

Townsville Airport

Airport Environment Strategy 2009 - 2014

Notice

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Key Contacts

Townsville Airport Pty Ltd	(07) 4727 3211
Airport Environment Officer	(07) 4799 5551
Airport Building Controller	(07) 4799 5547
AirServices Australia –	1300 301 120
Aircraft Noise Enquiries Hotline	1800 802 584

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- Department of Defence
- Townsville City Council
- Queensland Department of Employment, Economic Development and Innovation (formerly Queensland Department of Primary Industries and Fisheries)
- Ecosure Pty Ltd

Foreword

As the General Manager of Townsville Airport Pty Ltd (TAPL), I am pleased to announce the Airport Environment Strategy (AES). The strategy outlines the framework for the environmental management of Townsville Airport for the next five years and beyond. Townsville Airport has experienced strong domestic growth recently, with over 1.5 million passengers passing through the airport annually.

TAPL operates as a business that focuses on the 'triple bottom line', having a firm commitment to ensuring all areas of operation not only take into account economic and social impacts, but also environmental.

This AES is a crucial aspect of TAPL's commitment to the responsible management and preservation of its environmental precinct, indicating how a balance between environment impacts and development will be achieved.

The AES will provide the blueprint for the sustainable management and enhancement of the airport's environmental assets for the next five years.

A handwritten signature in black ink that reads "Kevin Gill". The signature is written in a cursive, flowing style.

Kevin Gill
General Manager

Glossary

Phrase	Description
Acid Sulphate Soils (ASS)	Soils and sediments containing iron sulfides. When exposed to air due to drainage or disturbance, these soils produce sulfuric acid, often releasing toxic quantities of iron, aluminium and heavy metals.
The Act	<i>Airports Act 1996</i>
The Airport	The area of Townsville Airport leased by Townsville Airport Pty Ltd (TAPL)
Airport Environment Manager	Refers to the manager who will have the predominant responsibility for the development and implementation of Townsville Airport's Environment Strategy.
Airport Environment Officer (AEO)	Person appointed by the Commonwealth to oversee the operation of the <i>Airports (Environment Protection) Regulations 1997</i> at Townsville Airport.
Airport Operators	The airport lessee company (TAPL) and all sublessees and licensees (tenants and contractors) undertaking any activity on Townsville Airport.
DITRDLG	Department of Infrastructure, Transport, Regional Development and Local Government
Environmental Aspect	The element of an organisation's activities, products or services that can interact with the environment.
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.
Environment Management Plan	A plan developed to address each potential environmental issue or impact on the Airport, specifying the environmental objectives and targets of the TAPL lease area and the means by which they are to be achieved.
Environmental Management System (EMS)	The part of the overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.
Environmental Objective	Overall environmental goal, arising from the environmental policy, that an organisation sets itself to achieve, and which is quantified where practicable
Environmental Target	Detailed performance requirement, quantified where practicable, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Lease Area	The area of Townsville Airport leased by Townsville Airport Pty Ltd (TAPL)
The Regulations	<i>Airports (Environment Protection) Regulations 1997</i>
Phrase	Description

Townsville Airport Pty Ltd (TAPL) The airport lessee company

Trade Waste Trade waste consists of waste from premises used wholly or mainly for the purposes of a trade or business but not including household; or agricultural waste

Acronyms

Acronym	Description
AEI	Air Emissions Inventory
AEO	Airport Environment Officer
AES	Airport Environment Strategy
ASS	Acid Sulfate Soils
EMS	Environmental Management System
HVAC	Heating, Ventilating and Air Conditioning
ODS	Ozone Depleting Substances
PCBs	Polychlorinated Biphenyls
RAAF	Royal Australian Air Force
TAPL	Townsville Airport Propriety Limited

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This is the third Townsville Airport Environment Strategy (AES) produced since 1999. It identifies how Townsville Airport Pty Ltd (TAPL) will meet its environmental obligations under the *Airports Act 1996* (the Act) and describes the environmental responsibilities of Airport operators.

Townsville Airport is a joint user airport, comprised of three areas; the Military Area, Civil Area and Joint User Area. The Department of Defence controls the Joint User Area and the Military Area, which is operated as a Royal Australian Air Force (RAAF) base. TAPL obtained a lease over the Civil Area in 1998 for 50 years with an option for a further 49 years.

This AES has been developed for the area leased by TAPL (TAPL lease area) as shown in Figure 1.

Location

Townsville Airport is situated on a coastal flood plain between Rowes Bay and the Bohle River, approximately five kilometres west of the Townsville city centre. The northern end of the main runway is one kilometre from the coast, whilst the Townsville Airport terminal is approximately two and a half kilometres inland.

Land uses adjacent to the Airport site include residential development to the south-east and industrial zoning to the south-west (Figure 2). Natural land features downstream of Townsville Airport include:

- Townsville Town Common Conservation Park – this is a seasonal wetland and protected area which is home to a number of vegetation communities and fauna species, including 280 species of birds.
- Bohle River Fish Habitat Area –an estuarine and wetland buffer zone containing extensive stands of mangroves, saltmarsh and unvegetated claypans which are home to several different species of marine life.
- Cleveland Bay – this area has commercial, recreational, indigenous and fisheries values, as

well as providing ecologically valuable marine habitats.

- Great Barrier Reef – TAPL recognises that the Great Barrier Reef is also a receiving marine habitat area. This area is a World Heritage Site and of great ecological importance, supporting a varied diversity of life including many vulnerable and endangered species.

History

The Townsville Airport site has undergone many changes to become a major centre for aviation in the North Queensland Region. The following is a summary of its history, providing context for some of the environmental considerations required at the site today.

Table 1: Historical Milestones

Year	Milestone
February 1939	Aviation operations commenced at the current Townsville Airport site.
December 1939	RAAF base established.
December 1940	Department of Air acquires Townsville Airport and retains control after World War II.
February 1981	Qantas commence international services from Townsville to New Zealand and America. \$5 million Airport upgrade: <ul style="list-style-type: none"> • new international terminal • pavement works to accommodate B747 Aircraft.
May 1986 – April 1988	Major redevelopment of the Airport terminal: <ul style="list-style-type: none"> • new, integrated domestic / international terminal • domestic apron upgrade • new public carpark, emergency powerhouse, aircraft waste disposal building and access road upgrades.
April 1989	Federal Airports Corporation assumes responsibility for civil aviation area and operations.
June 1998	Townsville Airport leased to TAPL for fifty (50) years with an option for another forty-nine (49) years.
September 1999	First Townsville Airport Environment Strategy published (1999-2004)
2003	\$12.5 million terminal upgrade: <ul style="list-style-type: none"> • three (3) new aerobridges

Year	Milestone
	<ul style="list-style-type: none"> · expanded ground level area · improved access facilities · elevated walkway / concourse viewing deck.
2004	Second Townsville Airport Environment Strategy published (2004-2009)
2006	Development of Northern Australia Aerospace Centre of Excellence (NAACEX) Precinct
2009	Third Townsville Airport Environment Strategy prepared (2009-2014)

Operations

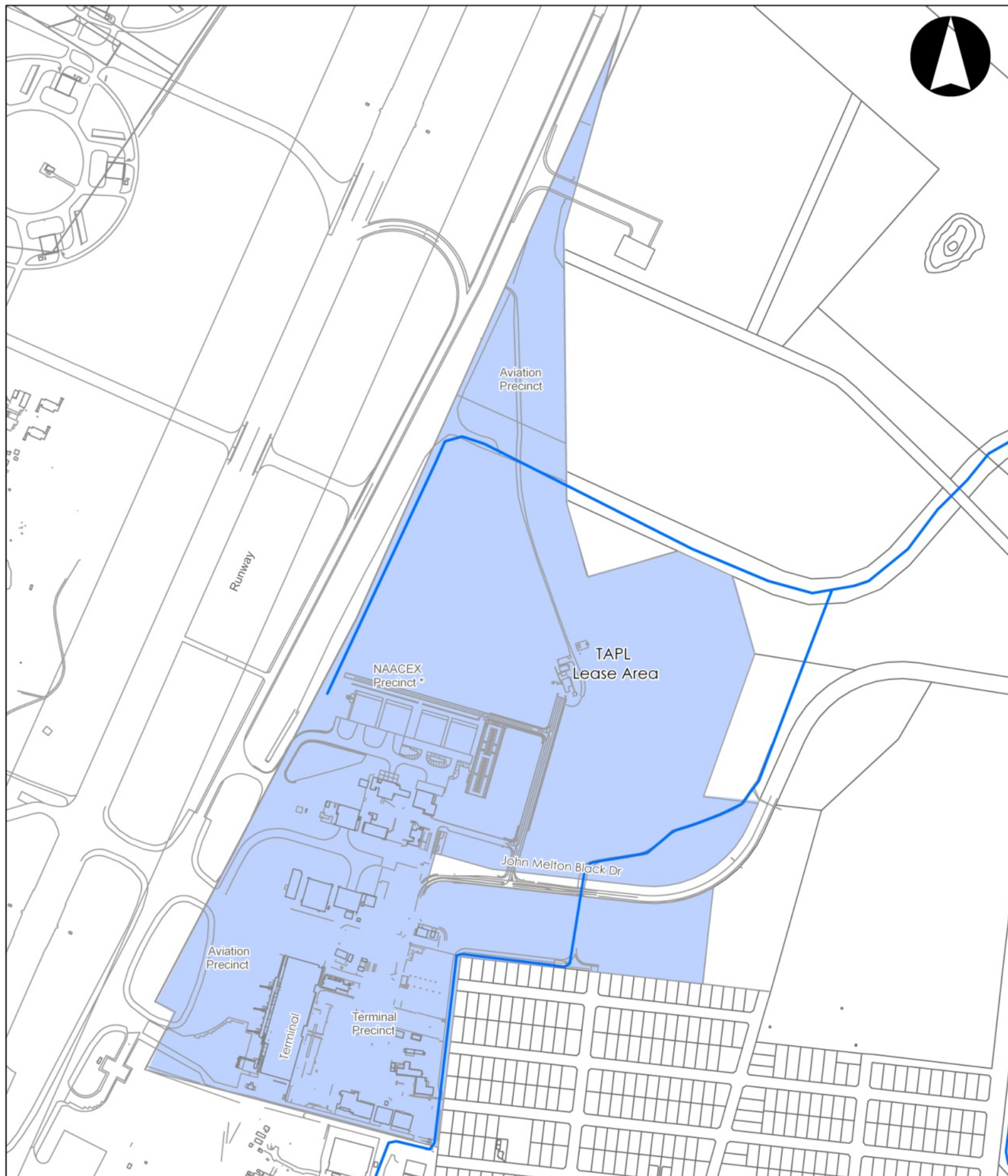
Townsville Airport accommodates both domestic and international aircraft operations and in the 2007-08 financial year, handled over 1.5 million passengers. Aircraft operating out of the Airport include a mix of general, regular passenger and charter operations.

