater/ Hazardous Materials	Large Fuel Storage	• Check that fuel and oil storage facilities meet Standards with regard to bunding, roofing and spill containment. • Check that fuel spill response procedures are documented and staff are appropriately trained. • Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained	• Check that fuel and oil storage facilities meet Standards with regard to bunding, roofing and spill containment. • Check that fuel spill response procedures are documented and staff are appropriately trained. • Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained.
11	Stormwater	Wash down – Aircraft on apron	• Construct new aircraft wash down bay • Encourage all tenants to effectively manage stormwater pollution through written notification. • Encourage tenants to clean their vehicles and aircraft only in the provided vehicle and aircraft wash bays. • Monitor stormwater quality in open drains.	• Carry out an investigation into the level of any contamination arising from aircraft washing activities. • Consult with airport users regarding the demand and funding for an aircraft wash bay. • Evaluate the costs involved in the construction of an appropriate wash bay facility if required as a result of water quality assessment. • Encourage all tenants to minimise stormwater pollution. • Monitor storm drains to determine if pollution has occurred.
12	European Cultural Heritage	Deterioration from neglect / non-use	• Conservation plans to be prepared for heritage buildings where appropriate.	• Review findings of conservation plans and implement as appropriate. • Develop an implementation plan. • Proceed with implementation works.
13	Flora and Fauna	Weeds –Natural Environment	• Investigate eradication of weeds or other control measures by reviewing and augmenting current weed management strategy and including it in the flora and fauna management plan. Carry out weed management as required by the strategy.	• Monitor and control declared weeds on the airport. • Educate grounds staff and tenants and landscaping contractors to identify, report and control infestations of significant weeds. • Evaluate weed control strategy.

***Appendix 1* 1999 Environment Management Plan and 2002 Minor Variation** *continued overleaf*

20. Abbreviations and Appendix

Item#	Category	Hazard	AES Action	2002 Minor Variation
14	Flora and Fauna	Fire –Natural Environment		• Maintain firebreaks as needed. • Liaise with Bush Fires Council and DIPE regarding the appropriateness and implementation of controlled burning on and around the airport. • Develop a Fire Plan (identifying and minimising fire hazards and developing an action plan of procedures for dealing with bush fire) for the airport with the assistance of Bush Fires Council. • Update the Fire Plan on a regular basis.
15	Flora and Fauna	Feral Animals–Built and Natural Environment	• Continue feral cat, rabbit and fox management procedures.	• Continue control measures and keep up to date with feral animal control techniques and apply as appropriate.
16	Erosion	Sheet – Todd River Flank	• Maintain dust suppression measures • Allocate Priorities for implementation works. • Report against priorities and monitoring. • Require erosion plans for construction. • Investigate erosion control strategies • Monitor extent of erosion.	• In flood-prone areas fire breaks will be maintained by slashing on sloped ground and disk ploughing on flat ground. • Existing windrows on firebreaks will be spread across the fire break and flattened. • Monitoring of the erosion transects will be continued.
17	Stormwater	Workshop Spills	• Encourage all tenants to effectively manage stormwater pollution through written notification. • Monitor stormwater quality in open drains. • Check that fuel spill response procedures are documented and staff are appropriately trained • Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained. • Check that chemicals are correctly stored and transported and MSDS available.	• Encourage all tenants to minimise stormwater pollution, use and maintain appropriate spill response and cleanup kits. • Check that fuel spill response procedures are documented and staff are appropriately trained • Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained. • Check that chemicals are correctly stored and transported and MSDS available.
18	Stormwater	Sewage reticulation –new terminal	• Nothing in Environment Strategy.	• Investigate the potential for overflow of sewage to contaminate stormwater.
19	Energy	Excess Consumption	• Continue to implement recommendations arising from last energy audit. • To review the potential for use of renewable energy technologies where practicable • To continue monitoring airport energy consumption and conduct practicable energy saving technologies. • Encourage tenants by written notification to adopt energy and non-renewable resource reduction techniques including appropriate education and signage encouraging energy conservation.	• Johnson Controls and Honeywell have recently conducted comprehensive energy audits and equipment reviews. Results of this work found that there were no significant energy savings to be made at Alice Springs Airport. • Northern Territory Airports PL has joined the Greenhouse Challenge Program. Any practical energy saving recommendations will be implemented.
20	Air Quality (health, visibility)	Smoke – Bush fires	• Nothing in Environment Strategy.	• Liaise with Bush Fires Council and DIPE regarding fire control on and around the airport. • Maintain firebreaks. • Encourage the use of native, fire retardant, plant species in any areas requiring landscaping or revegetation.
21	Development	Eco-tourism / Recreation in Natural Areas	• Conduct flora survey for the particular development area as part of Major Development Plans. • Conduct Fauna survey for the particular development area as part of Major Development Plans.	• Retain existing commitments in the event of a major development. • On proposal of any major development a determination will be made by the AEO, ABC and ALC as to the extent of environmental investigation required.

