Your Sustainable Airport
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- It is based on certain forecasts and assumptions, and BAC makes no claim as to the accuracy of any information, or the likelihood of any future matter;
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Public Comment

Under the Airports Act, BAC is required to make its Preliminary Draft Airport Environment Strategy (AES) available for public review and comment.

How to Make a Submission

Once you have reviewed the 2009 Draft Airport Environment Strategy, you are invited to make formal submissions regarding the content of the document. Submissions must be made in writing and sent to BAC by:

Post: BAC 2009 Airport Environment Strategy Submissions
PO Box 1433
Milton QLD 4064

Email: info@bacmajorprojects.com.au
Fax: 07 3367 1609

Submissions must be received by 30 March 2009.
FOREWORD

As Managing Director and CEO of Brisbane Airport Corporation (BAC), I am pleased to present our 2009 Airport Environment Strategy (AES). This AES is based on the notion of continual improvement and represents a strategy which will guide the environmental management of Brisbane Airport for the next five years.

As Brisbane Airport continues to grow it is being developed and managed as an international airport by adopting a proactive and sustainable approach to environmental management. BAC has been able to achieve this through the support of our key stakeholders particularly the local businesses and communities of South East Queensland (SEQ), our partners in aviation business and our shareholders.

BAC is an unlisted Australian public company with a strong values-based philosophy, seeking to achieve world’s best practice in corporate and environmental management. It is this approach which drives all that we do, as we invest, innovate and work together to achieve responsible and prosperous growth and create a dynamic business environment known as Brisbane Airport City.

Brisbane Airport is in the perfect position to fulfil its role as the premier gateway airport for Queensland and as a hub for connections to South East Asia and other major cities of the world. The airport has many advantages including 2,700 ha of land, 24 hour operations, commercial and business facilities, close proximity to the Central Business District (CBD), excellent transport links and an effective environmental buffer zone between the airport and residential areas.

This is BAC’s most ambitious AES to date as we foster innovative practice in the environmental management and performance of Brisbane Airport. This AES contains more than 50 actions and commitments regarding how BAC and airport tenants intend to ensure the long-term environmentally sustainable development of your airport.

We hope you share our vision for Brisbane Airport and invite and encourage your comments.

Koen Rooijmans
Managing Director and Chief Executive Officer
Brisbane Airport Corporation Pty Ltd
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### Abbreviations

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<tr>
<td>AASS</td>
<td>Actual Acid Sulfate Soils</td>
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<tr>
<td>ABC</td>
<td>Airport Building Controller</td>
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<td>AEO</td>
<td>Airport Environment Officer</td>
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<tr>
<td>AES</td>
<td>Airport Environment Strategy</td>
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<td>AHD</td>
<td>Australian Height Datum</td>
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<td>ALC</td>
<td>Airport Lessee Company</td>
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<td>ANZEC</td>
<td>Australia and New Zealand Environment Council</td>
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<td>AQIS</td>
<td>Australian Quarantine and Inspection Service</td>
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<tr>
<td>AS/NZS</td>
<td>Australian Standard/New Zealand Standard</td>
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<tr>
<td>BAC</td>
<td>Brisbane Airport Corporation Pty Ltd</td>
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<td>BACF</td>
<td>Brisbane Airport Community Forum</td>
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<td>BATEC</td>
<td>Brisbane Airport Tenants Environment Committee</td>
</tr>
<tr>
<td>BCC</td>
<td>Brisbane City Council</td>
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<tr>
<td>BTEX</td>
<td>Benzene, Toluene, Ethyl Benzene and Xylene</td>
</tr>
<tr>
<td>CAMBA</td>
<td>China-Australia Migratory Bird Agreement</td>
</tr>
<tr>
<td>CBD</td>
<td>Central Business District</td>
</tr>
<tr>
<td>CEMP</td>
<td>Construction Environmental Management Plan</td>
</tr>
<tr>
<td>CPRS</td>
<td>Carbon Pollution Reduction Scheme</td>
</tr>
<tr>
<td>CSR</td>
<td>Contaminated Site Register</td>
</tr>
<tr>
<td>DCP</td>
<td>Development Control Plan</td>
</tr>
<tr>
<td>DITRDLG</td>
<td>Department of Infrastructure, Transport, Regional Development and Local Government</td>
</tr>
<tr>
<td>DTB</td>
<td>Domestic Terminal Building</td>
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<tr>
<td>EMP</td>
<td>Environmental Management Plan</td>
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<tr>
<td>EMS</td>
<td>Environmental Management System</td>
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
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<tr>
<td>EPA</td>
<td>Environment Protection Agency</td>
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<tr>
<td>ESA</td>
<td>Environmentally Significant Area</td>
</tr>
<tr>
<td>ITB</td>
<td>International Terminal Building</td>
</tr>
<tr>
<td>IWA</td>
<td>International Water Association</td>
</tr>
<tr>
<td>JAMBA</td>
<td>Japan-Australia Migratory Bird Agreement</td>
</tr>
<tr>
<td>MWhr</td>
<td>Mega Watt Hour</td>
</tr>
<tr>
<td>KSM</td>
<td>Kingsford Smith Memorial</td>
</tr>
<tr>
<td>NEPM</td>
<td>National Environment Protection Measure</td>
</tr>
<tr>
<td>NGER</td>
<td>National Greenhouse and Energy Reporting Act 2007</td>
</tr>
<tr>
<td>NHMRC</td>
<td>National Health and Medical Research Council</td>
</tr>
<tr>
<td>ODS</td>
<td>Ozone Depleting Substance</td>
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<tr>
<td>OEMP</td>
<td>Operational Environmental Management Plan</td>
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<tr>
<td>PASS</td>
<td>Potential Acid Sulfate Soils</td>
</tr>
<tr>
<td>( \text{PM}_{10} )</td>
<td>Particulate matter 10 microns or less</td>
</tr>
<tr>
<td>Ramsar</td>
<td>The Ramsar Convention on Wetlands</td>
</tr>
<tr>
<td>ROKAMBA</td>
<td>Republic of Korea-Australia Migratory Bird Agreement</td>
</tr>
<tr>
<td>SCADA</td>
<td>Supervisory Control and Data Acquisition network</td>
</tr>
<tr>
<td>SEQ</td>
<td>South-East Queensland</td>
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<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
</tr>
<tr>
<td>SWQMP</td>
<td>Stormwater Quality Management Plan</td>
</tr>
<tr>
<td>TPH</td>
<td>Total Petroleum Hydrocarbons</td>
</tr>
<tr>
<td>UST</td>
<td>Underground Storage Tank</td>
</tr>
<tr>
<td>WEMP</td>
<td>Water Efficiency Management Plan</td>
</tr>
<tr>
<td>WQMP</td>
<td>Water Quality Monitoring Plan</td>
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</tbody>
</table>
BAC, on behalf of the airport community, has prepared the Brisbane Airport AES as the statement to government, industry and the wider community of the intent for environmental management at Brisbane Airport. BAC’s Master Plan sets out the vision for current and future airport land use and the development plan over the next 20 years. This AES, prepared in parallel with the 2009 Master Plan, outlines the strategic approach for environmental management of the airport for the next five years. Essentially this involves managing the impacts of ongoing operations and future growth at the airport.
INTRODUCTION

Brisbane Airport Corporation

Prior to July 1997 Brisbane Airport was owned by the Australian Government and managed on behalf of the Commonwealth by the Government Corporate Enterprise, the Federal Airports Corporation. Following a decision by the Government to privatise airports, BAC purchased a long-term lease (50 + 49 year option) from the Commonwealth with the rights to manage and operate Brisbane Airport for the term of the lease. BAC assumed management and operation of Brisbane Airport on 2 July 1997.

BAC is a private sector company which is more than 80 percent Australian owned, whose shareholders include:

- AMP Investment Services Pty Ltd;
- Citycorp Nominees Pty Limited;
- Colonial First State Private Capital Ltd;
- JP Morgan Nominees Australia Ltd;
- Motor Trades Association of Australia;
- Superannuation Fund Pty Ltd;
- National Asset Management Limited;
- QIC Infrastructure Management Pty Ltd
- City of Brisbane Airport Corporation Pty Ltd; and
- Schiphol Australia Pty Ltd.

BAC in its capacity as the Airport Lessee Company (ALC) sublets parts of the airport site to a range of other businesses and government agencies. As ALC, BAC has a designated role to manage the overall environmental aspects of the site with all other organisations of the airport community having a direct responsibility for the environmental management of their individual operations including those of their contractors and any subcontractors.

Description of Brisbane Airport

Brisbane Airport occupies a site of approximately 2,700 ha located 13 km north-east of Brisbane’s CBD. It is the premier regular passenger transport airport for domestic and international passengers for Queensland as well as serving as a major business centre and economic driver for the State. The area surrounding the airport is highly industrialised and given its coastal location, also has some environmentally important areas within and adjacent to the airport site (see Figure 1).

Some of the most significant industrial neighbours to the airport include:

- the Port of Brisbane;
- the Luggage Point Waste Water Treatment Plant; and
- oil refineries and other heavy industries including fertilizer and concrete manufacturing.

Location

Brisbane Airport is situated on a reclaimed portion of a river delta at the mouth of the Brisbane River. Areas of environmental value adjacent to the airport include:

- Moreton Bay Marine Park (to the north) sections of which are Ramsar declared wetlands;
- Boondall Wetlands (across Kedron Brook Floodway to the west) which are Ramsar declared and on the Register of the National Estate;
- marine habitat of Jacksons Creek (areas on and off airport leased land on the eastern bank of Kedron Brook Floodway) which is documented in the Directory of Important Wetlands in Australia;
- mangrove and saltmarsh communities around Serpentine Creek Inlet and Jubilee Creek mouth (to the north-east, parts of which are within BAC tenure); and
- Bulwer Island and Boggy Creek wetlands (to the east) of which the Brisbane Airport site comprises the major portion of the catchment draining into these wetlands.

Current Operations and Infrastructure

A diverse range of operations is undertaken at Brisbane Airport both by BAC and tenants, contractors and licensees. In support of these operations, significant infrastructure exists on airport including:

- main runway (01/19), 3,600 m long and associated taxiways;
- cross runway (14/32), 1,760 m long and associated taxiways;
- Domestic and International Terminal Buildings and aprons;
- General Aviation and logistics aprons;
- Air Traffic Control and tower facilities;
- aircraft maintenance and support facilities;
- general and light industry;
• catering (airline) facilities;
• freight, warehouse and distribution centres;
• retail outlets;
• car rental workshop, refuelling and washing facilities;
• administration offices;
• refuelling facilities and depot;
• extensive utility networks for the provision of water, energy, sewerage and telecommunications;
• extensive road network corridors and car parking areas; and
• rail link.