The Airport has two runways - the main runway, 01/19, is 2438 x 45 metres whilst the secondary runway, 07/25, is 1100 x 30 metres. The main aircraft apron can accommodate a combination of aircraft up to B747 in size. In the 'nose in, push back' configuration the apron can accommodate six jet aircraft and three commuter aircraft, with stand-off positions for another 10 commuter aircraft and approximately 20 general aviation aircraft. Helicopter facilities are also provided. Refer to Figure 1 for the layout of Townsville Airport services.




Further infrastructure at Townsville Airport supporting the activities of TAPL and Airport operators includes:

- domestic/international passenger terminal
- aircraft maintenance and support facilities
- refuelling facilities
- retail
- car rental facilities
- car parking
- freight services
- flying schools charter and joy flight services
- emergency services operation
- flight catering facility.

The Department of Defence is responsible for a range of services and infrastructure, including Air Traffic Control, grounds maintenance and the fire service complex.



Legend

-  Water Ways
-  TAPL Lease Area
-  Cadastre & services

*NAACEX - Northern Australia
Aerospace Centre of Excellence

Cadastral Data supplied by TAPL
Date unknown
TITLE: Location and Services
PREPARED BY CONSULTANTS:
Ecosure Pty Ltd
AUTHORISED: Phil Shaw (Ecosure)
DRAWING NUMBER: GE72
DATE: October 2009 (REV01)

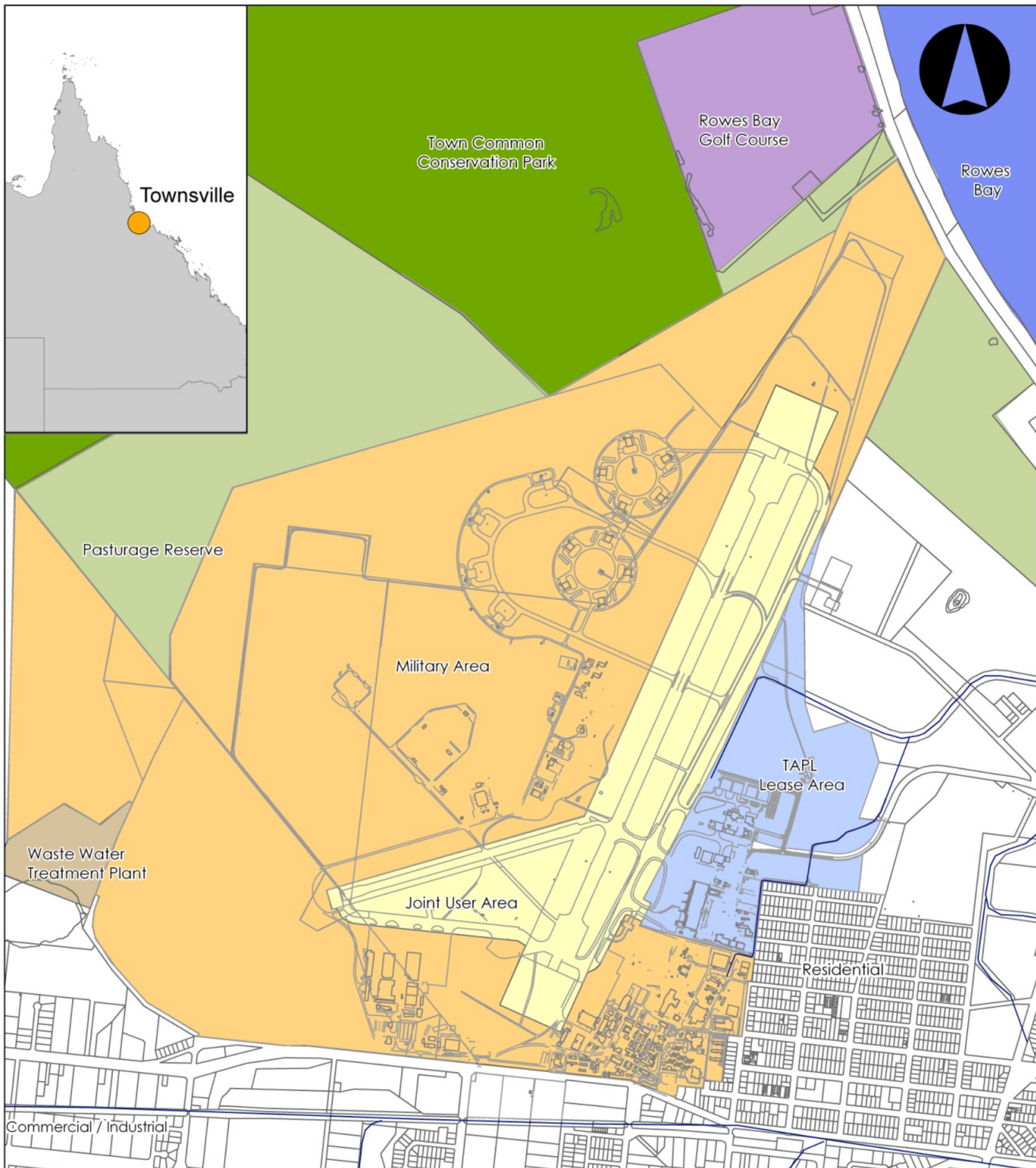
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Airport Environment Strategy

Figure 1
Townsville Airport
Location and Services

Figure 1 Location and Services














Legend		 <p>Airport Environment Strategy</p> <p>Figure 2 Townsville Airport Surrounding Land Use</p>
	Water ways	
	TAPL boundary	
	Joint user area	
	Cadastral & services	
	Town Common Conservation Park	
	Rowes Bay	
	Military Area	
	Pasturage Reserve	
	Rowes Bay Golf Course	
	Waste Water Treatment Plant	
<p>Do not use for scale</p> <p><small>Cadastral Data supplied by TAPL Date unknown TITLE: Surrounding Land Use PREPARED BY CONSULTANTS: Ecosure Pty Ltd AUTHORISED: Phil Shaw (Ecosure) DRAWING NUMBER: GE72 DATE: October 2009 (REV01)</small></p>		

Figure 2 Surrounding Land Use



As Townsville Airport is situated on Commonwealth Government land, all Airport operators, including TAPL staff, tenants and contractors, are subject to relevant Commonwealth legislation. The principal Commonwealth legislation applicable to environmental management is:

- ***Airports Act 1996 (the Act)***. Establishes the system by which Airport operators are required to abide. Part 6 deals specifically with environmental management.
- ***Airports (Environment Protection) Regulations 1997 (the Regulations)***. Establishes a system of regulation for pollution and excessive noise and promotes better environmental outcomes in accordance with the provisions of the Act.
- ***Environment Protection and Biodiversity Conservation Act 1999***. Details requirements for the management of matters of national environmental significance, including significant flora and fauna, and Cultural Heritage at the Airport.

The above listed legislation is not intended to exclude or limit the concurrent operation of any Queensland state law, unless the contrary intention appears.

Noise and other pollution caused by aircraft when landing, taking off, taxiing or in flight, is not the responsibility of TAPL and therefore are not addressed within this AES.

TAPL is committed to compliance with all relevant environmental legislation (i.e. the *Fisheries Act 1994* which provides for the management, use, conservation and enhancement of fisheries resources and habitats), regulations, standards, guidelines and criteria, and undertake periodic reviews of applicable legislative requirements.

