



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 necessary 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
<i>Tamarix aphylla</i>	Tamarisk, Athel pine	Alice Springs Region outside of home gardens.	Yes
<i>Calotropis procera</i>	Rubber Bush, Calotrope	S of 16°30' S latitude.	No
<i>Opuntia sp.</i>	Cactus	S of 18° S latitude outside town areas.	No
<i>Tribulus terrestris s.lat.</i>	Cat-head, Caltrop, Bindieye	All of the Northern Territory	No
<i>Xanthium spinosum</i>	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.



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

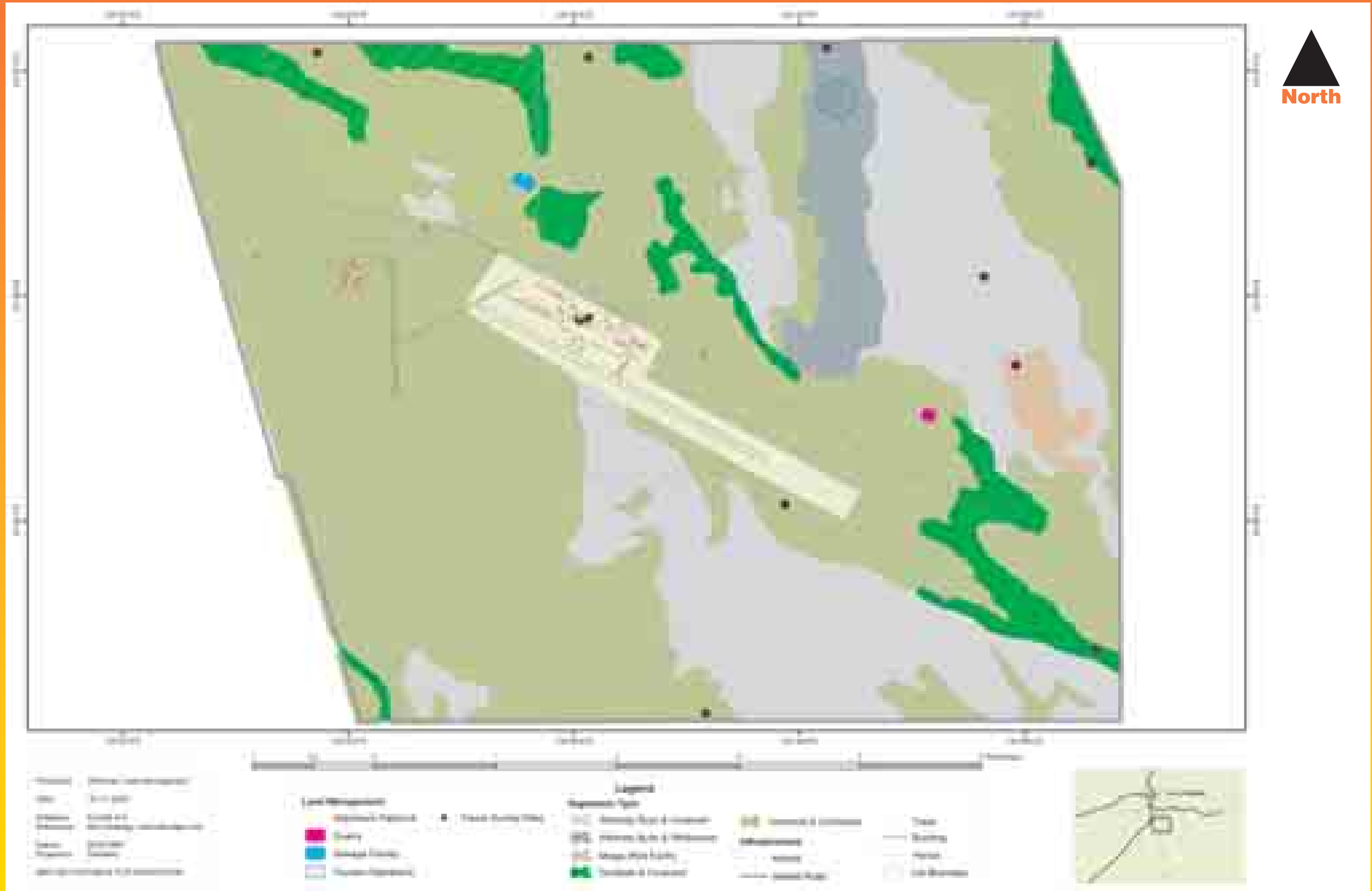


Figure 11 Land management and vegetation types on Alice Springs Airport



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 CO₂, 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



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 CO₂, 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 to 100 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.



- 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 reevaluate 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.



- 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 currently 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.
- Liaise 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.



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*
- Dames & Moore Woodward-Clyde, 2000, *Soil Erosion Monitoring Program Alice Springs Airport*
- 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 commitments 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Inspect drains to ensure adequate maintenance Report against priorities and monitoring. Investigate erosion control strategies 	<ul style="list-style-type: none"> Initial investigations have found drains to be stable and further revegetation is minimising any erosion. Inspect drains to ensure adequate maintenance.