While a diverse range of activities occur on Brisbane Airport, BAC in particular, undertakes the following activities:

• terminal management and airline facilitation;
• asset management and maintenance;
• planning for and delivery of utilities across the airport;
• adherence to airfield aviation standards;
• facilitation and management of airport security;
• aviation and commercial property planning, management and development;
• commercial retail management and tenancy management, including car parking; and
• landside transport, planning and management.

BAC, whilst facilitating airline operational requirements within the terminal buildings, does not own aircraft or conduct airline operations.

**Airport Development**

BAC is preparing to meet the demand of future requirements placed on the airport by airlines, air freight organisations, other business interests, as well as regional and state economic development, while adopting a proactive and sustainable approach to environmental management.

**Growth Forecasts**

Brisbane Airport, one of the largest airports by area in Australia, has large tracts of land (approximately 1,000 ha) suitable for commercial and industrial development within the airport precincts identified in successive BAC Master Plans. It is the third busiest international airport in Australia with passenger figures currently 18.5 million per year which has increased from 12.3 million in 2002/03. Forecasts for growth indicate passenger numbers to grow to around 45.1 million by 2029 with aircraft movements expected to increase from approximately 172,000 per year currently to 358,000 per year by 2029.

**Major Developments for Next Five Years**

As identified in the 2009 Master Plan, developments required within the next five year period to facilitate the forecast growth of aviation traffic demand and business and industry attraction are expected to include, but not be limited to:

• optimising capacity of existing airport infrastructure (including runways, taxiways, terminal facilities, utility networks, car parking and road corridors);
• expansion to the Domestic Terminal Building in addition to associated infrastructure and services;
• site preparation works for the future New Parallel Runway approved by the Minister of the then Department of Transport and Regional Services in 2007; and
• business, industry and commercial developments within airport precincts.

**Brisbane AES and Recent Achievements**

The 2004 AES was officially endorsed in June 2004 by the Commonwealth Minister for the then Department of Transport and Regional Services. Since 2004, BAC has undertaken a range of environmental management and monitoring initiatives, the most significant being:

• development of a Water Efficiency Management Plan which provided a management framework for the successful realisation of reducing potable water consumption by 75 percent since 2004 despite passenger growth and commercial expansion over the same period;
• gaining international recognition for water use reduction through winning the International Water Association’s Award for Practical Realisation of Sustainable Urban Water Management in September 2008;
• allocation of approximately 285 ha of airport land for a the Biodiversity Zone to maintain biodiversity values across Brisbane Airport;
• development of a Biodiversity Management Strategy which provides a management framework for the Biodiversity Zone;
• ongoing comprehensive surface water and groundwater monitoring program;
• ongoing management of known contaminated sites in existence prior to July 1997;
• ongoing implementation of an Environmental Management System consistent with AS/NZS ISO 14001; and
• annual inspections of all higher environmental risk tenant operations.
2 CORPORATE SUSTAINABILITY

Corporate Sustainability Program

BAC’s sustainability policy and vision provides a framework for both the 2009 AES and 2009 Master Plan. BAC has adopted a global perspective on sustainability which reaches beyond a risk and compliance perspective. BAC is committed to the responsible development of an Airport City that meets the needs of present generations and is viewed with pride by future generations.

At the onset of the 21st century, groups as diverse as the United Nations and the World Economic Forum and many corporations including those that manage international airports have adopted sustainability as a strategic focus.

BAC has a similar mindset and the pursuit of excellence and leadership by example will drive the sustainability strategies into the future. Four pillars of sustainability underpin the 2009 AES and 2009 Master Plan which include economic, environmental, operational and social sustainability. The BAC sustainability vision addresses each of these pillars.

Our purpose

Our overall aim is to grow shareholder value by creating a prosperous and socially and environmentally responsible airport business community.

Our vision

To develop and manage a sustainable Airport City by:

- achieving strong financial returns for our shareholders and generating regional wealth and employment;
- ensuring the correct balance of built and biodiversity values and the minimisation of adverse environmental impacts;
- ensuring safety and security, capacity for growth, business continuity and service excellence; and
- creating a business environment that values partnerships, people, quality of life and community engagement.

A range of sustainability goals to guide BAC in its planning and decision-making reflect this vision. The essence of these goals is outlined below.

Economic Sustainability

As a privatised airport, shareholder value creation is a primary driver of business decisions by BAC. By continuing to deliver strong financial results and investing in the future, the airport will boost regional wealth and employment.

BAC’s pathways to achieve these goals are by selective and timely growth through diverse revenue streams in addition to efficient use of financial and operating resources.

Innovation and continuous improvement also allows BAC to build revenues and contribute to the region’s economy.

Operational Sustainability

The safe, secure and continuous operation of Brisbane Airport is both a goal and a necessity for the State’s leading airport. Business continuity is linked to maintaining regulatory compliance and ensuring that the necessary capacity and critical assets are available to operate and expand the airport.

BAC strives to maintain excellence in service delivery in the terminals and other parts of the airport.

Environmental Sustainability

BAC is committed to an active response to the long-term impacts of climate change and minimising adverse environmental impacts of aviation and property development activities.

To this end, BAC’s sustainability goals are to maximise energy, water and waste efficiencies, manage noise impacts, balance the built environment and biodiversity values and achieve best practice in urban and built design. The 2009 AES outlines the program and intent associated with BAC’s framework for environmental sustainability.

Social Sustainability

Corporate social responsibility, partnership building and a ‘win-win’ approach to business have been longstanding philosophies of BAC. Primary goals are to:

- foster and respect diversity;
- promote health and safety on airport;
- promote a work life balance;
- improve airport amenities, access and connectivity; and
- achieve stakeholder (staff, airport and community) engagement.

BAC also values the creation and sharing of knowledge for the benefit of all stakeholders.
3 ENVIRONMENTAL MANAGEMENT FRAMEWORK

There are a number of corporate initiatives which support and contribute to the overall environmental management at Brisbane Airport. The management framework at Brisbane Airport can be described in terms of:

- BAC’s Corporate Sustainability Program, which is guided by economic, operational, environmental and social objectives;
- the legislative and regulatory framework pertaining to airport activities which guide the requirements for compliance;
- BAC’s Master Plan, as the principal planning document for airport development;
- BAC’s AES, as the primary overview document which responds to the requirements of the legislation;
- BAC’s commitments and responsibilities under the AES for BAC operations and overall site environmental management (predominantly captured through BAC’s EMS); and
- other airport users’ responsibilities under the AES for the environmental management of their individual operations or activities.

The following diagram (see Figure 2) describes the environmental management framework at Brisbane Airport. Each aspect is discussed in further detail within the chapter.

To support the implementation of this framework, BAC has an established corporate structure for the environmental management.

Environmental Management Objectives

BAC has set a number of key environmental objectives to guide its approach to environmental management at Brisbane Airport:

- continue to maintain an Environmental Management System (EMS) consistent with internationally recognised standard AS/NZS ISO 14001;
- ongoing establishment and review of environmental performance indicators aimed at demonstrating continuous improvement;
- maintain a process capable of ongoing identification and management of the environmental impacts likely to be associated with activities on airport;
- continue to employ strategies aimed at progressively improving efficient use of energy and water resources;
- develop adaptive methods to improve communication and dissemination of issues relating to environmental management and initiatives with BAC staff, contractors, tenants, the wider community and government; and
- maintain an ongoing program for the identification and conservation of objects and matters that have natural or heritage value.

**FIGURE 2 FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT AT BRISBANE AIRPORT.**
BAC environment policy

BAC’s Environment Policy (see Figure 3) is seen as the cornerstone of its EMS and AES and guides the implementation of both. The Policy was initially developed in 2003 in accordance with the requirements of AS/NZS ISO 14001. It represents a formal undertaking by BAC to give due consideration to the potential environmental impacts of all aspects of BAC’s activities and operations.

FIGURE 3  BAC’S ENVIRONMENT POLICY

Brisbane Airport Corporation Environment Policy

Brisbane Airport is the third busiest airport in Australia and growing. It is located 13 km from the Brisbane CBD and in close proximity to Moreton Bay, residential areas and the Gateway Arterial Road Corridor. Brisbane Airport Corporation acquired the long-term lease in 1997 to manage, operate and develop Brisbane Airport.

BAC has an overall environmental responsibility for activities and operations undertaken at the airport, including security, asset management, tenancy management and development projects. All other airport users have a responsibility for the environmental management of their activities.

BAC is committed to:

- operating, managing and developing Brisbane Airport in an environmentally responsible manner;
- complying with the legal requirements which pertain to its operation, and striving to meet other environmental standards to which it subscribes;
- fostering an environmentally responsible culture amongst BAC’s employees;
- minimising adverse impacts on the environment caused by BAC’s operations;
- continually striving to reduce waste and prevent pollution; and
- constantly striving to achieve continual improvement in its environmental performance.

In fulfilling this commitment, BAC will:

- take action to address potentially adverse environmental impacts;
- communicate the Brisbane Airport Environment Strategy, policies and performance to employees, regulators, business partners and the wider community;
- develop, implement and maintain an Environmental Management System which includes the setting and reviewing of environmental objectives and targets;
- periodically review the effectiveness of the Environmental Management System, and identify opportunities for environmental performance improvement;
- identify and seek to conserve objects and matters at the airport that have natural, indigenous and/or heritage value;
- provide appropriate environmental training to BAC employees, and encourage our tenants and contractors to do the same; and
- provide the staff and resources necessary to meet these policy objectives.

All BAC managers are accountable to the Managing Director and CEO for ensuring that this policy is implemented.

Signed: Koen C.E. Rooijmans
Regulatory framework

The regulatory framework for environmental management at Brisbane Airport consists of:

- the Airport Legislation and other relevant legislation;
- the AES; and
- regulatory representatives of the Department of Infrastructure, Transport, Regional Development and Local Government (DITRDLG).

Airport Legislation

In order to oversee privatised Australian airports, the Commonwealth Government established a regulatory framework to manage different aspects of airport activities, including environment. Environmental issues on Brisbane Airport are administered principally by the:

- Airports Act 1996 and its subordinate legislation;
- the Airports (Environment Protection) Regulations 1997; and
- the Airports (Building Control) Regulations 1997.

These are collectively known as the Airport Legislation.

Relevant legislation that is applicable to environmental regulation of activities on airport, whether Commonwealth or State, is identified throughout this document.

DITRDLG Roles – AEO and ABC

DITRDLG is the Commonwealth agency responsible for administering the Airport Legislation. DITRDLG appoint two positions, the Airport Environment Officer (AEO) and the Airport Building Controller (ABC) to administer the Airport Legislation on behalf of the Commonwealth. Both the AEO and ABC positions hold offices at Brisbane Airport. The airport business community, including BAC, all tenants, contractors and other airport users, is accountable to DITRDLG for the implementation of the AES and must take all reasonable steps to ensure compliance with the strategy.

Compliance is overseen by a range of regulatory initiatives including regular update reporting by BAC to the AEO. This includes discussing incidents and monitoring results, inspecting tenant and contractor activities and submitting BAC’s Annual Environment Report to the Minister for DITRDLG.