The Airport Environment Officer (AEO) is the statutory regulator appointed by DITRD LG to oversee the operation of the Regulations at Townsville Airport. DITRD LG oversees the AEO and has overall responsibility for enforcement of the Act and Regulations.

AES Requirements

In accordance with the requirements of the Act the purpose of the Townsville Airport AES is to:

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

The Act additionally requires that the AES define:

- the objectives for the environmental management of the Airport site leased to TAPL
- any areas of environmental significance, as identified in consultation with state or Territory and federal conservation bodies
- sources of environmental impact associated with Townsville Airport operations
- any studies, reviews and monitoring to be carried out by TAPL in connection with the identified sources of environmental impact associated with TAPL operations
- time frames for the completion of required studies and reviews, and for reporting on monitoring
- specific measures to be carried out by TAPL for the purpose of preventing, controlling or reducing the environmental impact associated with TAPL operations
- time frames for the completion of these specific measures
- details of consultation in preparation of the AES.

TAPL is required to prepare, and submit to the Minister for the Department of Infrastructure, Transport, Regional Development and Local Government (DITRD LG), a draft environment strategy before the expiry of the strategy period of five years. Once approved by the Minister, all Airport operators are required to take all reasonable steps to make sure that the AES is complied with.

AES Consultation

TAPL sees the involvement of the Department of Defence, Airport operators and other stakeholders as integral to the process of developing an environmental strategy.

During preparation of this Draft AES for Public Comment, TAPL has consulted with sub-lessees, licensees and other Airport users. Stakeholders have been informed of the AES development process from an early stage. Prior to public exhibition the document was reviewed by the AEO, DITRD LG and a number of local, state and federal government agencies and stakeholder groups.

The community was invited to contribute to the Preliminary Draft AES, which was available for a

period of 60 business days. The comments received from this consultation period were reviewed and considered in the development of the Draft AES for submission to the Minister.

TAPL will ensure that every person who is a sub lessee or licensee of the airport-lessee company at the Airport is aware of the final AES and of any approved variation of this strategy. The final AES will be available for viewing on the TAPL website.

Master Plan

Under the Act, TAPL is required to prepare an Airport Master Plan as well as an AES. As a joint user facility, the responsibility for planning and development is divided between both the Department of Defence and TAPL.

The draft Master Plan 2009 is a strategic plan for future airport facilities that will satisfy the forecast aviation demands of Townsville Airport in a way that is compatible with the environment and local community needs. It provides a rational development program for aviation infrastructure that maintains flexibility to accommodate future changes in the dynamic aviation industry.

The existing master plan for the Townsville Airport adopted in 2004 was cognisant of possible future expansion plans of the Department of Defence to runways and associated taxiways. Such expansions are not envisaged to be required in the planning period of the draft Master Plan 2009.

The planning and development of the TAPL lease area requires extensive negotiation and co-ordination between the joint users, Airservices Australia and federal, state and local government agencies whose responsibilities are affected by the Airport. As an update of the existing master plan, the draft Master Plan 2009 reinforces the general development of the TAPL lease area northwards onto vacant lands, representing the aviation and non aviation expansion areas. To cater for the forecast demands, the major redevelopment outlined by the draft Master Plan 2009 is to construct additional RPT and standby aircraft parking areas which requires the demolition of hangars and relocation of tenants, and the expansion and upgrade of the apron pavement, incorporating underground infrastructure augmentation.

It is important to note that the AES and the Airport Master Plan are interactive management documents designed complement each other to ensure effective planning and environmental management at the TAPL lease area.

There are very few areas of intact native vegetation and therefore no areas of environmental significance, in accordance with the Airports Act, have been identified at the site. There are no legislatively significant ecological communities present (for example, under the *Nature Conservation Act 1992* or the *Vegetation Management Act 1999*), and the site serves no known significant ecological function.

Studies conducted at the TAPL lease area and discussions with Queensland Department of Primary Industries have concluded that the areas of greatest environmental value are those containing marine vegetation species which line some of the natural drains. These areas will be managed in accordance with the *Fisheries Act 1994* which provides for the management, use, conservation and enhancement of fisheries resources and habitats.

The adjacent wetlands have been identified as having considerable environmental value and support significant populations of flora and fauna including a number of legislatively significant migratory birds. Figure 2 shows the location of the adjacent environmentally significant Towns Common Conservation Park.

Past consultation with the Gabulbarra Reference Group and the Bindal Reference group has identified that there are no known sites of Cultural Heritage significance at Townsville Airport.



Objective

Continue to maintain Townsville Airport in line with ISO14001:2004 and encourage all employees, contractors and tenants to be actively involved in the system's operation and implementation.

Environment Vision and Policy

TAPL aims to ensure that Airport operations are:

- carried out in an environmentally responsible manner
- in compliance with applicable legislation, standards and accepted management practices
- sensitive to community and public concerns
- continually improving environmental performance.

TAPL developed their first environmental vision and policy in 1998. These are revised annually to ensure they remain relevant, and therefore may be expected to change over the next five years.

TAPL's Environmental Vision

"To become a benchmark for consistent, high level airport environmental performance"

Environmental Policy

TAPL will develop and operate the airport in an environmentally responsible and ecologically sustainable manner and address community standards and needs. TAPL and its staff will:

- Develop, augment and operate its facilities and manage its operations to achieve compliance with statutory environmental requirements.
- Lead and educate its customers in minimising waste generation and environmental impact.
- Make this policy known to the community.
- Consult with its customers and the community to ensure community issues are taken into account and to ensure TAPL's responsibilities and objectives are known.
- Actively participate in regional planning and environmental improvement actions to ensure airport activities are considered.
- Ensure all TAPL staff are aware of this policy, the requirement of the Environmental Management System (EMS) and their responsibilities and are properly trained to discharge their responsibilities in accordance with EMS requirements and are resourced to operate TAPL systems to meet environmental objectives.
- Regularly review its environmental objectives and targets to improve environmental performance.

Review the attainment of policy objectives annually and continuously develop the EMS to reflect changing regulatory conditions, developments in airport operations and changes in EMS requirements as defined by standards and regulatory agencies.

Environmental Management System

TAPL's Environmental Management System (EMS) was developed in line with the International Standard for environmental management systems, ISO 14001:2004. EMS documentation was largely incorporated within the structure of the previous AES (2004-09). This document will continue to be referred to until the EMS format is updated. TAPL ensures continuous improvement through adherence to the ISO 14001:2004 environmental management framework.

All Airport operators are accountable for:

- compliance with the AES, applicable legislation, guidelines, criteria and standards
- adhering to the environmental management plans and procedures developed and documented as part of the EMS.

To ensure effective environment management, all Airport operators are required to implement their own EMS.

The RAAF maintains a separate ISO 14001:2004 certified EMS. This EMS helps deliver significant improvements in environmental management for the Base. TAPL and RAAF ensure that implementation of their respective EMS's facilitates cohesive environmental management across the wider land tenures.

Studies, Reviews and Monitoring

The environmental aspects likely to be significantly impacted by the activities undertaken at Townsville Airport are monitored and measured at regular intervals, or as warranted, in accordance with the Act and Regulations.

TAPL's monitoring programs are summarised in the following table. The frequency indicated is the minimum and additional monitoring is performed as required, in response to events or changes in site environmental conditions. Reporting frequency in table 2 refers to frequency of reports to the TAPL Environment Manager. Any non-conformances will be relayed to the AEO at bi-monthly meetings.

Table 2: TAPL Monitoring Program

Attribute	Parameter/s monitored	Frequency	Reporting Frequency
Routine site inspections	NA	Daily	Daily
Airport Operator Audits	Any activity with potential to harm the environment	High risk: Annually Medium risk: 2-3 years Low risk: every 5 years	High risk: Annually Medium risk: 2-3 years Low risk: every 5 years
Surface water (stormwater)	Physico-chemical parameters, Heavy Metals and Fuels	Up to 3 monitoring events in the wet season 1 event monitoring in the dry season	1 report after wet 1 report after dry
Groundwater	Heavy Metals and Fuels	Six monthly	Included in the above reports
Contaminated land	Heavy Metals and Fuels	2 years	2 years
Category and quantity of waste		2-3 years	2-3 years
Electricity		Monthly	Monthly
Potable water use		Monthly	Monthly
Sewer discharge volumes		Monthly	Monthly
Cultural Heritage		As required	As required

Monitoring is undertaken by appropriately qualified staff or contractors and National Association of Testing Authority accredited laboratories are used for the analysis of samples sent to laboratories for testing.

The results of monitoring are reported in monthly board reports as well as being communicated to the AEO. TAPL produce an Annual Environment Report for the Department, specifying the general environmental management of the Airport, progress towards meeting AES commitments, and any environmental incidents.

TAPL follow a risk management process which has been developed in line with the Risk Management AS/NZ Standard 4360. Risk assessments are undertaken to identify the residual risk level for activities and hazards. The risk level then determines required management practices and the frequency for environmental audits. Audits of Airport operators occur every year for high risk activities, every 2-3 years for medium risk activities and every 5 years for low risk tenants.

Airport operators are subject to environmental audits to ensure:

- compliance with the Act, Regulations and other relevant legislation, standards, guidelines and criteria
- all practices and processes are consistent with the Townsville Airport Environmental Vision, Policy and AES
- TAPL is not exposed to undue financial or environmental risk as a consequence of its operations
- all established monitoring and reporting programs are being progressed in an effective manner
- activities undertaken by Airport operators are conducted in a manner which demonstrates due diligence in respect of environmental performance.