***Appendix 1* 1999 Environment Management Plan and 2002 Minor Variation** *continued overleaf*

Item#	Category	Hazard	AES Action	2002 Minor Variation
22	Stormwater	Small Fuel Storage	• Check that fuel and oil storage facilities meet Australian Standards with regard to bunding, roofing and spill containment. • Check that fuel spill response procedures are documented and staff are appropriately trained. • Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained.	• Check that fuel and oil storage facilities meet Standards with regard to bunding, roofing and spill containment. • Check that fuel spill response procedures are documented and staff are appropriately trained. • Check that appropriate emergency response and clean-up kits are sufficiently stocked and maintained.
23	Erosion	Sheet -Flood Plain	• Maintain dust suppression measures • Report against priorities and monitoring. • Monitor extent of erosion.	• Maintain dust suppression measures i.e. grazing management to ensure vegetation is not degraded and dust production is minimised • Continue monitoring erosion transects. • Grading of windrows and disk ploughing of fire breaks to maintain the breaks while minimising erosion. • Stay current with erosion control technologies.
24	Erosion	Sheet - Dunes	• Maintain dust suppression measures • Allocate Priorities for implementation works. • Report against priorities and monitoring. • Investigate erosion control strategies	• Maintain dust suppression measures i.e. grazing management to ensure vegetation is not degraded and dust production is minimised • Carry out minor changes to dune flank firebreaks. Grading of windrows and disk-ploughing of fire breaks. Ensure these breaks are maintained as appropriate. • Stay current with erosion control technologies.
25	Erosion	Airstrip Flank	• Maintain dust suppression measures • Investigate erosion control strategies • Monitor extent of erosion.	• Repair erosion damage on flanks as required to meet CASA requirements. • Stay current with erosion control technologies. • Continue visual monitoring of erosion on airstrip flanks.
26	Stormwater	Wash down - Aircraft in hangar	• Encourage all tenants to effectively manage stormwater pollution through written notification.	• Encourage all tenants to minimise stormwater pollution. • Encourage tenants to install and maintain interceptors/separators in all hangars where maintenance and wash down takes place. • Where practical separated wash water should be disposed to sewer.
27	Stormwater	Vehicle wash down	• Encourage all tenants to effectively manage stormwater pollution through written notification. • Encourage tenants to only clean their vehicles and aircraft in the provided vehicle and aircraft wash bays. • Monitor stormwater quality in open drains.	• Encourage tenants to continue to only clean their vehicles in the provided vehicle wash bays. • Encourage all tenants to minimise stormwater pollution. • Continue to monitor storm drains to determine if pollution has occurred.
28	Stormwater	Aircraft Sewage spills	• Encourage all tenants to effectively manage stormwater pollution through written notification. • Monitor stormwater quality in open drains.	• Encourage airlines to follow good practice when handling sewage and to maintain equipment in good working order. • Check that sewage spill response procedures are documented, spill response kits are stocked and maintained and staff are appropriately trained.
29	Stormwater	Sewage reticulation –old terminal	• No measures in Environment Strategy.	• Monitor the operation of sewerage system pump stations to detect any issues arising. • Investigate the potential for overflow of sewage to contaminate stormwater