Legislative Requirements of the AES

The AES covers all environmental matters arising from the operation and expansion at the Brisbane Airport site in accordance with the Airport Legislation. The Airports Act 1996, with further elaboration in the Airports (Environment Protection) Regulations 1997, specifies the matters to be addressed in the AES. Each of the sections detailed in this AES respond directly to a specific requirement or source of environmental impact, as stated in the legislation.

The AES does not include noise and air pollution from aircraft movements which are regulated under separate legislation, the Commonwealth Air Navigation (Aircraft Engine Emissions) Regulations and Air Navigation (Aircraft Noise) Regulations which are the responsibility of Airservices Australia.

The AES does, however, address noise relating to aircraft ground running procedures. Appendix 1 summarises how the legislative requirements for the AES, have been addressed in this 2009 Draft for Public Comment.

AES Approval Process

The approval process involves the preparation, initially, of a ‘Preliminary Draft AES’ for Agency consultation, followed by the preparation and release of the “Draft AES – For Public Comment” inviting comments from the wider community.

Comments are collected and reviewed for incorporation into the document in order to present the “Draft AES” to the Minister for DITRDLG consideration and approval.

Upon approval by the Minister, the Draft becomes the Final AES which is then valid for a five year term.

The process of development and acceptance of the AES is summarised in Figure 4 with the current phase highlighted in orange.

In the preparation of this 2009 Draft AES for public comment, BAC completed a consultation program with Commonwealth, State and local agencies, in addition to consulting with airport tenants and the local communities of Pinkenba and Nudgee.

At the completion of the 60 day public comment phase, BAC will summarise all comments received in a Supplementary Report prior to submitting the 2009 Draft AES to the Minister for approval.
During the public comment phase, the 2009 Draft AES for public comment will be available from BAC’s website, in addition to hard copies being distributed to selected electorate offices and BCC libraries. Once approved and in addition to copies being available in the above locations, the final 2009 AES will also be distributed to existing airport tenants in hard copy for their use.

BAC’s Corporate structure for environmental management

BAC is an established corporate structure that allocates responsibilities for the AES to ensure successful implementation of it.

An overview of the management structure for implementation to the AES is outlined in Figure 5 with further information following.

BAC Board
- periodically reviews BAC’s performance against AES objectives, targets and action plans.

Executive Management
The Executive Management has responsibility for implementing the AES within their respective areas of responsibility which includes:
- ensuring that employees, contractors and tenants under their control are aware of their obligations under the AES;
- communicating BAC’s intent for environmental management of Brisbane Airport;
- conducting works in accordance with the EMS (including BAC’s Environmental Policy); and
- supporting BAC Environment Section in fulfilling the objectives of the AES and EMS.

Environment Section
- manages the review, preparation and implementation of the AES;
- develops and implements the EMS;
- periodically reviews BAC’s performance against AES objectives, targets and action plans;
- provides periodic feedback to Executive Management regarding BAC’s performance against AES action plans;
- establishes and maintains relevant environmental government and agency relationships;
- prepares Annual Environment Report for BAC Board and DITRDLG; and
- prepares the annual environment budget.

BAC will ensure that staff responsible for environmental management will have appropriate industry recognised qualifications, training or experience.

BAC’s environmental management obligations
Essentially, BAC’s obligations under the Airport Legislation and the AES consist of:
- maintaining an EMS consistent with international standards; and
- outlining and implementing strategic action plans for a range of prescribed environmental elements for the airport within designated timeframes.
BAC’s Environmental Management System

The Airport (Environment Protection) Regulations 1997 require BAC to address in its AES, policies and targets for the development and adoption of a comprehensive EMS for the airport that maintains consistency with Australian and international standards. In response to this requirement, BAC continues to implement an EMS to be consistent with AS/NZS ISO 14001.

The EMS represents a systematic approach to managing environmental issues across BAC’s business. The EMS is a management tool designed to identify all activities conducted by BAC and assess the level of environmental risk that each activity may pose, then to manage those risks, audit performance, review the approach and strive for continuous improvement. It is designed to be integrated into BAC’s overall business strategy and management systems, establishing environmental considerations as a routine aspect of all BAC’s activities.

While tenants and contractors are responsible for the environmental management of their own activities, BAC’s role is to establish a consistent system of compliance for all tenants and project contractors dependent on the level of environmental risk their activities pose. Management of these activities is addressed by the requirement for individual Environmental Management Plans (EMPs) incorporating an appropriate audit regime. Tenant obligations and development projects are discussed in separate sections in the latter part of this AES.

Environmental Monitoring

BAC conducts a broad program of environmental monitoring and inspections as one component of its environmental management. A summary of environmental monitoring or inspections follows. From time to time, each monitoring program is reviewed and altered if appropriate, to ensure efficacy of the monitoring program. This is done in consultation with the AEO.

<table>
<thead>
<tr>
<th>Monitoring program</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Surface water monitoring (physical, chemical and biological indicators)</td>
<td>Monthly</td>
</tr>
<tr>
<td>Groundwater monitoring</td>
<td>Twice yearly</td>
</tr>
<tr>
<td>• USTs - fuels/oils</td>
<td></td>
</tr>
<tr>
<td>• Contaminated Sites – heavy metals or dependent upon contaminant</td>
<td></td>
</tr>
<tr>
<td>Tenants (A and B level)</td>
<td>Annual</td>
</tr>
<tr>
<td>Airstside activities and operations</td>
<td>Monthly</td>
</tr>
<tr>
<td>Landside activities and operations</td>
<td>Monthly</td>
</tr>
<tr>
<td>Construction Sites</td>
<td>Monthly and/or as required</td>
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</table>

Stakeholder Engagement

BAC has adopted a pro-active approach to community and stakeholder engagement with regard to the AES process as well as facilitating ongoing discussion of a range of environmental issues. It has initiated and supported a range of communication mechanisms to ensure that relevant community and stakeholder interests are kept informed of environmental issues at the airport. For example BAC facilitates discussion of environmental issues on a quarterly basis through the Brisbane Airport Tenants Environment Committee (BATEC) and the Brisbane Airport Community Forum (BACF) with its tenants and industry, government and the community respectively.

BAC is involved in and committed to ongoing communication and consultative processes regarding relevant environmental issues with State and local agencies. BAC is also an active participant on numerous industry and professional associations ensuring currency on industry issues and trends. BAC will continue to review and improve its current program of membership, consultation and participation.

Other Airport Users

Airport users, including tenants, their subtenants, contractors and subcontractors, referred to in the Airports Act 1996 as sub-lessees, licensees and collectively as operators of undertakings, have similar obligations to those of BAC. Requirements placed upon airport users are also requirements placed upon BAC as an occupier of land within the airport site.

The Airports Act makes no distinction between the activities of tenants and BAC. Airport users are required to:

- undertake all relevant actions allocated to tenants in the AES;
- take all reasonable and practicable steps to ensure the AES is complied with;
- ensure any subtenants, contractors or subcontractors undertake works in accordance with the AES; and
- establish environmental monitoring systems applicable to their operations and periodically report results to BAC.
4 ACTION PLANS
This section describes the structure, format and intent of the AES’s action plans. Each action plan addresses an individual environmental management element as identified in the Airport Legislation. In addition, action plans addressing tenant obligations and development projects have been included. Activities associated with these areas have the potential to include the full range of environmental management elements and have been consolidated into individual sections as a concise outline of AES obligations for tenants and contractors.

Each action plan will be addressed as follows:

- overall objective;
- background;
- recent achievements;
- five-year action plans; and
- links to other action plans.

**Overall Objective**

An overarching objective has been developed for each of the environmental management elements. These objectives are intended to have an overall timeframe of five years. Performance against these objectives will be measured by BAC and reported to DITRDLG by means of the Annual Environment Report.

**Background**

The background section provides general information, on each of the specific management elements, including where appropriate:

- definition;
- relevant obligations and/or guidelines;
- relevant sources; or
- current management practices (which may include monitoring programs, studies or other reviews and initiatives).

**Recent Achievements**

This section outlines those actions undertaken by BAC and other airport users in meeting commitments of the 2004 AES. Actions are outlined according to each of the specific management elements.

**Five Year Action Plan**

A five-year action plan has been established for each management element. The action plans identify proposed environmental management actions over the next five years and include (for each management element as appropriate):

- proposed studies, reviews and monitoring; and
- proposed measures for preventing, controlling or reducing environmental impact.

Action items, identified in the action plans for each management element, have been allocated either a ‘short-term’, ‘long-term’ or ‘ongoing’ timeframe for the undertaking. It is BAC’s aim to complete actions of short-term priority within the first two years of this AES period, i.e. 2009 - 2011. Long-term actions are expected to be completed 2011 - 2013. Overall, BAC will maintain its commitment to continually improve its environmental performance by establishing and implementing additional environmental objectives, targets and action plans, as necessary, through its EMS.

All studies and monitoring will be designed and undertaken by persons with qualifications and experience relevant to the subject of the particular study or monitoring being conducted. Qualifications and experience will also be consistent with legislated requirements where these exist.

Any recommendations from studies will be communicated through Annual Environment Reports to the DITRDLG and AEO through the monthly consultative meetings. Similarly, progress on the implementation of those recommendations will also be conveyed via the above reporting mechanisms.

Studies and monitoring will be conducted in accordance with relevant Australian Standards and applicable legislated requirements. Where standards and legislation are not identified, the professional judgement of appropriately qualified and experienced persons will form the basis of testing, measuring and sampling programs.

**Specific Environmental Management Elements**

The environmental management elements addressed in the AES include:

- energy management;
- air quality and emissions;
- waste management;
- water management;
- soil management;
- biodiversity;
- noise;
- heritage;
- development projects; and
- tenant and other contractor obligations.

**Links to other Action Plans**

Each environmental element identified in the AES has been addressed in individual sections; however, there are many environmental elements which are complimentary to others. The commencement of each action plan lists other relevant actions plans as a reference.
ACTION PLAN
Energy Management

Overall Objective
Seek to identify and implement sustainable management methods for the planning, supply and efficient use of energy at Brisbane Airport for those activities which BAC can influence.

Links to other Action Plans
Air Quality and Emissions – Page 20
Development Projects – Page 42
Background

BAC plans for, designs, constructs and maintains the electrical reticulation network on Brisbane Airport. A consequence of Brisbane Airport operating 24 hours a day is that there is a constant demand for energy. In order to achieve effective management of energy, peak demands and associated effects of seasonality (predominantly related to heating and cooling demands), flight schedules, passengers and property development are taken into account as each influence the energy consumption on Brisbane Airport.

The forecast growth detailed in the 2009 Master Plan for Brisbane Airport shows that the energy demand is set to increase. Cognisant of the links between energy consumption and the generation of greenhouse gases, BAC’s management approach is based on the philosophy of improving efficiency of use in the first instance then substitution with alternate energy supplies where appropriate.