2009 – 2014 AES Targets

Target	Anticipated Completion Date
Construction Environment Management Plan(s) and environmental inspections required for all developments.	Continual
Communicate the AES and EMS through inductions and training for new TAPL tenants and staff	As required
Regular meetings with the AEO to communicate changes to monitoring, new reports, achievements of targets etc.	Two times a month
Categorize all Airport operators through risk assessment process and develop controls and auditing requirements depending upon the allocated risk level.	Two months after commencement of a new tenant lease
Redevelop the EMS as a separate document to the previous AES (2004-09).	December 2010
TAPL management to undertake annual reviews of the EMS as required by ISO 14001:2004	December of each year
TAPL to undertake audits of the EMS as required by ISO	Every two years

Target	Anticipated Completion Date
14001:2004 and report the results to the Board and AEO.	
Review of TAPL Environmental Vision and Environmental Policy for relevance.	December of each year.
Communicate the AES and EMS to all Airport Stakeholders through: Development of tenant induction package (re) establish a committee focused on environmental management of the TAPL lease area including Airport operators and TAPL management to aid in relationship building and compliance with the Townsville Airport AES and EMS	December 2010
Initiate regular lease reviews incorporating commercial, security and environment aspects of Airport operators.	December 2010
All high and medium risk airport operators as categorized by the RMS system are to have their own Environment Management Procedures	December 2011
Communicate the AES and EMS through inductions and training for existing TAPL tenants and Staff	December 2011
Investigate options for financial incentive to tenants for positive environment performance and attendance at an environmental committee.	December 2011
Develop and implement purchasing guidelines to ensure all products purchased have minimal impact upon the environment where ever possible.	June 2013

2004 – 2009 Targets

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion Date	Achievement Status
All airport operators to have their own Environment Management Procedures by 2008	Conducted initial training June 2005	Incomplete: TAPL has established a new target aimed at medium and high risk tenants.



Air Quality and Emissions

Objective

Air emissions over which TAPL have legislative responsibility to be in line with Commonwealth and State air quality standards.

Environmental Aspects

Air quality is affected when gases, dust, fumes or odours are emitted into the atmosphere in amounts unsustainable for the maintenance of human health and well being, as defined in relevant legislation.

Activities which may impact air quality at Townsville Airport include but are not limited to:

- aircraft ground running, aircraft refuelling and maintenance
- fuel storage
- ground vehicle operations and refuelling
- ground service equipment maintenance and exhaust emissions
- exhaust emissions from passenger vehicles
- chemical spraying
- lawn mowing
- fire fighting
- use of air conditioners, pumps and generators
- painting / paint stripping

- construction and earthworks.

Potential Environmental Impacts

Air pollution has the potential to be harmful to the health or comfort of humans and animals or cause damage to plants and materials. In the case of ozone depleting substances (ODS) and greenhouse gases, air quality may be impacted on a broad scale.

The pollutants associated with Airport emissions include particulate matter, hydrocarbons, oxides of nitrogen, carbon monoxide, ozone, volatile organic compounds, sulphur dioxide, chlorofluorocarbons and ODS's. Emissions from Airport activities can reduce air quality in the Townsville Airport airshed. Localised emissions may also have a detrimental effect on Airport operators and users in the immediate vicinity of a source.

Measures to Manage Impacts

Activities potentially impacting air quality undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures.

Air emission mitigation measures include:

- collection and disposal of ODS from air conditioning units
- avoidance of pest controls containing methyl bromide
- maintenance of Chemwatch program.
- occupational Health and Safety measures in the handling and use of hazardous materials
- annual review of Asbestos Management Plan
- regular maintenance of TAPL fleet vehicles

All Airport operators are required to report any incident that causes, or has the potential to cause environmental harm including adverse effects to air quality.

Previous investigations have shown that total Airport emissions consistently fall below relevant statutory levels.

Recent Achievements

- Air Emissions Inventory (AEI) undertaken in 2007, showing a significant reduction in emissions since the previous AEI (1999).
- Dust control measures incorporated into 'Method of Work Plans' and Construction Environment Management Plans as standard.
- Environmental Complaint procedure developed and implemented.

2009 – 2014 AES Targets

Target	Anticipated Completion Date
Annual review of EMS objectives and targets for air quality and emissions to ensure continual improvement	December of each year
Develop internal audit process to ensure compliance with licensing requirements for refrigerant recovery/disposal	October 2011
Continuation of appropriate licensing requirements for refrigerant recovery/disposal	Annually
Create an action plan from air emission inventory to identify possible reductions through appropriate control measures.	October 2011
Undertake air emission monitoring to determine if there was a 5% reduction in VOCs, NOx SO2 and CO emissions from 1999.	June 2011
Review and update existing air emission inventory	June 2013

2004 – 2009 Targets

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion Date	Achievement Status
Reduce dust emissions from helicopter ground running and lawn mowing activities by 10% by 2008 over the base year 1999	On-going	Completed
Review and update existing air emission inventory	On-going	Completed
Reduce VOCs, NOx, SO2 and CO emissions by 5% by 2008 over the base year 1999	On-going	On-going: Air emission monitoring was undertaken in 2005 and updated in 2006. No further monitoring was undertaken to establish if the reduction target was met, this has been re-set as a target in the 2009- 2014 AES to establish if the TAPL lease area has reduced emissions by 5%.
Cease the usage of ozone depleting substances in accordance with government policy and time frame	On-going	On-going: No methyl bromide is stored on site nor has it been used at the TAPL lease area in recent years.



Surface and Groundwater

Objective

To continually improve activities and infrastructure within the Townsville Airport Pty Ltd lease area to minimise the potential for surface water and groundwater pollution both on and off site.

Environmental Aspects

Townsville Airport lies adjacent to Louisa Creek and Rowes Bay Canal at the eastern margin of the greater Bohle River catchment, on a low lying expanse of coastal wetlands. There are no naturally occurring water ways on TAPL's leased area. Stormwater drains receive runoff from the Airport and from neighbouring urban and industrial areas. A predominant water feature is the drain running along John Melton Black Drive. The catchment is adjacent to the Bohle River Fish Habitat Area and drains into Rowes Bay, which is part of the Great Barrier Reef World Heritage Area. Additionally, the ecosystem of Rowes Bay Canal has been recognised by Townsville City Council as being critical to maintaining water quality in the receiving waters of Cleveland Bay.

Stormwater data indicate that some levels of heavy metals, copper, lead, zinc and cadmium are "intrinsically" high and are in non-compliance with legislation guidelines. It is thought that landform and tropical processes may have caused this effect as stormwater from nearby catchments shows similar tendencies in contaminants. Development of a Local Water Quality Standard for the TAPL lease area is required in order to determine the realistic impact the lease area has on the local watershed.

The groundwater table has been recorded at depths of between 0.5 metres and 2.0 metres below ground level. Ground water flows to the south east, or toward adjacent residential development.

Activities which may adversely impact upon surface water and groundwater on the TAPL lease area and beyond include:

- transportation, storage and handling of fuels, oils and chemicals
- maintenance and ground running of aircraft engines, vehicles, mechanical plant and

transformers

- sewage system
- weed and pest control
- construction and earthworks
- historical land use
- placement of fill and waste materials
- nearby hazardous goods storage
- fire training.

Historical land use, including the previous intensive military occupation of the Airport, may have led to persistent residues of contaminants in both the groundwater and soil.

Potential Environmental Impacts

The identified activities may result in the following environmental impacts:

- contamination from spills or leaks
- erosion and sedimentation
- persistent residues of contaminants
- contamination from disturbed acid sulphate soil (ASS).

Surface water and groundwater pollution from current Airport activities may adversely impact on the environmental values of local waterways and the adjacent wetlands, with potential detrimental outcomes such as:

- death of aquatic organisms
- potentially toxic algal blooms
- failure to meet water quality objectives and guidelines
- risk to public health.

Measures to Manage Impacts

Activities that potentially impact on surface and ground water quality undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures.

Awareness and role specific training is undertaken by all Airport operators whose duties may pose a risk to surface water or groundwater. This training encompasses:

- environmental inductions

- spill response procedures
- use of pollution control devices
- reporting procedures in the event of a pollution event
- potential environmental impacts of surface and ground water pollution.

TAPL implements a number of measures to manage, monitor and control the impacts of water pollution on-site and on adjacent catchment areas:

- development of Construction Environmental Management Plans for projects with environmental risk
- Airport Operators are to provide documentary evidence of compliance with the Airport rules and relevant legislation
- installation and regular maintenance of stormwater treatment devices
- auditing of duties and activities that may affect water quality
- development of spill response procedures
- erosion and sediment control measures during construction and maintenance
- targeted inspections and monitoring of 'high risk' contaminated sites such as landfill and active hydrant lines
- on-going surface water and groundwater quality monitoring. Groundwater monitoring is undertaken at the historic landfill site to monitor leachate and the airport tarmac. Surface water monitoring is undertaken in the stormwater drains at several locations around the airport.