***Appendix 1* 1999 Environment Management Plan and 2002 Minor Variation** *continued overleaf*

20. Abbreviations and Appendix

Item#	Category	Hazard	AES Action	2002 Minor Variation
30	Stormwater	Biocides / Fertilisers	• Review the use of pesticides and herbicides on airport.	• Continue to follow good practice while using these materials in accordance with the directions. • Ensure contractors are suitably trained and licensed to handle the chemicals they use on site. • Monitor the use of chemicals to ensure the appropriate chemicals are used.
31	Groundwater	Horticultural Development – Effluent (salinity)	• No measures in Environment Strategy.	• Conduct horticultural development in a manner to minimise the creation of salination issues. • Monitor for salination of groundwater from horticultural development.
32	Groundwater	Horticultural Development – Chemicals	• No measures in Environment Strategy.	• Store chemicals in accordance with or exceeding Australian Standards. • Ensure that use of chemicals is in compliance with Australian Standards and area specific requirements eg minimising ground water pollution.
33	Groundwater	Horticultural Development – Fuel	• Check that fuel and oil storage facilities meet Australian Standards with regard to bunding, roofing and spill containment.	• Check that fuel and oil storage facilities meet Australian Standards with regard to bunding, roofing and spill containment to prevent contamination.
34	Groundwater	Airport grounds (including bore-field buffer) – Fuel Chemical and effluent	• Conduct a geotechnical survey of the airport to determine the likelihood of groundwater contamination.	• Investigate results of Northern Territory Government borehole monitoring on Alice Springs Airport lands and surrounding areas to determine the potential for groundwater contamination and if further investigation is required.
35	Vector Control	Mosquito Breeding	• Review existing drains and structures in which water could collect. • Monitor possible mosquito breeding sites. • Modify structures or drains to eliminate pooling of water where practicable. • Restrict livestock within 400m zone. • Control landscaping to avoid creating migration corridors or selecting plants known to harbour mosquitoes.	• Continue with existing commitments. • Ensure any future development including drainage works is carried out in a manner that minimises the pooling of water that may lead to mosquito breeding.
36	Flora and Fauna	Fire –Built Environment	• No measures in Environment Strategy.	• Maintain landscaped and open areas around facilities to minimise the potential for wildfires.
37	Flora and Fauna	Weeds - Built Environment	• Investigate eradication of weeds or other control measures by reviewing and augmenting current weed management strategy and including it in the flora and fauna management plan. Carry out weed management as required by the strategy.	• Monitor and control declared weeds on the airport. • Educate grounds staff, tenants and landscaping contractors to identify, report and control infestations of significant weeds. • Evaluate weed control strategy.
38	Flora and Fauna	Domestic Animals	• Use practical means for the exclusion of grazing animals on airport lands and on leased lands. Camels remain with AEO concurrence.	• Maintain appropriate grazing levels to manage impacts on Flora and Fauna. • Fence Maryvale and Santa Teresa Roads to prevent access of grazing animals to airport lands.
39	Flora and Fauna	Endangered Species	• Develop strategy to protect and/or mitigate impact on any rare and endangered species identified.	• Endangered species strategy will be developed if and when such a species is discovered.
40	Flora and Fauna	Biodiversity Maintenance	• No measures in Environment Strategy.	• Carry out development and site management in a manner to maintain natural biodiversity.
41	Noise	Aircraft Ground Running (including Military)	• Undertake random noise monitoring in response to specific incidents and/or complaints.	• Investigations already undertaken have not shown noise to be a significant issue at Alice Springs

***Appendix 1* 1999 Environment Management Plan and 2002 Minor Variation** *continued overleaf*

Item#	Category	Hazard	AES Action	2002 Minor Variation
			• Review existing draft noise management plan for all ground noise sources including auxiliary power units, engine run up and construction noise. Utilise suitable qualified acoustic engineers to manage compliance with Regulations • Undertake initial baseline monitoring survey at nearest residential area. • Develop a ground noise Management plan.	Airport. The management strategy for this will be to undertake a noise investigation in response to any ground noise incidents, issues or complaints.
42	Noise	Construction	• Undertake random noise monitoring in response to specific incidents and/or complaints. • Review existing draft noise management plan for all ground noise sources including auxiliary power units, engine run up and construction noise. Utilise suitable qualified acoustic engineers to manage compliance with Regulations • Undertake initial baseline monitoring survey at nearest residential area. • Develop a ground noise Management plan	• Investigations already undertaken have not shown noise to be a significant issue at Alice Springs Airport. The management strategy for this will be to undertake a noise investigation in response to any ground noise incidents, issues or complaints. • At the time of proposed development the AEO, ABC and ALC will make a determination as to the appropriate noise mitigation measures and these will be put in place.
43	Noise	Vehicle noise	• As per Aircraft ground running.	• Investigations already undertaken have not shown noise to be a significant issue at Alice Springs Airport. The management strategy for this will be to undertake a noise investigation in response to any ground noise incidents, issues or complaints.
44	Hazardous Materials	Asbestos	• Conduct an asbestos review and prepare register.	• Maintain Asbestos Register. • Ensure any works on these buildings are carried out in accordance with Work Health Guidelines.
45	Hazardous Materials	Chemical Storage	• Maintain an accurate dangerous goods register including compliance with MSDS. • Ensure MSDS documentation and specific procedures are established to manage spills. • Encourage tenants to check storage facilities, labelling, safety equipment etc are in accordance with Relevant Australian Standards and local authority requirements.	• Commitments carried out and continuing.
46	Hazardous Materials	Small storage of Petrol/Oil lubricants	• Maintain an accurate dangerous goods register including compliance with MSDS. • Ensure MSDS documentation and specific procedures are established to manage spills. • Encourage tenants to check storage facilities, labelling, safety equipment etc are in accordance with Relevant Australian Standards and local authority requirements.	• Commitments carried out and continuing.
47	Air Quality (health, visibility)	Smoke – Fire Training	• No measures in Environment Strategy.	• This activity is controlled by the “Agreement under Sub regulation 4.02(2) Airports Environment Protection Regulations 1997 in relation to the emission of dark smoke”. –Local Agreement covering Darwin International Airport established between AEO and Airservices Australia. • Encourage ARFF to continue to only carry out training when conditions do not adversely impact on other airport users.
48	Air Quality	Ozone depleting	• Update inventory of ozone depleting substances.	• Add ozone-depleting substances to the Hazardous Materials register to be developed.
49	Air Quality	Vehicle emissions	• No measures in Environment Strategy.	• Motor Vehicle emissions are controlled by State Regulations and are not an area of Northern Territory Airports PL responsibility.