There are currently four major energy sources utilised by BAC, tenants and other operators on Brisbane Airport. These energy sources comprise the following:

- electrical reticulation;
- standby diesel generation sets;
- unleaded or diesel fuel for fleet vehicles; and
- individual gas tanks at various locations.

Relevant Commonwealth Obligations

- Airports (Environment Protection) Regulations 1997, Sect. 4.01, 4.03, 4.04, 6.02, 6.03, 6.04, 6.05, 6.06; and

Current Management Practices

Electricity consumed at Brisbane Airport is metered by BAC and on-charged to respective operators or end users of that electricity.

Recent Achievements

1) Commencement of an energy strategy - Detailed energy analysis of energy consumption data to inform when and in what precincts have more energy demands than others.

2) Smart metering installation - BAC planned, designed and commenced implementation of smart metering in order to support future management of energy efficiency and reporting. One of the program’s prime objectives is to enable tenants to access their own consumption data to inform their own organisation’s decision making process.

3) Completion of energy audits on selected buildings on airport - In 2006, BAC commissioned an energy audit of the Direct Factory Outlet building on Brisbane Airport. Major recommendations of the audit included retrofitting electrical fittings, improvements to ventilation controls and improved lighting controls. Implementation of these recommendations has improved energy efficiency in the building with savings of 355 MWhr per year, a reduction of more than 15 percent in energy consumption. Furthermore, an additional energy audit was completed on the Cellnet building. Recommendations included improvements to lighting and HVAC controls and outlined an overall reduction in energy consumption of 170 MWhr per year, which leads to over 20 percent reduction in energy usage.

4) Energy efficient design in International Terminal Building Expansion - The expansion of the International Terminal Building provided an opportunity to make further gains in energy efficiency above what was included when the building was initially constructed. The expanded design saw the inclusion of a centralised energy plant, use of natural lighting and efficient lighting fixtures.

5) Emissions Inventory - An emissions inventory was reviewed as part of the Greenhouse Challenge Plus Program which identified BAC’s contributions to air emissions from fossil fuel use.

Five-Year Action Plan

Short-Term Actions

- completion of an energy efficiency management strategy for Brisbane Airport aiming to maximise energy efficiencies by 2009/10.

Long-Term Actions

- investigate feasibility of alternate energy supplies which are reflective of economic, operational, environmental and social elements of BAC’s sustainability strategy after the management strategy has been completed in 2009/10.

Ongoing Actions

- maintain the emissions inventory through commitments with the Greenhouse Challenge Plus Program;
- monitor energy and emissions levels in line with reporting thresholds associated with the NGER Act;
- continue to review energy consumption data in order to identify, consider and investigate concepts and technologies which will promote energy efficiency; and
- incorporate feasible energy efficiencies in existing infrastructure and developments on airport.
Overall Objectives

Seek to identify opportunities to reduce harmful emissions from sources that BAC has the potential to influence.

Monitor and reduce where appropriate the greenhouse gases generated as a result of activities that BAC undertakes.

Links to other Action Plans

Energy Management – Page 18
Development Projects – Page 42
Action Plan
Air Quality and Emissions

Background

Brisbane Airport is situated next to some of Brisbane’s major industrial precincts which include oil refineries, chemical manufacturers and the Port of Brisbane, as well as road corridors such as the Gateway Arterial.

Given that these industrial facilities and road corridors are in close proximity to the airport and discharge various pollutants into Brisbane’s airshed, the air quality at Brisbane Airport would be influenced by these adjacent industries and activities as well as to emission sources located at Brisbane Airport.

Emissions of greenhouse gases are of international concern and given the influences these have on global climatic variation, the need to manage and implement effective controls are of paramount importance.

Electricity production and its use in addition to other fuels are critical processes where significant amounts of greenhouse emissions are generated (up to 80 percent of BAC’s emissions are caused by energy consumption).

It is those activities where opportunities exist to influence the reduction in greenhouse gas emissions through improved efficiency or substitution with alternative energy forms.

Greenhouse gases consist of the six gases that have been attributed to the greenhouse effect and include:

- carbon dioxide;
- methane;
- nitrous oxide;
- sulphur hexafluoride;
- perfluorocarbons; and
- hydrofluorocarbons.

Besides energy usage, there is a range of activities that generate potentially harmful emissions and/or generate greenhouse gas emissions at Brisbane Airport. These include:

- auxiliary power units and ground power units;
- ground-based aircraft movement, refuelling and defuelling;
- fuel storage tanks;
- plant, equipment and vehicles;
- aircraft painting and cleaning;
- fire training exercises;
- mechanical and maintenance workshops;
- industrial and commercial processes;
- potential use of Ozone Depleting Substances (ODSs);
- electricity generating equipment; and
- dusts generated from construction related activities.

Relevant Commonwealth Obligations

- Airports (Environment Protection) Regulations 1997 Sect. 4.01, 4.03, 4.04, 6.02, 6.03, 6.04, 6.05, 6.06, Schedule 1;
- Ozone Protection Act 1989;
- National Greenhouse and Energy Reporting Act 2007 (NGER Act); and
- National Environmental Protection Measure (NEPM) for Ambient Air Quality.

The Airport (Environment Protection) Regulations 1997 and therefore the action plans contained in this AES, do not apply to air pollution generated by an aircraft. This issue is considered under alternate Commonwealth legislation, namely the Air Navigation (Aircraft Engine Emissions) Regulations.

The NGER Act provides a reporting framework for various Australian corporations to report to the Commonwealth Government the greenhouse and energy emissions attributable to the organisation’s activities over which it has operational control.

In addition to this legislation, the Federal Government is developing a Carbon Pollution Reduction Scheme (CPRS) designed to limit pollution caused by carbon and allow for continued monitoring of amounts of carbon released into the atmosphere by Australian corporations.

Compliance with the NGER Act along side implementation of the CPRS is intended to provide long-term economic certainty for Australia in a lower carbon economy.
**Current Management Practices**

**Emissions**

BAC monitors the emission of greenhouse gases from its operations principally through the Commonwealth Government Greenhouse Challenge Plus Program.

**Air Quality**

SEQ’s airshed is monitored by the Queensland Environmental Protection Agency (EPA) for a number of air quality indicators. There are several monitoring locations across SEQ and one of the monitoring sites lies adjacent to Brisbane Airport in the local Brisbane suburb of Pinkenba.

Air quality indicators monitored at the site include ozone, nitrogen oxides, sulphur dioxide, visibility-reducing particulate matter and PM10.

BAC accesses monthly monitoring results from the EPA and reviews these with respect to airport operations. Results from this site adjacent to the airport show that over the previous five years, there have been no breaches of air quality regulatory requirements as stated in the Airport Regulations.

**Recent Achievements**

1) **Investigation into emissions of aircraft to gain understanding of contributions during ground running operations.**

   In partnership with Queensland University of Technology, a research study was conducted on determining the emissions generated during aircraft ground running operations.

   The research team developed a set of empirical equations which can be used to estimate the emissions from a range of aircraft types during ground running operations.

2) **Reporting to the National Pollutant Inventory.**

   BAC has submitted reports to the National Pollutant Inventory for its activities undertaken since 2006/07. Reporting thresholds in these reporting years were triggered based on the vehicle usage and associated consumption of unleaded fuel.

3) **Continued reporting to the Commonwealth Greenhouse Challenge Plus Program.**

   BAC continued to report in accordance with the Commonwealth’s Greenhouse Challenge Plus throughout the term of the 2004 AES. Furthermore, the reporting which BAC submitted was independently audited for accuracy and completeness in 2006, to which BAC received positive response from this process.

4) **Maintenance of a list ODS used on Brisbane Airport.**

   During the term of the 2004 AES, BAC audited its operations and found that no ODSs were used. BAC continues to operate without the use of ODS and all use was discontinued on airport when the use of methyl bromide was discontinued by Australian Quarantine and Inspection Service (AQIS).

**Five-Year Action Plan**

**Short-Term Actions**

- from 2009 implement a management framework to enable BAC to report to the Commonwealth Government via the NGER Act mechanisms if reporting thresholds are triggered.

**Long-Term Actions**

- investigate impact of airport road corridors on the airshed of greater Brisbane including comparisons between peak and off peak periods and months in 2009/10; and

- mitigate emissions from BAC’s operations in line with BAC’s Corporate Sustainability vision, by way of improved energy management based on implementation of the energy management strategy.

**Ongoing Actions**

- continue to review air quality monitoring data collected from the EPA Pinkenba monitoring site;

- maintain list of certified ODS in use on Brisbane Airport; and

- review National Pollutant Inventory calculations for Brisbane Airport and report to the National Pollutant Inventory as required.
ACTION PLAN
Waste Management

Overall Objective
Maximise waste efficiencies, as far as possible for the management of hazardous and non-hazardous waste generated from operations that BAC influences.

Links to other Action Plans
Energy Management – Page 18
Air Quality and Emissions – Page 20
Soil Management – Page 30
Development Projects – Page 42
Tenant and Contractor Obligations – Page 44
Action Plan
Waste Management

Background
Sustainable management of waste includes the consideration of the following issues:

- waste minimisation;
- segregation of waste;
- storage of waste; and
- monitoring and reporting concerning waste.

Wastes, may be defined as refuse in any form, whether having value or not, discarded or disused plant or equipment and industrial by-product. Waste may be a gas, liquid, solid, or energy, or a combination of any of these. Special classes of waste, defined as regulated wastes in Schedule 7 of the Environment Protection Regulations 1998, have also been considered in the AES. Hazardous waste is a waste which contains a hazardous substance. The Environmental Protection Act 1994 defines a hazardous substance as being a contaminant that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause serious or material environmental harm due to:

- its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity or flammability; or
- its physical, chemical or infectious characteristics.

Hazardous wastes generated by airport operations can include:

- waste oils and glycol from vehicle workshop;
- waste paint products;
- waste sludge collected from interceptor devices;
- fats and oils from catering operations; and
- offsite removal of contaminated materials.

Quarantine waste is defined as waste collected from incoming overseas aircraft and materials confiscated as part of the AQIS operations.

Waste management is not only an issue requiring management for day to day operations however it must also be addressed in development activities. Strategies which can be employed to ensure the waste minimisation occurs on construction sites includes the utilisation of standard sizes to minimise material wastage and to implement segregation then reuse and recycling of construction materials within the site so as to minimise the amount of construction material placed in landfill.

Recent achievements

1) Environmental Inspections of Tenant Refuse Collection Areas - Waste collection areas are routinely inspected during walk-through environmental inspections of high environmental risk tenants by BAC. This ongoing program of inspections and consultation provides opportunities for the better management of waste storage, collection and recycling.

2) Recycling and Waste Diversion - The establishment of a recycling and waste diversion program in ITB and DTB common user areas commenced. Cardboard recycling is currently taking place within the ITB and DTB common user areas, whilst a program of plastic recycling (low density polyethylene - LDPE) has been undertaken within the ITB.