All Airport operators are required to report any incident involving the loss, spillage or disposal of solid or liquid hazardous material.

Recent Achievements

- Review of the Townsville Airport Water Quality Monitoring Program.
- Progress made in developing a Local Standard for water quality.

2009 – 2014 AES Targets

Target	Anticipated Completion Date
All stormwater runoff from Airport land treated* prior to discharge off-site (*treatment may include any type of passive and active process that improves water quality).	On-going
All future developments on site must not add to the current Airport site drainage coefficient (rate of flow per unit area drained).	On-going as a part of each new development
Annual integrity testing of all underground storage tanks and active hydrant lines for all airport facilities.	Annually
Site wide inspection of potential erosion/sedimentation risks prior to start of wet season.	October each year
Completion of a Local Standard for water quality with approval from DITRDLG and AEO.	December 2010
Expand Water Quality Monitoring Program to include water clarity testing (TSS & Turbidity) and to allow the identification of specific contamination sources, where possible	December 2010
Develop stormwater quality and drainage strategy for the TAPL lease area and future developments.	June 2010
Engineering review and rectification (if required) of stormwater retention basin.	June 2013
Initiate meetings with stakeholders from the upstream stormwater catchment areas with an aim to improve stormwater quality.	June 2013

2004 – 2009 AES Targets

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion Date	Achievement Status
Maintain, and where necessary upgrade, the surface water pollution control devices such as oil-water separators in TAPL and tenant facilities bunding around fuel/oil and chemical storage tanks, grease pollution traps and stormwater drains	On-going	Completed

Develop and implement appropriate procedures to minimize pollutant discharge from TAPL and tenant facilities	Dec 2004 On-going	Completed
Continue to implement a stormwater monitoring program	On-going	Completed
Develop and erect environmental signage at strategic locations to encourage improved housekeeping and work practices by TAPL employees, tenants and contractors	Dec 2005	Completed
Collaborate with catchment stakeholders to identify whole-of-catchment management opportunities	On-going	Completed
Review the draft Water Quality Local Standard	2007	Partially Complete: Consultant commissioned in early 2007 as part of a two stage process. Stage 1 completed. Completion date set for 2011.
Water discharges from the TAPL lease area comply with applicable guidelines and criteria, particularly the criteria set out in the <i>Airports (Environment Protection) Regulations 1997</i>	On-going	On-going: Due to elevated metal levels that exist locally TAPL will complete a Local Standard by 2010 to use as site specific guidelines for water quality. TAPL implements water quality monitoring for both stormwater and groundwater.



Objective

To continually improve work practices and infrastructure across the site at Townsville Airport which could contribute to soil contamination and de-stabilisation.

Environmental Aspects

Townsville Airport is dominated by solidized solonetz soil, characterised by thin sandy loam overlying heavy clay subsoil. These soils generally have poor physical properties and low fertility with engineering limitations. The subsoil clays have poor drainage characteristics and are highly dispersive with adverse chemical properties causing corrosion of underground services. They have moderate to high salt content and contain iron sulphides which when exposed to air produce sulphuric acid, often releasing toxic quantities of iron, aluminium and heavy metals, commonly referred to as Acid Sulphate Soils. .

The site has operated as an active airport since 1939 and in that time has been subject to activities which could cause soil contamination, including intensive military occupation during World War II. Various sites are known to have been contaminated at some point in the Airport's history.

Some areas at the TAPL lease area have been identified in the Airports Environmental Site Register as containing contaminated land and are classified as being either - confirmed, probable and possible. These areas and their rating are listed in Appendix A and Figure 3 includes some of the areas of known contamination listed on the Environmental Site Register. Further investigations will be conducted to confirm the status of these areas and where ever possible will be remediated as part of development works.

Past and present activities with the potential to impact soil quality at Townsville Airport include:

- fuel storage and dispensing
- mechanical and electronic maintenance

- chemical storage and handling
- storage and use of pesticides and herbicides
- construction and earthworks
- historical land use
- placement of fill and waste materials
- nearby hazardous goods storage
- fire training.

Historical land use, including the previous intensive military occupation of the Airport, may have led to persistent residues of contaminants in both the groundwater and soil. Given the nature of past and present activities undertaken on the airport, it is assumed that chemicals of potential concern in soil would include petroleum hydrocarbons, metals and other elements, pesticides and nutrients.

Potential Environmental Impacts

The identified activities may result in the following environmental impacts:

- contamination from spills or leaks
- contamination from disturbed ASS
- erosion and sedimentation
- particulate air pollution.

Contaminated soil may pose an occupational health and safety risk as well as causing adverse impact on environmental values such as biodiversity and water quality.

Measures to Manage Impacts

Activities which may impact on Airport soil quality undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures.

Awareness and role specific training is undertaken by all Airport operators whose duties may pose a risk to soil quality. This training encompasses:

- spill response and operating procedures
- risk assessments and routine inspection requirements
- general environmental awareness training
- emergency response procedures for fuel and chemical spills

- maintenance of Chemwatch program
- other relevant procedures, e.g. liquid waste management, underground storage system management.

TAPL implements a number of measures to manage, monitor and control activities with the potential to impact soil quality, including:

- development of Construction Environmental Management Plans for projects with environmental risk
- auditing of duties and activities that may affect soil quality
- routine inspections and risk assessments of fuel, oil and chemical storage facilities
- ensuring airport operators provide documentary evidence of compliance with the Airport rules and relevant legislation
- ensuring external contractors declare a full list of hazardous substances prior to entering the Airport site
- auditing construction/landscaping plans and activities
- undertaking validation testing around infrastructure with the potential to contaminate soil.
- Development of an ASS Management Plan for any works with potential to disturb ASS, which covers determining the extent of impact and the level of remediation required.

All Airport operators are required to report any incident involving the loss, spillage, storage or disposal of solid, liquid or hazardous material.

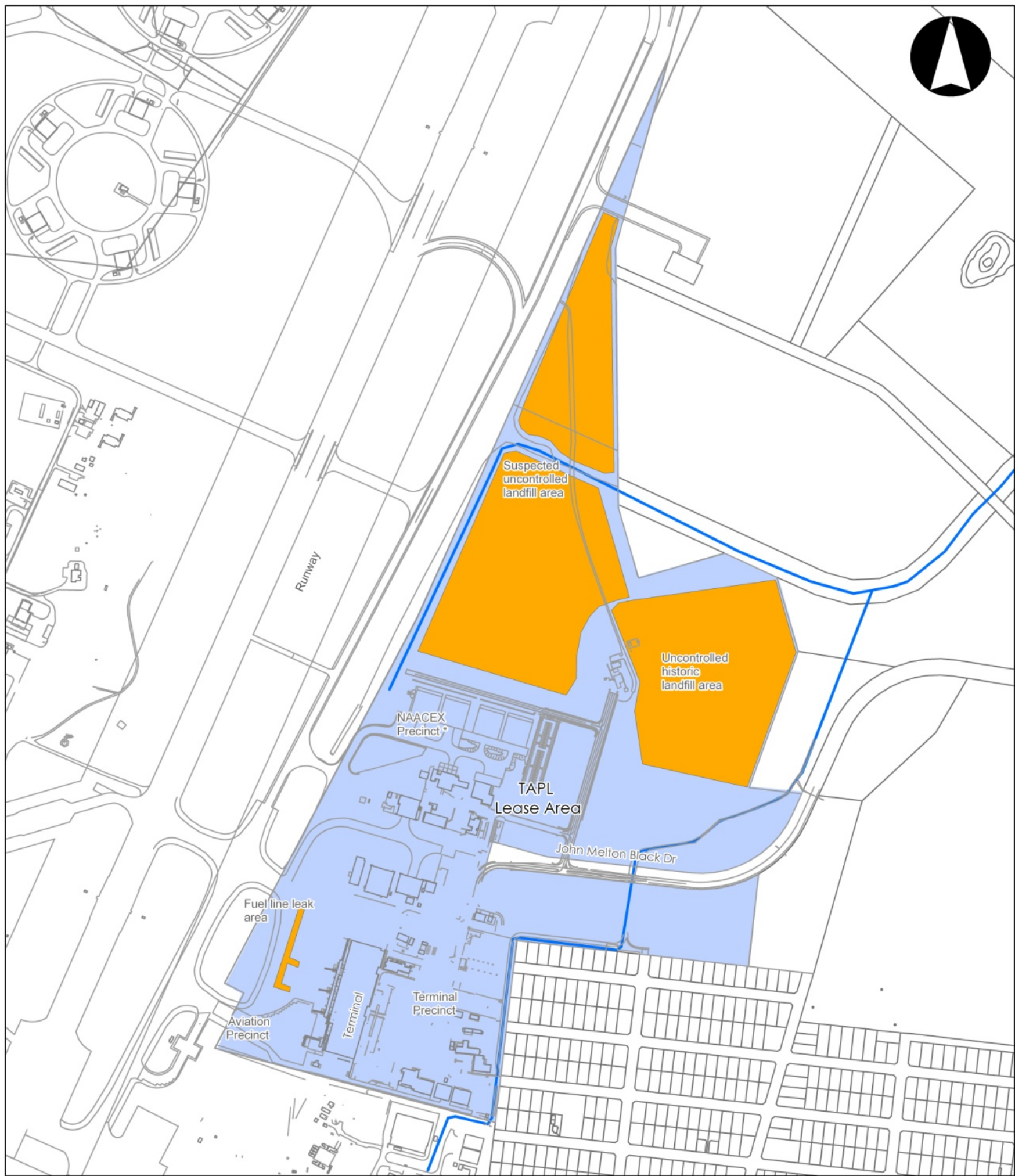
Areas of contamination are documented and maintained in the Townsville Airport Contaminated Site Register. Sites of concern, including ASS, are managed or remediated at the time of ground disturbance.