20. Abbreviations and Appendix



Item#	Category	Hazard	AES Action	2002 Minor Variation
			<ul style="list-style-type: none"> Monitor extent of erosion. 	<ul style="list-style-type: none"> Monitor erosion levels Report against priorities and monitoring. Keep current with erosion control techniques.
8	Erosion	Sheet –Roe Creek Flood out	<ul style="list-style-type: none"> Maintain dust suppression measures Report against priorities and monitoring. Investigate erosion control strategies Monitor extent of erosion. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Conservation plans to be prepared for heritage buildings where appropriate. 	<ul style="list-style-type: none"> Review findings of conservation plans and implement as appropriate. Develop an implementation plan. Proceed with implementation works.
13	Flora and Fauna	Weeds –Natural Environment	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Continue feral cat, rabbit and fox management procedures. 	<ul style="list-style-type: none"> Continue control measures and keep up to date with feral animal control techniques and apply as appropriate.
16	Erosion	Sheet – Todd River Flank	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Nothing in Environment Strategy. 	<ul style="list-style-type: none"> Investigate the potential for overflow of sewage to contaminate stormwater.
19	Energy	Excess Consumption	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Nothing in Environment Strategy. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.

20. Abbreviations and Appendix



Item#	Category	Hazard	AES Action	2002 Minor Variation
22	Stormwater	Small Fuel Storage	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Maintain dust suppression measures Report against priorities and monitoring. Monitor extent of erosion. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Maintain dust suppression measures Allocate Priorities for implementation works. Report against priorities and monitoring. Investigate erosion control strategies 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Maintain dust suppression measures Investigate erosion control strategies Monitor extent of erosion. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Encourage all tenants to effectively manage stormwater pollution through written notification. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Encourage all tenants to effectively manage stormwater pollution through written notification. Monitor stormwater quality in open drains. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Review the use of pesticides and herbicides on airport. 	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Check that fuel and oil storage facilities meet Australian Standards with regard to bunding, roofing and spill containment. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Conduct a geotechnical survey of the airport to determine the likelihood of groundwater contamination. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> Maintain landscaped and open areas around facilities to minimise the potential for wildfires.
37	Flora and Fauna	Weeds - Built Environment	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Use practical means for the exclusion of grazing animals on airport lands and on leased lands. Camels remain with AEO concurrence. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Develop strategy to protect and/or mitigate impact on any rare and endangered species identified. 	<ul style="list-style-type: none"> Endangered species strategy will be developed if and when such a species is discovered.
40	Flora and Fauna	Biodiversity Maintenance	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> Carry out development and site management in a manner to maintain natural biodiversity.
41	Noise	Aircraft Ground Running (including Military)	<ul style="list-style-type: none"> Undertake random noise monitoring in response to specific incidents and/or complaints. 	<ul style="list-style-type: none"> Investigations already undertaken have not shown noise to be a significant issue at Alice Springs

20. Abbreviations and Appendix



Item#	Category	Hazard	AES Action	2002 Minor Variation
			<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> As per Aircraft ground running. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Conduct an asbestos review and prepare register. 	<ul style="list-style-type: none"> Maintain Asbestos Register. Ensure any works on these buildings are carried out in accordance with Work Health Guidelines.
45	Hazardous Materials	Chemical Storage	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Commitments carried out and continuing.
46	Hazardous Materials	Small storage of Petrol/Oil lubricants	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Commitments carried out and continuing.
47	Air Quality (health, visibility)	Smoke – Fire Training	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Update inventory of ozone depleting substances. 	<ul style="list-style-type: none"> Add ozone-depleting substances to the Hazardous Materials register to be developed.
49	Air Quality	Vehicle emissions	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> Motor Vehicle emissions are controlled by State Regulations and are not an area of Northern Territory Airports PL responsibility.

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50	Air Quality	Aircraft emissions	<ul style="list-style-type: none"> Aircraft taxiing, landing and departure regulated under Air Navigation (Aircraft Engine Emissions) Regulations. 	<ul style="list-style-type: none"> Retain existing commitment.
51	Air Quality	Spray Painting	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Preparation of an air emission inventory. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> Opportunistically investigate the contents of this site and manage as appropriate.
54	Contaminated Land	7-Mile Diesel Tanks	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> Ensure that tenant prevents further contamination, and monitors and remediate existing contamination.
56	Contaminated Land	Sand Pit (Potential Site)	<ul style="list-style-type: none"> No measures in Environment Strategy. 	<ul style="list-style-type: none"> Investigate the possibility of contamination at this site. Manage any contamination as appropriate in consultation with AEO.
57	Waste Management	Office Waste	<ul style="list-style-type: none"> Encourage waste reduction, litter reduction and practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification. 	<ul style="list-style-type: none"> Retain existing commitment.
58	Waste Management	Demolition / Construction waste	<ul style="list-style-type: none"> Encourage waste reduction, litter reduction and practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification. 	<ul style="list-style-type: none"> Retain existing commitment.
59	Waste Management	Food wastes	<ul style="list-style-type: none"> Encourage waste reduction, litter reduction and practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification. 	<ul style="list-style-type: none"> Retain existing commitment.
60	Waste Management	Industrial	<ul style="list-style-type: none"> Encourage waste reduction, litter reduction and practical recycling programs for adoption by Northern Territory Airports PL and tenants by written notification. 	<ul style="list-style-type: none"> Retain existing commitment.

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61	Waste Management	Sewage	<ul style="list-style-type: none">No measures in Environment Strategy.	<ul style="list-style-type: none">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	<ul style="list-style-type: none">No measures in Environment Strategy.	<ul style="list-style-type: none">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