3) Waste Contracts - A review of BAC waste contractors was undertaken which resulted in a new contractor being selected based on their environmental credentials and capacity to support BAC’s key waste management objectives and strategies. In particular, the contractor’s ability to further increase recycling by delivering BAC’s waste to a disposal facility that extracts methane gas for electricity generation supports these objectives and strategies.

Five Year Action Plan

Short-Term Actions

- in 2009/10 develop and implement a trade waste quality monitoring program; and
- in 2010/11 further improve the waste separation for the recycling of resources across BAC operations.

Long-Term Actions

- from 2012 onwards establish a forecasting program to enable informed decisions in relation to future waste management; and
- identify areas within which BAC can make meaningful contributions to encouraging the management of waste across the airport.

Ongoing Actions

- continue to ensure all spills are managed and reported in line with BACs SOP for spill management;
- continue to promote awareness of waste management initiatives appropriate to construction activities and day to day operations; and
- utilise blended and recycled aggregates from construction and demolition material where practical in commercial developments.
Overall Objectives

Proactively manage water in every facet of BAC activities including service delivery, development and using water ‘fit for purpose’.

Minimise the impact of Brisbane Airport operations on surface water and ground water quality.

Links to other Action Plans

Waste Management – Page 24
Soil Management – Page 30
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Background

BAC recognises water as a resource with a variety of types which may be utilised within different operations. Prior to 2004, readily available reticulated potable water was the primary source of water utilised within BAC operations.

Since then, different water types have been progressively introduced to Brisbane Airport based on the concept of ‘use of water fit for purpose’. BAC currently manages several sources of water including:

- stormwater collected in freshwater lakes;
- rainwater harvested from roof space;
- Class A recycled water; and
- brackish water.

An influential factor on water quality at Brisbane Airport is its location between the Boggy Creek/Brisbane River and Kedron Brook sub-catchments which discharge into Moreton Bay. Because these waterways are part of the Lower Brisbane River Catchment, the potential for pollutants to enter airport drainage channels through tidal processes is high.

The airport is also surrounded by a large proportion of Brisbane’s industrial and commercial enterprises, including the Port of Brisbane, oil refineries and Luggage Point Wastewater Treatment Plant, the primary wastewater treatment plant for Brisbane City.

Definition

Water Management relates to the development of frameworks and practices for the planning, development, distribution and optimal use of water fit for purpose. It may include the management of water recycling, capture, storage and treatment, in addition to the monitoring and benchmarking of water consumption and efficiency.

Water, as defined within the Airport (Environment Protection) Regulations 1997, means marine, estuarine or fresh waters, and includes a body of water; a natural watercourse; a swamp or wetland; groundwater and water in a channel, drain, pipe or other artificial holding facility.

Water pollution under the Airport (Environment Protection) Regulations 1997 occurs when waters contain a substance or organism:

- that causes, or is reasonably likely to cause, the physical, chemical or biological condition of the water to be adversely affected; or
- that causes, or is reasonably likely to cause, an adverse effect on the beneficial use of the water.

Relevant Commonwealth Obligations

- Airports (Environment Protection) Regulations 1997 Sect. 4.01, 4.03, 4.04, 6.02, 6.03, 6.04, 6.05, 6.06.

Relevant State Obligations

- Water Act 2000;
- Water Supply (Safety and Reliability) Act 2008; and

Current Management Practices

BAC has prepared a Water Efficiency Management Plan (WEMP) which forms the basis for the ongoing review of potable water consumption at Brisbane Airport. The WEMP details BAC’s intentions for the sustainable use of water through recycling, reuse and the identification of improved design efficiencies.

Complimenting BAC’s WEMP is the Landscape Master Plan which was developed to reduce irrigation demands associated with landscaping and to provide a framework for sustainable landscaping across Brisbane Airport. The Landscape Master Plan outlines the use of native, drought and salt tolerant plant species while minimising plant species that pose hazards to airport operations.

Surface water quality on the site is influenced by a variety of factors including:

- water quality in Moreton Bay, Boggy Creek and Kedron Brook entering the site via tidal drains;
- water drainage from neighbouring residential catchment areas under the Gateway Motorway from Eagle Farm and to a lesser extent Meeandah and Pinkenba; and
- rainfall runoff directly from the airport.

BAC is therefore only able to manage stormwater runoff directly attributable to the site. Considering its location and the difficulty in clearly demonstrating the contribution airport activities may be having on water quality, BAC has established a Water Quality Monitoring Program (WQMP) in order to examine the general character of the waters entering and leaving the site.

The WQMP identifies several locations across the airport for water quality monitoring on a scheduled basis. Water is analysed for various qualities including physical, chemical (nutrients, organics and metals) and biological parameters.
Surface water monitoring undertaken in line with the EPA’s Water Quality Sampling Manual, have provided results which indicate that levels are generally within acceptable limits (compared to Airports (Environment Protection) Regulations 1997, Schedule 2) with the exception of occasional marginally elevated results for some heavy metal levels and consistently elevated levels for nutrients.

These results may be attributable to the highly urbanised environment (within the Brisbane Airport catchment) surrounding Brisbane Airport.

Much of the groundwater on airport is tidally influenced given the airport’s proximity to Moreton Bay. In addition, in situ acid sulfate soils can also influence the quality of groundwater.

Groundwater monitoring is conducted near underground storage tanks (USTs) and selected contaminated sites. Testing of groundwater is undertaken in consideration of the perceived risk contaminant (e.g. USTs are tested for petroleum based contaminants (Total Petroleum Hydrocarbons (TPH) and Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) and metals).

Additional groundwater monitoring is conducted across a range of construction sites as a means of monitoring the effectiveness of controls for the treatment of acid sulfate soils when those soils are disturbed.

Groundwater testing provides BAC with data which is used to assist decision making for improved water quality management, particularly during development activities.

All surface and groundwater monitoring results are reviewed as they are received to ensure effective controls and standard operating procedures are being implemented. If the monitoring shows variability in results, targeted investigations are undertaken to determine what procedures require improvement.

Given the importance of water cycle issues in SEQ, BAC has commenced development of a Stormwater Management Strategy to ensure reasonable and practicable measures are implemented to improve stormwater quality on an ongoing basis.

The purpose of this strategy is to guide requirements on a commercial precinct by precinct basis. This strategy calls on the inclusion of WSUD measures in new developments to achieve pollutant load reductions in runoff as a means to improve a range of water quality indicators including sediments, gross pollutants, nutrients and hydrocarbons.

During its development, water quality monitoring baseline data, current State programmes such as Healthy Waterways Guidelines in addition to Airport Regulations are being considered and adopted in this strategy.

Recent Achievements

Potable Water Management

1) Water Management Study Report for Brisbane Airport Corporation

This report was the outcome of a cooperative BAC and Brisbane City Council study completed in 2004.

The report highlighted twelve areas where Brisbane Airport could reduce potable water use, and provided the foundation for BAC’s consequent achievements in sustainable water management.

2) Recycled Water Management Plan

BAC has established a Recycled Water Management Plan to govern the use of recycled and other non potable water sources. This plan includes issues relating to monitoring, auditing, quality assurance, corrective actions, training and the operation of a recycled water network.

3) Recycled Water Infrastructure

BAC commenced the installation of a recycled water reticulation network. This network enables all landscape irrigation on airport to utilise recycled water. New developments are now required to incorporate recycled water infrastructure.

4) Recycled Water

BAC has entered into an agreement for the purchase and delivery of Class A recycled water from Brisbane’s Gibson Island waste water treatment plant.

5) Water Harvesting

A number of water harvesting initiatives have been undertaken, including the installation of rain water tanks at a number of buildings on airport.

In addition, BAC has established two open storage fresh water lakes located in the Airport Village Precinct for stormwater runoff collection.

6) Water Efficient Fittings and Fixtures

Based on the outcomes of a series of water audits BAC commenced a retrofitting program of water efficient devices across buildings on airport.

7) SCADA and Leak Detection

The Supervisory Control and Data Acquisition (SCADA) network has the ability to detect and notify BAC Operations of abnormal load events. A leak detection program has been undertaken for the 10 highest water users on site and resulted in significant water savings.
8) **Water Working Groups**
BAC has established a Water Steering Committee to oversee the administration and application of its water management objectives.

9) **Water Efficiency Management Plan (WEMP)**
The implementation of the WEMP fulfils State government requirements for water management in SEQ. BAC reports quarterly and will continue to refine the WEMP and comply with any legislation as required.

10) **Reduced Potable Water Usage**
BAC has achieved a remarkable 75 percent reduction in potable water consumption (to 2008) since commencement and implementation of water efficiency and sustainability projects in 2004.

11) **International Water Association Award**
In 2008 BAC was awarded the International Water Association’s (IWA) award for Innovation for the Practical Realisation of Sustainable Urban Water Management.

The IWA commented when the award was announced that this achievement was especially noteworthy as it was an exemplar model for business and cities worldwide, in terms of strategy, integrated sustainability, communication and execution.

**Water Quality**

1) **Undertake a targeted first flush sampling program**
A research project assessed stormwater quality from airport aprons. The reported findings of the research project have informed BAC’s Storm Water Quality Management Plan.

2) **Storm Water Quality Management Strategy (SWQMS)**
BAC has commenced the development of a SWQMS to outline management options for developments across the airport.

3) **Maintenance of the Water Quality Monitoring Program**
BAC has continued to monitor for water quality for various physical, chemical and biological parameters.

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**Five-Year Action Plan**

**Short-Term Actions**

- conversion of cooling towers at the Terminals to use non potable water in 2009; and
- in 2009 undertake a comprehensive review and analysis of the existing data from the water quality monitoring program to ensure data collection remains relevant to informing decision making processes. The recommendations will most likely include first flush investigations and specific activities across the airport.

**Long-Term Actions**

- in 2012/13 review the SWQMS for continual improvement in line with relevant industry guidelines and standards; and
- in 2012-14 examine opportunities for comparison projects for the review of Brisbane Airport water quality datasets with those of SEQ.

**Ongoing Actions**

- BAC will continue implementation of a Smart Metering Program for all developments;
- continue to identify and implement reductions in potable water consumption at Brisbane Airport where practicable;
- continue to report to the Queensland Water Commission on the implementation progress of BAC’s WEMP;
- continue to appropriately manage all sources of water utilised at Brisbane Airport;
- investigate large scale rain water harvesting opportunities across the airport;
- continue the awareness program for the promotion of BAC water management and water quality objectives within the airport community;
- continue the collection and quality testing of surface water and groundwater in line with BAC’s Water Quality Monitoring Program. The monitoring program will comprise a combination of monthly surface water sampling and sampling of ground water points twice yearly;
- continue to identify and support research opportunities to foster the innovative management of water management and water quality where feasible; and
- continue to consult with the AEO and representatives of DITRDLG regarding the results of the WQMP and the effectiveness of the Stormwater Management Strategy.
Overall Objectives

Pursue opportunities to ensure soil quality at Brisbane Airport is maintained.