Any suspected contamination as a result of activities on the TAPL lease area is investigated by a suitably qualified environmental auditor. Any Airport operator responsible for a contamination event is required to implement remedial and monitoring actions as recommended. Site contamination audits may also be required for legal and statutory purposes, prior to acquisition or disposal of any site by TAPL, or as part of the due diligence process.





Contractors are required to undergo site inductions and relevant environmental awareness training prior to commencing work at Townsville Airport. These inductions will highlight areas of known or suspected contaminated soil. During construction activities, appropriate controls must be implemented, including for sediment and erosion minimisation and managing ASS and contaminated soil.

Recent Achievements

- Inventory of known and potential contaminated sites has been developed and is continually updated.



Legend

-  Water Ways
-  Suspected areas of contamination
-  TAPL Lease Area
-  Cadastre & services



Airport Environment Strategy

Cadastre Data supplied by TAPL
 Date unknown
 TITLE: Location and Services
 PREPARED BY CONSULTANTS:
 Ecosure Pty Ltd
 AUTHORISED: Phil Shaw (Ecosure)
 DRAWING NUMBER: GE72
 DATE: October 2009 (REV01)

***NAACEX - Northern Australia
 Aerospace Centre of Excellence**
 Do not use for scale

**Figure 3
 Areas of
 contaminated land**

Figure 3 – Areas of Contaminated Land

2009 – 2014 AES Targets

Target	Anticipated Completion Date
Potential developers to be made aware of any land management issues	From 2010 onwards
All future construction work to have external consulting company to ensure environmental compliance.	From 2010 onwards
Develop erosion/sedimentation control guidelines for all earth works and development activities.	Prior to all earth work and development activities
Site wide inspection of potential erosion/sedimentation risks prior to start of wet season.	Annually
Continue annual audits of the use, handling and storage of hazardous substances and dangerous goods.	Annual
Update of contaminated land inventory	On-going
Develop soil monitoring program	December 2011
Review known contaminated sites	Every two years (December 2011, December 2013)
Map all areas of known contamination at the Airport. Update as required	June 2011

2004 – 2009 AES Targets

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion Date	Achievement Status
Undertake audit/risk assessment to assess compliance and requirement of system	December 2004	Completed
Develop and finalize EMP	June 2005	Completed
Upgrade where necessary, procedures and documentation by December 2005 and facilities by December 2006	December 2005 & December 2006	Completed
Conduct training, briefings and awareness for all airport users (including lessees and	December 2005, then as required	Completed

contractors), by December 2004 and then as required		
Commence period audits of hazardous substances and dangerous goods, use handling, storage and facilities (at least annually) from December 2004	December 2004, then annually	Completed
Update inventory of known and potential sites and characterize risk of contamination across lease	June 2005	Completed
Stipulate conditions for investigation and remediation for building works on the lease area: <ul style="list-style-type: none"> · Landfill · JUHI Hydrant Line · Any other site identified in inventory 	On-going	Completed
At times when incidents that may cause contamination occur, implement remedial actions in line with other EMPs	On-going	Completed
Manage and/or remediate sites of concern	On-going	No land was remediated during the 2004-2009 AES period; TAPL will manage and/or remediate any contaminated sites as apart of development works.



Objective

To identify and appropriately manage any threatened/endangered species or ecosystem at Townsville Airport while minimising the threat of aircraft bird strike.

Environmental Aspects

The TAPL lease area has been highly modified by human activity leaving little undisturbed vegetation or fauna habitat. Disconnected remnants of local vegetation communities remain, including:

- Salt marsh – dominant species include *Halosarcia indica*, *Halosarcia halocnemoides* and *Sarcocornia quinqueflora*
- Salt meadow–dominated by Salt Couch (*Sporobolus virginicus*). Associated vegetation includes Salt Water Paspalum (*Paspalum vaginatum*) and *Fimbristylis polyrichoides*
- A mangrove community bordering adjacent stormwater drains, predominantly composed of *Avicennia marina*.

Marine plants on the TAPL lease site have colonised highly disturbed environments and are predominantly in non-tidal areas or at the outer extent of highest astronomical tides. Despite this, the marine plants occurring here provide a number of ecological services. They assist in nutrient cycling and capture and increase the quality of water entering the catchments of Mundy Creek and the nearby Townsville Town Common wetlands. The marine plants also provide essential ground cover which prevents soil erosion. Legislatively significant bird species are known to utilise the Airport sporadically, predominantly in transit to the Townsville Town Common Conservation Park.

A number of weed species are present at Townsville Airport, including listed and non listed weed species and some garden exotics. Para Grass (*Urochloa mutica*) has perhaps the greatest influence over the site, with dense infestations. Pest fauna species recorded at the TAPL lease area include Brown Hare (*Lepus capensis*), Cat (*Felis catus*), Dog (*Canis lupus*), Feral Pig (*Sus scrofa*) and House

Mouse (*Mus musculus*).

The Town Common, adjacent to the Airport, provides significant wetland habitat for large and diverse range of water birds. The park also provides a refuge for many inland bird species during the dry season, and particularly during periods of drought. It is a major resting and breeding area for migratory birds during spring and autumn migrations between Australia and Asia.

The presence of so many bird species in close proximity to Townsville Airport creates a risk of bird strike. Any collision between aircraft and wildlife may cause aircraft damage and threaten human safety.

During the past decade, the rate of bird strikes at Townsville Airport has ranked significantly with other Australian airports; however since 1998 bird strikes have been reduced by more than 60%. This has predominately been achieved through the development and implementation of a comprehensive Bird and Wildlife Management Plan including extensive drainage improvements by Defence.

Activities which may adversely impact upon biodiversity at Townsville Airport and beyond include:

- transportation, storage and handling of fuels, oils and chemicals
- weed and pest control
- construction, earthworks and vegetation clearing
- aircraft movement.

Potential Environmental Impacts

The identified activities may result in the following environmental impacts:

- degraded habitat quality
- reductions in habitat area
- bird and wildlife strike.

In addition, weeds and pest fauna species on site may exclude native species.

Measures to Manage Impacts

Activities potentially impacting on biodiversity undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures.

TAPL implements a number of measures to manage, monitor and control activities with the potential to impact biodiversity:

- development of Construction Environmental Management Plans for projects with

environmental risk

- Use of native plant landscaping guidelines during development of any new gardens or upgrading of existing gardens. Regular review of landscaping guidelines
- Use of native plants during the re-vegetation and stabilisation of any exposed or disturbed earth
- controlled use of herbicides and pesticides
- continued implementation of Bird and Wildlife Management Plan
- controlling access to areas with potential for biodiversity values.

Routine monitoring of activities such as the storage, handling and transport of hazardous materials and construction/landscaping works assists in minimising the effects of any incident on flora or fauna at, or adjacent to, the TAPL lease area .

Flora and fauna monitoring is conducted to identify any legislatively significant species on-site. Listed Weed incursions are inspected to ensure compliance with State Government requirements.

All Airport operators are required to report any incident which may impact on biodiversity, including:

- incidents involving the loss, spillage, storage or disposal of solid, liquid or hazardous waste
- any incidence of plant removal or disturbance
- any incidence of fauna sighting, disturbance or harm.

Recent Achievements

- Desktop study to identify any impacts of TAPL operations on the ecological integrity and biodiversity of the Town Common (2000). Recommendations are being implemented (on-going).
- Flora and fauna survey of TAPL lease area (2006).
- Development of TAPL's Bird and Wildlife Management Plan (2003). The plan is regularly updated and implementation is on-going.
- Review of birdstrike data to identify risk species.
- Attendance at the Annual Wildlife Strike Forum in Melbourne 2007.
- Continuation of the Townsville Airport Bird Management Committee (1998 to present).
- Landscaping species inventories are maintained to ensure native vegetation is used where possible and bird attracting plant species are minimised.

- Comprehensive and integrated Mosquito (vector) Management Plan developed (2006).