***Appendix 1* 1999 Environment Management Plan and 2002 Minor Variation** *continued overleaf*

Item#	Category	Hazard	AES Action	2002 Minor Variation
50	Air Quality	Aircraft emissions	• Aircraft taxiing, landing and departure regulated under Air Navigation (Aircraft Engine Emissions) *Regulations*.	• Retain existing commitment.
51	Air Quality	Spray Painting	• Paint Stripping and Painting – Northern Territory Airports PL to manage operations on an ongoing basis. Runway, taxiway and apron preferably should use water-based paints rather than solvent based paints	• All line marking activities use water based paints. • The NTG Work Health Authority manages OH&S issues associated with these operations. • Develop a notification procedure to ensure the Work Health Authority is notified of any issues or incidents on the airport.
52	Air Quality	Other NPI Substances	• Preparation of an air emission inventory.	• Existing NPI work from the 1999/2000 reporting period showed ASA did not trip the thresholds for reportable substances in that year. • Carry out assessments of NPI substances with DLPE to update inventory.
53	Contaminated Land	Site 1 Buried asbestos inside southern security fence	• Update and maintain Contaminated site register. • Determine all liabilities with contaminated sites and check that the remediation of any effected sites is effectively managed. • Perform a risk assessment of all contaminated sites (including tenants)	• Opportunistically investigate the contents of this site and manage as appropriate.
54	Contaminated Land	7-Mile Diesel Tanks	• Monitor soils and groundwater around fuel storage facilities and other potential sources of contamination where appropriate. • Ensure all above ground tanks and dangerous goods storage and other potential sources of pollution are sufficiently bunded and appropriately managed. • Perform a risk assessment of all contaminated sites (including tenants) particularly the underground storage tank at the Seven Mile area to prioritise clean-up actions and plans.	• Continue to monitor the integrity of the system to ensure there is no further leakage. • At the time that these tanks are decommissioned the contamination of this site will be managed and remediated.
55	Contaminated Land	Air North Hangar	• No measures in Environment Strategy.	• Ensure that tenant prevents further contamination, and monitors and remediate existing contamination.
56	Contaminated Land	Sand Pit (Potential Site)	• No measures in Environment Strategy.	• Investigate the possibility of contamination at this site. • Manage any contamination as appropriate in consultation with AEO.
57	Waste Management	Office Waste	• Encourage waste reduction, litter reduction and practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification.	• Retain existing commitment.
58	Waste Management	Demolition / Construction waste	• Encourage waste reduction, litter reduction and practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification.	• Retain existing commitment.
59	Waste Management	Food wastes	• Encourage waste reduction, litter reduction and practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification.	• Retain existing commitment.
60	Waste Management	Industrial	• Encourage waste reduction, litter reduction and practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification.	• Retain existing commitment.

***Appendix 1* 1999 Environment Management Plan and 2002 Minor Variation** *continued overleaf*

20. Abbreviations and Appendix

Item#	Category	Hazard	AES Action	2002 Minor Variation
61	Waste Management	Sewage	• No measures in Environment Strategy.	• An assessment of existing septic systems has not identified any significant environmental risk. • Where practical new facilities will be linked to the airport sewage network at the time of development.
62	Development	In built areas	• No measures in Environment Strategy.	• On proposal of any major development the AEO, ABC and ALC will make a determination as to the extent of environmental investigation required.

Appendix 1 **1999 Environment Management Plan and 2002 Minor Variation**