Minimise the potential for soil contamination to occur at Brisbane Airport.

Links to other Action Plans

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Water Management – Page 26
Development Projects – Page 42
Tenant and Contractor Obligations – Page 44
Background

The quality and management of soil are critical components in any environmental system. Soil and earth substrate are important factors in the construction and design of the urban environment.

BAC recognises the benefits of responsible soil management, which may involve comprehensive planning, monitoring and management for soil degradation, contamination or loss. Consequently, there are two key issues that relate to soil management on Brisbane Airport – potential acid sulfate soils and contaminated sites management.

Sources of soil pollution on the airport site are varied. Most sources relate to activities such as waste disposal, rubbish dumping and the burying of material containing asbestos which occurred prior to the development of the airport in its current configuration.

A small number of sites were contaminated during the airport’s construction, resulting from activities such as importation of contaminated fill from Moreton Bay. In more recent times, soil pollution is mainly attributed to fuel and oil leaks or spills. BAC maintains a Contaminated Sites Register (CSR) as an operational document for the management of all suspected and confirmed contaminated sites on airport.

The airport is situated on a coastal plain, mostly less than 5m AHD (Australian Height Datum), potential acid sulfate soil (PASS) conditions commonly exist across the airport site.

Actual acid sulfate soil (AASS) occurs when sulfide in PASS is exposed to oxygen in the atmosphere. Consequently, it is imperative that PASS/AASS conditions are identified at the preliminary stages of a development and are managed accordingly.

Soil pollution is defined in the Airports (Environment Protection) Regulations 1997 as being a substance which is likely to cause an adverse effect on the chemical or biological condition of soil or groundwater.

Pollution of soil is also considered to have occurred when contamination by a substance is reasonably likely to have adverse effect on a present or proposed land uses including effects relating to odour, aesthetics, supporting human occupation and/or flora and fauna.

Potential sources of soil pollution include the importation of contaminated fill material or fuel, oil and chemical spill occurring during operations.

Relevant Commonwealth Obligations

- Airports (Environment Protection) Regulations 1997 Sect. 4.01, 4.03, 4.04, 6.14, 6.15, Schedule 3;
- ANZECC/NHMRC Guidelines; and
- NEPM for Assessment of Site Contamination.

Relevant State Obligations

For works which may potentially involve management of PASS/AASS the following may be used as a guide for investigation and management:

- Queensland Acid Sulfate Soil Technical Manual 2004 and associated guidelines; and
- State Planning Policy 2/02, Planning and Managing Development Involving AASS, 2002.

In certain circumstances, BAC may consider alternate methodologies for the management and treatment of PASS/AASS conditions following consultation with relevant bodies in line with appropriate industry standards.

Current Management Practices

BAC manages contaminated sites on a risk management basis, consistent with the NEPM for Assessment of Contaminated Sites and BAC’s own CSR.

BAC’s CSR is based on a three tier system similar to that of the State EPA and in line with the NEPM for site contamination. The three tier system identifies existing contaminated sites as either a low, moderate or high risk site. The risk assessment considers both environment and human health impacts.

The reviews resulted in five existing sites being determined as high risk requiring either validation (BAC Ref Site 2B), Remediation and management plans (BAC Ref Sites 5 and 12B) or further investigations (BAC Ref Sites 33 and 43).

BAC’s intent is to complete recommendations for all high risk sites by 2010/11. Where required, sites will continue to be monitored via routine groundwater sampling and analysis on a twice yearly basis.

The management of PASS/AASS conditions is identified and considered through the project approval process. Each development, through the associated Construction EMP, details how PASS/AASS will be managed and monitored during the construction phase. This is a standard operating procedure for developments that have a bulk earthworks component.
SOIL MANAGEMENT CONT

Achievements to Date

1) Contaminated Site Remediation
Contaminated site 2A (Tannery Waste) was remediated during the 2007 / 2008 reporting period as part of the Gateway Motorway Upgrade Project.

When variations occurred in monitoring results at Site 6 (Gasworks Waste Contaminated Fill) BAC completed remediation to mitigate any potential environmental and human health risk.

2) Review of Contaminated Sites Register
A comprehensive review of BAC’s Contaminated Site Register (CSR) has been completed.

The review considered all sites and developed a three tier system providing a framework to ensure the appropriate and ongoing management of these sites.

3) PASS/AASS Investigations
All projects incorporating a bulk earthwork component are required to conduct a PASS investigation and to have a detailed PASS/AASS management plan.

BAC periodically reviews the implementation of these plans and associated validation sampling.

4) Construction and Demolition Material Recycling Plant
This facility commenced preliminary operations in 2008. The facility will blend sources of construction and demolition material to achieve suitable fill grades for use in commercial airport developments, reducing BAC’s reliance upon natural aggregate resources.

Five-Year Action Plan

Short-Term Actions

- in 2009/10 complete remediation of an area of contaminated land containing zinc oxide (BAC Ref Site 5), which is adjacent to the main aviation response fire station. Remediation activities will most likely include excavation, validation sampling and backfilling with clean fill material; and
- complete action items in CSR for high risk sites by 2010/11 in consultation with AEO.

Long-Term Actions

- BAC will review the CSR to appropriate industry long-term management of sites in line with industry standards by 2013/14.

Ongoing Actions

- continue to monitor and remediate contaminated sites, where appropriate, in accordance with the CSR, and in consultation with the AEO;
- continue to require all new development projects which incorporate a bulk earthwork component to address PASS/AASS issues and propose appropriate investigation and management strategies in accordance with relevant obligations and guidelines; and
- continue to undertake integrity testing to ensure underground storage tanks managed by BAC are in good order, without seepage issues.
Biodiversity

Overall Objectives

Maintain and enhance key elements of the biodiversity values at Brisbane Airport where possible.

Minimise habitat for species which present risks to aircraft safety.
In the 1999 AES, a desktop review of available information on the flora, fauna and ecology of the Brisbane Airport site and adjacent areas was completed. A preliminary indication of the distribution of habitat communities (refer Fig 4.1, AES 1999) and a listing of significant species potentially associated with the site (refer Table 4.2, AES 1999) were provided. In order to establish more rigorously the environmental attributes of the site, BAC committed to acquiring detailed and accurate knowledge of current flora and fauna communities of the airport. In accordance with the 1999 AES commitments, an extensive mapping and condition assessment of the vegetative communities on airport was completed in 2002-03 and a comprehensive study of the faunal (both terrestrial and aquatic) communities was completed in 2004.

During preparation of the 1999 AES, three Environmentally Significant Areas (ESA) were identified and established in the inaugural AES. At the time, a conservation value assessment which considered International, Commonwealth, and State criteria was completed prior to determining the location of the ESAs.

The findings of the “Brisbane Airport Vegetation and Habitat Assessment” (ERM, 2002) identified the following vegetation communities:

- casuarina plantation;
- open grasslands;
- mangroves;
- saltmarsh;
- freshwater wetlands and sedge communities; and
- coastal dunes and foreshores.

The study concluded conservation value of the vegetation on the airport is, as a whole, low, with man made habitats (open grasslands, casuarina plantation and landscaped areas) having been identified as areas of the lowest conservation value. There were, however, areas within the site which are of a higher value than others such as the mangroves and other marine plant communities.

The findings of the “Brisbane Airport Fauna Study” (Lambert and Rehbein, February 2004 identified a variety of terrestrial vertebrate species of bird, mammal, reptile and amphibian within or near the Brisbane Airport site some of which ascribed some level of conservation significance at Commonwealth, State or local levels (Refer Table 12.2, AES 2004). In addition, the aquatic surveys identified many species of finfish and benthic invertebrates within channels and associated wetlands (mangrove and saltmarsh areas) of the airport precinct. Among the species identified were fishes of local and regional importance to recreational and commercial fisheries.

As a result of those flora and fauna surveys, the 2004 AES outlined the commitment for BAC to develop a Biodiversity Management Strategy (BMS) with the objective of balancing the management of biodiversity values with airport development and operational constraints.

A recommendation from the Fauna Study was the formulation of a biodiversity zone along Kedron Brook Floodway to maintain sites of high biodiversity conservation value whilst considering the ongoing master planning for airport developments such as the New Parallel Runway and other commercial development precincts. Key biodiversity elements identified to be maintained and enhanced included:

- mangrove and saltmarsh communities with their associated fauna assemblages;
- phragmites wetland/unmanaged grasslands and their associated fauna assemblages, including significant species such as Lewin’s Rail and Eastern Grass Owl;
- intertidal sandflats which provide feeding grounds for wader birds including migratory birds listed in international agreements and other birds such as the endangered Little Tern. These habitats also provide fisheries values;
- casuarina plantations, which contain minimal biodiversity significance, but do not provide habitat for high risk species in terms of aircraft strike. These plantations are recommended to be used as a landscaping strategy; and
- a White-bellied sea-eagle nest.

In order to conserve these key features BAC allocated approximately 285 ha of its landmass (equating to roughly 10% of the airport site) as a Biodiversity Zone. This zone stretches along Kedron Brook Floodway in the west to the Bramble Bay foreshore in the north. This area also includes the three previously designated ESAs and the formation of a fourth ESA incorporating the core area of Lewin’s rail habitat. The purpose of these ESAs is to ensure the all biodiversity values as outlined above are contained in this zone. Figure 6 depicts the biodiversity zone on airport. BAC has completed extensive surveys of each of the ESAs to determine the extent of each area and this survey work has is reflected in Figure 6.

Prior to establishing the Lewins Rail habitat as an ESA, BAC completed extensive consultation with the then Commonwealth Department of Department of Environment and Water, DPI and EPA during the EIS for the NPR. More recently, BAC has established an MOU with Brisbane City Council (BCC) regarding the management of the Biodiversity Zone in recognition that western boundary of the zone borders BCC lands.
FIGURE 6 BAC’S BIODIVERSITY ZONE
Relevant Commonwealth Obligations

- Airports Act 1996;
- Airports (Environment Protection) Regulations 1997;
- Environment Protection and Biodiversity Conservation Act 1999;
- CAMBA (China-Australia Migratory Bird Agreement);
- JAMBA (Japan-Australia Migratory Bird Agreement);
- ROKAMBA (Republic of Korea-Australia Migratory Bird Agreement);
- Ramsar Convention on Wetlands
- Directory of Nationally Important Wetlands in Australia;

Relevant State Obligations

- Land Protection (Pest and Stock Route Management) Act 2002;
- Land Protection (Pest and Stock Route Management) Regulation 2003;
- Nature Conservation Act 1992;
- Nature Conservation (Wildlife) Regulation 2006;
- Plant Protection Act 1989; and
- Plant Protection Regulation 2002.