2009 – 2014 AES Targets

Target	Anticipated Completion Date
Full terrestrial and aquatic ecological assessment of airport	December 2012
Continued implementation of the Bird and Wildlife Management Plan, updating where necessary in line with best practice	Annual revision, on-going implementation
Review strike data and reassess the risk species to aviation	Annually
Identification and use of alternative methods of pest control that may have less environmental impacts.	June 2013
Rehabilitation/re-vegetation of areas within the TAPL lease area which are un-suitable for development.	December 2014
Undertake a scoping study into developing a Pest Management Plan which involves the TAPL lease area as well as neighboring properties.	June 2013

2004 – 2009 AES Targets

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion Date	Achievement Status
By December 2005, undertake an assessment of the impacts of TAPL activities on the ecological integrity and bio-diversity of the Town Common	December 2005	Completed
Develop and commence implementation of an appropriate management plan by December 2006 to minimize any significant impact on the bio-diversity of the Town Common	June 2006	Completed

Any area disturbed by future development is revegetated with native grass/plant as soon as practicable	On-going	Completed
Any area disturbed by future development is revegetated with native grass/plant as soon as practicable	On-going	Completed
Identify any threatened or endangered species of mammals, reptiles, amphibians and insects on the airport by December 2005 and implement monitoring/ management programs as appropriate for protection of such species	December 2005	Completed – no threatened or endangered species were recorded.
Minimise the amount of bird strikes at Townsville Airport	On-going	Completed
Continue to develop the Bird and Wildlife Management Plan	On-going	Completed
Provide advice and leadership in the development of a national Wildlife Strike Forum	On-going	Completed
By December 2005, to develop a comprehensive and integrated Mosquito Environment Management Plan	December 2005	Completed



Objectives

Implement waste hierarchy (reduce, re-use and recycle) to minimise waste to landfill.

Ensure all hazardous waste is stored and/or disposed of in accordance with relevant legislation and standards.

Environmental Aspects

The activities undertaken and services provided by Airport operators at Townsville Airport contribute to the generation of a range of wastes. The types of wastes generated within the TAPL lease area can be categorised into:

Solid Waste	Office waste (used and discarded stationeries, furniture), packaging materials, food scraps, plastic and glass bottles and containers, discarded spare parts and construction materials, solid waste generated from aircraft and site cleaning and solid green waste generated from landscaping
Liquid Waste	Sanitary waste from office and workshop areas, vehicle and aircraft wash down bay waste, water from washing of workshop areas, sanitary waste from aircraft and liquid waste from commercial kitchen, bars, bistro and catering
Hazardous Waste	Waste oil and fuel, oily rags, waste solvents, thinners, pesticides, insecticides etc, interceptor trap waste, asbestos, batteries, Polychlorinated Biphenyls (PCB's), and empty containers previously containing hazardous substances such as poisons, paints, insecticides and pesticides.

All solid waste generated by Airport operators is collected for off-site disposal, excepting toxic/hazardous waste which is disposed of by an accredited hazardous waste receiver. Trade waste generated by Airport operators is released to sewer after on-site treatment where required.

Townsville City Council monitors the treated output to ensure appropriate treatment.

All Airport buildings are connected to sewer, except for the Sky Snacks facility, which is on a separate septic system. The easement connects to Townsville City Council's Mt St John's Sewage Treatment Plant, one kilometre to the west of the southern end of the airport.

Potential Environmental Impacts

The creation of waste uses natural resources, while its disposal takes up landfill space. Energy is required to recycle waste and fuel is necessary to transport it. Incorrect disposal of waste can cause contamination or pollution issues, as well as negatively impacting upon the wider community.

Measures to Manage Impacts

Activities which produce waste undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures.

Management practices are based on the waste management hierarchy, and are adopted in the preferred order:

- waste avoidance
- waste re-use
- waste recycling
- energy recovery from waste
- waste disposal.

TAPL implements a number of measures to manage, monitor and control activities with the potential to produce waste:

- development of Construction Environmental Management Plans for projects with environmental risk
- implementation of controls and training on the correct disposal of liquid, solid and hazardous waste
- Airport operators are required to provide documentary evidence of compliance with the Airport rules and relevant legislation
- recycling of 6 volt batteries, paper and cardboard recycling
- minimisation of the use of paper used through the Share Point system
- ensuring all contractors used hold appropriate waste disposal and management credentials
- review of Asbestos Management Plan yearly

- maintenance of Chemwatch program to help minimise hazardous waste.

Recent Achievements

- Maintenance of employee awareness program highlighting the importance of waste minimisation.
- Waste audit was completed in 2005 to determine the sources and quantity of each type of waste generated at the airport.
- Signage at waste disposal areas has been erected where appropriate.

2009-2014 AES Targets

Target	Anticipated Completion Date
Conduct training for all Airport operators on the waste hierarchy.	Undertaken as part of the existing staff and tenant training due by December 2011 and new tenant and staff training as a part of an on-going process.
Waste volume reporting clause to be incorporated into new and existing leases.	December 2010
Develop internal reporting and checking procedures for Queensland regulated waste tracking system.	2010
Undertake a waste audit for terminal and TAPL operations.	October 2012
Develop a Townsville Airport Waste Management Plan and communicate to all Airport operators.	December 2012
Develop waste volume register.	December 2012
Determine if office waste generation in TAPL facilities have been reduced by 25% from 1999 volumes through a waste audit.	June 2013
Reduce total terminal waste by 20% from 1999 volumes per-passenger by 2014 and implement waste volume reporting for terminal tenants and common use receptacles.	November 2014

2004 – 2009 AES Targets Achievement Status

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion Date	Achievement Status
Undertake a waste audit by December 2004 to determine the sources and quantity of each type of waste generated at the airport	Dec 2005	Completed
Reduce office waste generation in TAPL facilities by 25% by December 2008	Review Annually	Office waste has been reduced
As part of an environmental awareness program, develop and maintain employee awareness of the importance of waste minimization	Initial Awareness training – End 2005	Completed
Based on the outcomes of the above audit, develop and implement a strategy to minimize waste generation by 20% by December 2008	On-going then review 2008	Incomplete: included as a target for the 2009 - 2014 AES period.



Objective

Continual improvement of natural resource minimisation practices.

Environmental Aspects

The majority of activities on the TAPL lease require inputs of fuel, energy and water.

Activities at Townsville Airport which use natural resource include:

- fuel use by TAPL fleet vehicles, Airport operator vehicles and airport visitor vehicles
- fuel use by standby generators and other equipment and machinery
- fuel use during aircraft ground movement
- energy use by lighting (internal, street and car park, airfield)
- energy use by heating, ventilation and air conditioning (HVAC) systems
- water use in toilet and washroom facilities, kitchen facilities, aircraft and vehicle washing and grounds maintenance.

Potential Environmental Impacts

The identified activities may result in the following environmental impacts:

- greenhouse gas emissions
- consumption of natural resources
- generation of waste

Impacts from the use of natural resources are usually felt off site, at the location where the resource was sourced. The broader implications of resource use may include de-forestation, mining operations, dams, pollution etc. Reducing the use of natural resources at Townsville Airport can save money as well as reduce the impacts felt off site upon resource supplies.

Measures to Manage Impacts

Activities which consume fuel, energy and water undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures.

TAPL implement a number of measures to manage, monitor and control activities with the potential to consume fuel, energy and water:

- development of Construction Environmental Management Plans for projects with environmental risk
- Airport operators are required to provide documentary evidence of compliance with the Airport rules and relevant legislation
- The Environment Manager reviews all development works to ensure resource use is minimised where ever possible
- the most fuel efficient vehicle is purchased where ever possible
- vehicle use is minimised where ever possible
- stand by generators are only run to comply with minimum standards
- lighting and HVAC isolation of un-used building and terminal areas.

Currently TAPL records and monitors the daily energy use and water consumption. This information is later used to determine ways to reduce the consumption of these resources. As a part of management strategies, airport operators are required to ensure that appropriate measures are implemented to achieve TAPL's energy minimisation strategy and water conservation program.

Recent Achievements

- Development of natural resource minimisation EMP's and subsequent communication measures developed.
- Consumption values for 2003 – 2008 have been graphed for Townsville to be used for future energy and water consumption monitoring.
- An energy audit was conducted in December 2004.
- Program developed to ensure all airport operators are aware of all the energy minimisation strategies and water conservation strategies and targets. Awareness program is on-going.

- TAPL works with the Shuttle bus operators and Townsville City Council to review use and promote public transport, as a mode of access to/from the airport.
- An office energy management program for TAPL offices was developed as part of the energy minimisation strategy.

2009 – 2014 AES Targets

Target	Anticipated Completion Date
10% of the energy supply to the TAPL lease area will be sourced from renewable energy sources.	December 2012
Investigate future water efficiency and re-use possibilities with the aim to recycle or re-use stormwater and rainwater.	December 2013
Develop and commence implementation of an energy minimisation strategy and conduct energy audit and implement recommendations from audit.	December 2013
Develop and commence implementation of a strategy for the future monitoring of water consumption.	December 2013
20% of the energy supply to the TAPL lease area will be from renewable energy sources.	June 2014
Conduct feasibility and cost benefit study for on site development of renewable energy generation.	June 2014
Investigate options to minimize the use of all water use on site (potable and non-potable) and implement recommendations from the 2008 Water Audit	June 2014
Convert 50% of fleet to a more efficient fuel source.	December 2014.

2004 – 2009 Targets Achievement Status

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion Date	Achievement Status
Conduct Audit Report by end of December 2004	December 2004	Completed: An audit was conducted in December 2004.
Develop and commence implementation of a strategy for the future monitoring of energy consumption by August 2005	August 2005	Completed: Consumption values were graphed for comparison.