Recent achievements

1) Allocation of the Biodiversity Zone - Designation of a 285 ha Biodiversity Zone incorporating the four ESAs and other key biodiversity values with firebreaks, access tracks etc. A buffer zone is also included along the main eastern boundary of the zone.

2) Designation of a new Environmentally Significant Area - This area incorporates the core habitat for Lewin’s rail. Furthermore, BAC and Brisbane City Council have developed a Memorandum of Understanding for a cooperative management framework in recognition that the Biodiversity Zone boarders Council land.

3) Lewin’s Rail Research Project - The commissioning of a research project on the ecology and habitat use of Lewin’s rail on Brisbane Airport. Once complete, the outcomes of this research will inform management decision making.

4) Establishment of a Wildlife Working Group - To identify opportunities to reduce potential impact posed by wildlife on airport operations.

5) Feral animal and weed control - Implementation of a feral animal and weed control program covering all habitat areas across the airport.

6) Red Imported Fire Ants detection - Extensive vegetation management works to facilitate the Department of Primary Industries and Fisheries (DPI&F) fire ant surveillance program.

7) Bushfire Management Plan - Developed to guide the management for suitable fire trails in the casuarina plantations on the western side of the airport.

Five-Year Action Plan

Short-Term Actions

- in 2009/10 seek to implement monitoring and restoration programs (as required) for key mangrove communities contained within the ESAs;
- in 2009/10 investigate the drainage configuration of the Lewin’s rail habitat;
- in 2009 - 11 investigate opportunities to provide a sustainable nature based recreation opportunity within the Biodiversity Zone;
- from 2009 onwards implement outcomes of the Lewin’s Rail ecology and habitat research program;
- identify an alternate nest site for the White-Bellied Sea-Eagle nest prior to the commencement of works associated with the New Parallel Runway project. The timing of this activity is subject to the commencement of runway works; and
- ensure implementation of approval conditions associated with a range of projects (such as the New Parallel Runway) are implemented. The timing of this action is dependent on the program of works for each project.

Long-Term Actions

- by 2013/14 consider opportunities for revegetation of casuarina plantations in the Biodiversity Zone as appropriate; and
- by 2014 complete a benchmarking study regarding the effectiveness of the BMS, covering both terrestrial and aquatic habitats.

Ongoing Actions

- implementation and review of SOPs for weed control, feral animal management, mosquito control and other pest species. Any changes will be completed in consultation with the AEO;
- implementation and review of the Biodiversity Management Strategy and associated action plans to ensure effective management practices are implemented; and
- ongoing implementation of DITRDLG land clearing guidelines.
Overall Objectives

Ensure airport developments are appropriately assessed for potential noise impacts during construction and operation phases.

Comply with relevant noise related legislation, standards and/or guidelines.

Links to other Action Plans

Development Projects – Page 42
Background

Airports are typically high noise environments with several activities (ground based and aeronautical related) occurring which contribute to the noise profile. Typical activities which contribute to the ground-based noise on airport can include:

- land transport sources such as rail and road traffic;
- construction and development sites;
- operation of plant and machinery;
- operation of fixed audible alarm and warning systems; and
- ground-based aircraft operations which can include:
  - operation of an auxiliary power unit of an aircraft;
  - ground-based aircraft running; and
  - test-bed running of aircraft engine removed from aircraft.

The Airport (Environment Protection) Regulations 1997 address noise generated from ground based activities that are outlined above. These regulations do not apply to noise generated by an aircraft in flight or when landing, taking-off or taxiing at an airport. Subsequently, the AES does not address noise generated by aircraft in these stages of operation. Noise associated with these operations is considered under alternate Commonwealth legislation, namely the Air Services Act 1995 and Air Navigation (Aircraft Noise) Regulations 1984.

Ground based noise is recognised as having the potential to intrude upon both commercial and sensitive receptors. The Airport (Environment Protection) Regulations 1997 defines a commercial receptor as a profit or non-profit business and sensitive receptors as all dwellings (private and commercial), educational institutions, health care facilities and places of worship. Currently, sensitive receptors located on Brisbane Airport include child care facilities and a hotel that is currently under construction. Whilst a number of commercial receptors are located on airport, noise attenuation measures have been incorporated within the design and construction of these premises.

The 2009 Master Plan and 2003 Noise Management Strategies at Brisbane Airport describe the initiatives and achievements of BAC and its industry partners in managing aircraft noise issues.

All operational aircraft noise related complaints are referred to Airservices Australia for their consideration.

Current Management Practices

Noise emissions from ground-running operations are managed according to BAC’s comprehensive Ground Running Procedures which are contained within the Airport Operations Manual. The procedures provide for a consistent approach to aircraft ground running operations and outline a system for approval based on locations, timing, duration, direction of blast and throttle settings.

Commercial developments and terminals at Brisbane Airport are supported by road and rail infrastructure. To ensure these necessary transport corridors and on airport development can coexist, noise attenuation measures are always considered in the design, construction and maintenance of new developments on airport. Noise management procedures relating to construction works are included within Construction Environmental Management Plans for the relevant construction site.

Recent Achievements

1) Review of ground running procedures - Following a review of ground running procedures changes were made to permissible locations in order to further address noise issues at Brisbane Airport.

2) Unauthorised Ground Running - No unauthorised ground running procedures were recorded during the last five years.

3) Community Engagement - A successful series of community forums and the establishment of key community partnerships were undertaken during the last five years to disseminate information and consult with communities regarding noise issues at Brisbane Airport.

Five-Year Action Plan

Short-Term Actions

- in 2009/10 undertake a comprehensive review of Brisbane Airport Corporations – 2003 Noise Management Strategies at Brisbane Airport; and
- complete investigations into background noise levels along road corridors on Brisbane Airport by 2011/12.

Ongoing Actions

- continue the engagement forums with the wider community;
- continue to implement BAC Ground Running Procedures;
- continue to monitor, record and act on noise complaints caused by ground based activities;
- continue to ensure appropriate measures for noise management are outlined in CEMPs; and
- continue to ensure suitable noise attenuation mechanisms are included in new developments as required.

Relevant Commonwealth Obligations:

- Airports (Environment Protection) Regulations 1997 Sect. 4.06, 4.07, 4.08, 4.09, Schedule 4; and
Overall Objective
Implement strategies to manage known cultural heritage sites.

Links to other Action Plans
Biodiversity – Page 34
Background

The Brisbane Airport site has been highly modified during the history of European settlement in the area and the airport’s development. Prior to European settlement, the airport site and surrounding areas were part of a large natural environment that provided a significant source of food and useful materials for Aboriginal people from around the region.

European settlement of the area began with a convict settlement near the site of the current airport control tower. The airport site was later used for farming and also military purposes during World War II.

In recent years, Brisbane Airport has maintained an interest in understanding sites or structures of cultural significance on-airport. Accordingly, a comprehensive assessment of the airport to identify indigenous and historical cultural heritage sites was conducted in preparing the Environmental Impact Statement/Major Development Plan for the New Parallel Runway.

Relevant Commonwealth Obligations

- Airports (Environment Protection) Regulations 1997, Sect. 3.03, 4.04, 4.05; and

Relevant State Obligations

- Queensland Heritage Act 1992; and
- Aboriginal Cultural Heritage Act 2003 (ACH Act).

Indigenous Cultural Heritage

There are three sites on airport land listed on the Indigenous Site Register and Database (managed by the Queensland Department of Natural Resources and Water). These sites are:

- Airport Burial (Register reference LB:C57);
- Serpentine Creek Mouth Camp (Register reference LB:N56); and
- Rafting Yards Serpentine Creek Camp (Register reference LB:N57).

The Airport Burial Site and the Serpentine Creek Mouth Camp are both located within BAC’s Biodiversity Zone which is the area that has been allocated for the conservation of existing habitats and for maintaining biodiversity values across airport (see Figure 6 for locations).

The third site, the Rafting Yards Serpentine Creek Camp, became subject to a Cultural Heritage Management Plan which was developed during the New Parallel Runway project’s Environmental Impact Statement to be consistent with the Aboriginal Cultural Heritage Act 2003. The Cultural Heritage Management Plan was jointly signed by BAC and the Jagera People, the local Indigenous group.

BAC has been advised of an additional potential indigenous site in existence on airport land adjacent to Pinkenba. Although the site (a bora ring) has not been confirmed, relevant authorities have been informed. It was recommended that no management actions are required unless the site becomes subject to development plans.

Non-Indigenous Cultural Heritage

A range of non-Indigenous land uses and events have occurred on the Brisbane Airport site since European settlement of the region. However, as a result of the airport’s development over recent decades, many of these sites were destroyed prior to airport privatisation in 1997. There are no physical items listed on the Register of the National Estate and Queensland Heritage Register situated within the current Brisbane Airport boundary.

The Kingsford-Smith Memorial (KSM) is also housed on Brisbane Airport. This building houses artefacts relating to Sir Charles Kingsford-Smith, including the plane ‘Southern Cross’ and is open for public display.

The Southern Cross Aircraft Warehousing and Display Agreement between the Australian Government and BAC outlines the warehousing, maintenance and security requirements BAC must undertake for the KSM.
Recent Achievements

1) Comprehensive review of cultural heritage values on airport
A comprehensive assessment of cultural heritage values and sites on airport and in surrounding areas was conducted as part of the Environmental Impact Statement for the New Parallel Runway project.

2) Cultural Heritage Management Plan requirements
A cultural heritage survey conducted by the local Indigenous group, the Jagera People, resulted in BAC and the Jagera People jointly signing a Cultural Heritage Management Plan under the ACH Act to cover future construction activities associated with the construction of the New Parallel Runway project. In the case of the proposed dredging site in Moreton Bay for sand to construct the new runway, site investigations were undertaken with the indigenous Minjerribah Moorgumpin Elders in Council.

A Cultural Heritage Management Plan (CHMP) was subsequently signed between BAC and the Minjerribah Moorgumpin Elders in Council to cover the future dredging in Moreton Bay.

BAC continues to require Construction Environmental Management Plans (CEMPs) to address methods for managing heritage items should any item be discovered during construction related activities.

Five-Year Action Plan

Short-Term Actions

- summarise findings of previous heritage investigations and existing standard operating requirements for development activities and Kingsford Smith Memorial into airport-wide heritage management plan by 2010/11.

Ongoing Actions

- continue to require new development projects to consider cultural heritage issues (including the development of management strategies in the event that any material or artefact is discovered during construction works) through CEMPs;
- continue to provide avenues for consultation between the airport and traditional owners; and
- continue to implement requirements of the Southern Cross Aircraft Warehousing and Display Agreement and any recommendations from independent reviews.
Overall Objectives

Ensure that new development projects consider environmentally sensitive design principles.

Minimise the short-term and cumulative potential environmental impacts associated with development projects at Brisbane Airport.