2004 – 2009 Target	Completion Date	Achievement Status
Develop and commence implementation of a strategy for the future monitoring of water consumption by August 2005	August 2005	Completed: Consumption values have been graphed for Townsville.
Develop and commence implementation of a water conservation program in conjunction with airport operators by August 2005	August 2005	Not Achieved: A formal strategy (written) was not achieved during the reporting period. However, the TAPL team participated in a review of TAPL's Water and Energy EMP's which involved the creation of a series of posters.
Develop and commence implementation of an energy minimisation strategy by August 2005	August 2005	Not Achieved: A formal strategy (written) was not achieved during the reporting period. However, the TAPL team participated in a review of TAPL's Water and Energy EMP's which involved the creation of a series of posters.



Objective

To minimise ground based noise and consider the effect on airport operators and the community.

Environmental Aspects

Aircraft noise is the most obvious and pervasive environmental effect of airports on the community. TAPL is however, not responsible for the noise created when aircraft are in flight, landing, taking off, or taxiing.

TAPL do however have responsibility for ground-based noise sources which affect the environment in the vicinity of the airport. Noise from airport activities may impact commercial receptors, including Airport operators and surrounding businesses, and sensitive receptors, including nearby residential areas.

Activities which may create an adverse noise impact include:

- ground running of aircraft engines
- use of mechanical plant and aircraft servicing equipment
- auxiliary power units and air cycle machines on aircraft
- construction and development
- use of vehicles.

Potential Environmental Impacts

The identified activities may result in the following environmental impacts:

- negative impacts to human hearing

- disturbance to local fauna
- disturbance and nuisance to the local community, businesses and Airport operators.

Measures to Manage Impacts

Activities with potential to emit high volumes of noise undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures.

TAPL implements a number of measures to manage, monitor and control activities with the potential to produce ground based noise:

- development of Construction Environmental Management Plans for projects with environmental risk
- working together with the Department of Defence to implement measures to reduce noise where possible
- use of a noise complaint reporting form and maintenance of a Noise Complaint Register, all complaints are responded to and are reported to the board on a monthly basis.
- Ground Running Policy, which limits time for aircraft ground running, is reviewed regularly (every 2 years) or when required
- development of Construction Environmental Management Plans for projects with environmental risk
- regular servicing and maintenance of all equipment to ensure the lowest noise emissions possible.

Recent Achievements

- Ground running rules implemented to avoid full power engine running during night time (between 2200 and 0500 hours) (1999 – on-going).
- Input into Townsville City Council’s Master Town Planning to assist with the development of appropriate land use planning for areas around the airport.
- Ground running rules for aircraft were reviewed and altered in 2008 in response to Airport operation issues and tenant complaints.

2009 – 2014 AES Targets

Target	Anticipated Completion Date
Continue to investigate ground based noise and control where possible.	Undertaken as a part of tenant audits and during daily site inspections.

Continue to monitor and report noise inquiries/complaints.	On-going – Any noise complaints are reported monthly to Airport Management
Continue to liaise with RAAF on noise minimisation strategies and liaise with Townsville City Council on appropriate land uses around airport.	On-going
Implement annual training and awareness of the TAPL Ground Running Policy	Annually
Continue to improve and enforce the TAPL Ground Running Policy.	Reviewed every two years (December 2011 and December 2014)

2004 – 2009 Targets Achievement Status

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion Date	Achievement Status
Continue to liaise with RAAF on noise minimization strategies	On-going	Completed: TAPL have a good working relationship with the Department of Defence and work together to implement measures to reduce noise – including using the RAAF Ordnance loading area that has sound barriers on them. This is included as a part of 'Measures to Manage Impacts',
Continue to monitor and manage noise complaints	On-going	Completed: TAPL implements a standard noise complaint reporting form and maintain a Noise Complaint Register. An investigation is carried out on each complaint. Noise complaints are reported monthly to Airport Management. This is included as a part of 'Measures to Manage Impacts',
Continue to improve and enforce the TAPL Ground Running Policy	On-going	Completed: The Ground Running Policy is reviewed every two years. This is included as a part of 'Measures to Manage Impacts',
With RAAF periodically develop ANEF, N70 and Flight Path Movement Charts	July 2005	Completed: Commission in late 2006 and undertaken as part of Master Plan.



Objective

To be mindful and manage any areas of Cultural Heritage at the TAPL lease area in accordance with legislative requirements.

Environmental Aspects

There are a number of buildings at Townsville Airport which date back to World War II, however none have been recorded as having heritage significance.

Aboriginal people are thought to have occupied parts of the Townsville region for about 30,000 years before the area was settled by Europeans. Little documented evidence exists, so anthropologists can only try to obtain evidence from dating of paintings and other artefacts located within the region. This evidence suggests that the Wulgurukaba people occupied the area bounded to the north by the treeless mud flats and estuaries around the Black River, and to the south by the range extending to Cape Cleveland; east to Magnetic Island and the Palm Group, and west to the steep foothills of Hervey's Range through the eucalypt forest.

Prior to development, the TAPL lease area would have sustained a similar environment to that of the adjoining Town Common and provided a significant food resource for Aboriginal groups. However, since 1940, the Airport site has been substantially modified for operational related construction. Land clearing and filling has been so extensive that remaining evidence of Aboriginal occupation is unlikely. Whilst no archaeological surveys or investigations have been undertaken at the lease area, the environmental review conducted by the Federal Airports Corporation in 1993 established that it was unlikely that any significant archaeological site would be present at the airport. The Gabulbarra and Bindal Reference Groups have indicated that they are unaware of any site of indigenous significance within TAPL leased area.

Potential Environmental Impacts

As there are no known Cultural Heritage sites associated with Townsville Airport, impacts upon Cultural Heritage sites or artefacts are considered unlikely.

Activities which may impact Cultural Heritage at Townsville Airport include construction and earthworks.

The impacts of accidental disturbance could lead to damaged or destroyed cultural artefacts or loss of anthropological insight on local communities.

Measures to Manage Impacts

Activities potentially impacting upon cultural heritage undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures.

Construction Environmental Management Plans, addressing Cultural Heritage management, are developed for all projects with environmental risk. In the event that Airport operators uncover a Cultural Heritage artefact the find is immediately reported to TAPL Management and appropriate management processes employed. Any matters relevant to Cultural Heritage will be discussed with the Wulgurukaba and Bindal Reference Groups.

Recent Achievements

- Literature review to identify heritage significant buildings (2006).
- Development of a 'Draft Protocol for Indigenous Community Engagement'.
- Procedures and Permit to Commence Work documents require that no culturally significant artefact is destroyed as a result of construction activities by Airport operators.

2009 – 2014 AES Targets

Target	Anticipated Completion Date
Implement Cultural Heritage awareness training for applicable operators / contractors.	From January 2010 onwards
Maintain an on-going relationship with the Wulgurukaba people and Bindal Reference Groups.	On-going
Finalise the cultural heritage desktop study for Townsville Airport.	December 2012

2004 – 2009 Targets Achievement Status

In order to demonstrate continuous improvement, the targets from the previous AES (2004-2009) are presented below, along with their status. Any targets which were not completed have been added as new targets for the current AES (2009-2014) period.

2004 – 2009 Target	Completion date	Achievement Status
No culturally significant artefact is destroyed as a result of construction activities by Airport Operators	On-going	Completed: This objective has been incorporated into procedures and Permit to Commence Work documents to ensure it is met.
Establish an on-going relationship with the Gabulbarra and Bindal Reference Groups	Meet & Greet June 2005	Completed: TAPL engaged ONCORE Development to assist in the development of a 'Draft Protocol for Indigenous Community Engagement' (PICE). The first project stage has identified changes in Reference Group information. This target is being progressed.
To protect any heritage significant buildings	Identify buildings by August 2005	Completed: Searches were undertaken in Jun 06. Nil Heritage Listed – Nation Trust of QLD; DEH; EPA.

Appendix A

Register of Known Contaminated Sites

Site Name	Contamination Rating
Airport Landfill	Confirmed
Golf Range	Possible
Melton Black Drive/Airport Drainage Canal/ Power House Area	Possible
Jet Fuel Leak Area	Confirmed
Australian Regional Airlines Queensland Sump Oil Storage Area	Former
Straightline Sump Oil Storage Area	Former
Queensland Rescue Services Sump oil Storage Area	Former
Queensland Rescue Fuel Spill Area	Former
End of Runway 07/25	Probable
Blue Water Aviation Sump Oil Storage Area	Former
JUHI Fuel Spill	Probable
FAC Compound Fuel Stained Area	Former
Apron Fuel and Oil Spills/Leaks	Probable
Queensland Rescue Services Ferrous Sulphate Spill	Former
Redundant underground Storage Tanks	Former

Rating system follows the Environment Protection Authority system for classifying contaminated land which is:

- "Probable" contaminated land (mostly land used for a prescribed purpose);
- "Confirmed" contaminated land (land with an identified health or environment risk);
- "Restricted" contaminated land (land with an identified health or environment risk upon which a site management plan is implemented);
- "Former" contaminated land (previously contaminated land that has been cleaned up to a level that would permit unrestricted use or activity);
- "Released" contaminated land (land that was assumed to be contaminated by virtue of, for example, its use

for a prescribed purpose and after investigation proved to be uncontaminated); and

- “Possible” contaminated land (land reported as being contaminated but on which the available information, especially the real property information, is incomplete or otherwise inadequate.