Links to other Action Plans

Tenant and Contractor Obligations – Page 44
Background

Achieving a balancing between development and the resultant environmental impacts which the development may bring can be realised through the integration of sustainable building principles into standard design, construction, operation and maintenance of a building or infrastructure. Such principles include:

- building management;
- indoor environment quality;
- energy management;
- emissions;
- transport mix for a building's occupants;
- water management;
- construction and fit out materials; and
- existing land use and ecology.

Relevant Commonwealth Obligations

- Airports Act 1996;
- Airports (Environment Protection) Regulations 1997; and
- Airports (Building Control) Regulations.

Current Management Practices

BAC has developed a range of initiatives aimed at improving the environmental management of development projects such as design and technical guidelines for developments on airport. These guidelines contain specific detail on elements of construction and environmental management for new development such as Water Sensitive Urban Design (WSUD), energy efficiency and management, materials selection and waste management.

As a component of the technical guidelines, and their obligations under the AES, it is necessary for all construction contractors to produce a CEMP which satisfies BAC requirements. Potential environmental impacts from construction typically relate to stormwater runoff, erosion and sedimentation, waste, dust and noise. BAC undertakes periodic inspections of construction work to ensure that environmental controls documented in the CEMP's are being appropriately implemented.

Environmental assessments for development projects may range from an internal assessment for a low risk project to a high level environmental impact assessment, public environment report and/or a Major Development Plan.

These more comprehensive assessments are typically completed for large scale construction projects. Consideration of the level of assessment is guided by the requirements of the Airports Act.

Another guiding document for development activities on airport is the BAC Landscape Master Plan. This strategic document ensures that all landscape and planting within a new development are native species which are both drought and salt tolerant and if requiring irrigation, selected for their suitability and tolerance to non-potable water.

Recent Achievements

1) BAC Technical Guidelines

The technical guidelines incorporate specific detail on elements of environmental management and construction for new development at Brisbane Airport.

2) Precinct based Development Control Plans

A Development Control Plan (DCP) provides specific, comprehensive guidelines for certain types of development on airport within the airport precincts. The guidelines are in addition to the airport Master Plan and Precinct Plans and are to establish design controls for the precinct. DCPs are to provide a flexible means of identifying additional development controls and standards for addressing development issues. The plans also provide for the consideration of environmental issues at both the design and construction phases.

3) Working at Brisbane Airport Internet Site

An information portal for contractors and developers wishing to undertake work on Brisbane Airport. The site outlines policies and procedures for operating on site, incorporating a range of issues OHS issues and an induction program.

Five-Year Action Plan

Ongoing Actions

- ongoing adoption of sustainable building principles;
- continue to review DCPs to ensure appropriate standards of environmental efficiency, assessment and management for all new developments; and
- continue to review industry practice seeking innovative methods for the attenuation and mitigation of potential environmental impacts for inclusion within CEMPs.
Overall Objective

Provide direction to ensure tenants and contractors manage their operations and activities in accordance with the AES.

Links to other Action Plans

Energy Management – Page 18
Waste Management – Page 24
Water Management – Page 26
Development Projects – Page 42
Background

A large number of diverse businesses and organisations choose Brisbane Airport as their preferred location to operate. These include tenants (and their subtenants), contractors (and their subcontractors), licensees and any other operators on Brisbane Airport.

To ensure that a sustainable approach to environmental management is achieved, environmental risks associated with Tenants’ operations need to be assessed and subsequent to this, operational procedures implemented to ensure those risks are appropriately managed.

The level of environmental risk assigned to each tenant is based on the environmental risks posed by the activities undertaken on that tenant’s leased site.

The activities of any sub-tenants or contractors engaged by the tenant will be considered when determining the overall risk rating for a site. As new tenants join the airport community their operation is assessed by BAC and assigned a risk rating. Tenant risk categories include:

**Level A** - high environmental risk tenants – activities which might cause material environmental harm as defined by the Airports Act; and

**Level B** - medium environmental risk tenants – activities which may cause environmental nuisance as defined by the Airports Act; and

**Level C** - low environmental risk tenants.

Tenants and contractors are to comply with environmental requirements outlined in the Airports Act and Regulations. In order to assist tenants and contractors to understand their obligations and achieve compliance with the Regulations and subsequently the AES, this section outlines their specific requirements.

**Relevant Commonwealth Obligations**

- **Airports Act 1996** Section 130; and
- **Airports (Environment Protection) Regulations 1997**, Sect. 3.02, 3.10, 3.11, 4.01, 4.02.

Under the Airport Legislation, tenants are specifically required to prevent the generation of pollution from their undertakings or where the prevention is not reasonable or practicable, minimise the generation of pollution from their undertakings.

**Tenant Requirements for Environmental Management**

**Operational Environmental Management Plan**

Tenants with an A or B rating are required to prepare an Operational Environmental Management Plan (OEMP) for their ongoing operations. OEMPs are to be generally consistent with Section 4 of AS/NZS ISO 14001 and must include at least the following:

- description of tenant’s operation;
- identification of environmental impacts of operation;
- determination of level of risk of potential/impacts;
- management of impact strategies (combined into standard operating procedures);
- details of staff training and awareness;
- details of the process to review and update the Operation EMP;
- identification of employees/positions responsible for environmental management on the site;
- management of contractor environmental risks and impacts;
- environmental performance targets; and
- details of audit/review and improvement measures.

To assist tenants, BAC has previously developed Guidelines for Operational Environmental Management Plans (OEMPs) which can be used to assist in the development of an OEMP by the tenant. These guidelines also contain an Activity Risk Register which provides guidance in determining activities’ risk rating and risk category. Activities not included on this register will be assigned a risk category rating by BAC on a case-by-case basis.

**Environmental Management System**

Where a tenant has implemented an EMS consistent with international/Australian standards (e.g. AS/NZS ISO 14001) which has been presented to BAC, that system shall be taken to be implementation of the OEMP requirements of the AES. Tenants will be required to provide BAC details of audit results on an annual basis as required by their EMS.
Auditing and Reporting Requirements

Based on their allocated risk category, tenants are required to provide BAC with audit/review results by 31 July for the previous financial year. As part of this process, tenants must assess progress to improve environmental performance of their operation by addressing environmental issues identified in previous internal and external audits and BAC environmental inspections, as shown in the table below.

<table>
<thead>
<tr>
<th>Level A activities</th>
<th>Level B activities</th>
<th>Level C activities</th>
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</thead>
<tbody>
<tr>
<td>External audit*</td>
<td>Biennial</td>
<td></td>
</tr>
<tr>
<td>Internal audit</td>
<td>Annual</td>
<td>Annual</td>
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<tr>
<td></td>
<td></td>
<td>Biennial</td>
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</tbody>
</table>

*An external audit is conducted by an independent consultant/contractor to that organisation or for larger organisations (as agreed by BAC) by an internal certified environmental auditor from an independent arm of that organisation.

1) Level A Tenant Audits
- assessment of environmental impact, including compliance with statutory requirements;
- assessment of management practices and procedures relating to environmental performance targets, and progress towards these targets;
- assessment of environmental safeguards in place to minimise risks and the level of environmental impact; and
- assessment of emergency plans (relevant to environment only).

Findings of audits are to be presented in a format consistent with recognised standards for the reporting of environmental audits with all findings made available to BAC by 31 July for the previous financial year.

2) Level B Tenant Audits
These audits address the same issues as Level A tenants without the requirement for an external, biennial audit. As with Level A tenants, the results of audits are to be forwarded to BAC by 31 July for the previous financial year.

3) Level C Tenant Audits
Level C tenants are required to submit audit results to BAC on a biennial basis, by 31 July for the previous two financial years.

Contractor Requirements for Environmental Management

Rarely do external parties differentiate between activities undertaken by tenants and those undertaken by their contractors. Consequently, tenants must ensure that their contractors perform activities in accordance with the Airports Act and AES. In order to manage contractor activities while operating on Brisbane Airport, tenants who engage contractors must ensure the following:

- train or induct contractors and their staff on the environmental risks and impacts relevant to the tenant’s site and operations and how to manage these risks and impacts;
- ensure that contractors have appropriate procedures and practices in place to manage environmental risks and impacts specific to their operations while on the tenant’s site; and
- ensure that the tenant’s OEMP allows for management of environmental risks and impacts posed by contractors operating on the tenant’s site.

Contractors operating on Brisbane Airport must also ensure, prior to undertaking work, that the following have been met:

- staff are trained to address any environmental risks or incidents that might occur in the course of the contractors’ operation on Brisbane Airport or tenant’s site, and
- the tenant is made aware of environmental policies, procedures and equipment that are relevant to the task being completed by the contractor in addition to environment training of contractor staff outlined.

Current Management Practices

BAC currently manages and monitors the environmental performance of tenants through the following activities:

- assigning all BAC tenants with a risk rating (either A, B or C) according to the potential/actual impacts associated with their respective activities;
- requiring A and B tenants to develop an OEMP for endorsement by BAC for ongoing operations;
- ensuring the OEMP is used as the instrument for review, performance assessment and audits;
- undertaking scheduled tenant inspections. The inspections performed by BAC do not form the basis of an internal or external audit. The inspections are intended to assist tenants comply with the requirements of the Airports (Environment Protection) Regulations; and
- tenant Lease and Sub-Lease Agreements that outline the requirement for tenants to prepare and submit an OEMP to BAC and where tenants undertake construction or alteration of the premises a CEMP.
Recent Achievements

1) *Environmental awareness and management program with tenants*
   BAC continued to implement a Tenancy Inspection Program to ensure tenants were aware of the AES and its requirements in addition to ongoing promotion of environment related issues on Brisbane Airport.

2) *Brisbane Airport Tenant’s Environment Committee*
   The Brisbane Airport Tenants’ Environment Committee (BATEC) has provided a forum for all tenants on airport to meet quarterly and discuss environmental issues. BATEC meetings enable tenants to discuss environmental issues and industry practice being implemented both on airport and across SEQ.

Five-Year Action Plan

**Short-Term Actions**
- from 2009 onwards, engage with tenants as needed to assist them to monitor natural resource use, including water and energy consumption.

**Ongoing Actions**
- continue to review tenant activities and update risk ratings as required;
- continue to require all existing and new tenants to develop an OEMP for their ongoing operations and ensure any environment lease clauses are addressed;
- continue to require tenants to provide BAC with self audit/review results as scheduled; and
- continue to facilitate avenues of communication between BAC and airport tenants.
APPENDIX A
## APPENDIX A

### AES Legislative Requirements: Airports Act, 1996

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<th>Sub-section</th>
<th>Legislative Requirement</th>
<th>AES Reference</th>
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</thead>
<tbody>
<tr>
<td>116</td>
<td>(2)(a)</td>
<td>The ALC’s objectives for the environmental management of the airport.</td>
<td>Section 3</td>
</tr>
<tr>
<td></td>
<td>(2)(b)</td>
<td>The areas, if any within the airport site which the airport, in consultation with State and Federal conservation bodies, identifies as environmentally significant.</td>
<td>Section 4</td>
</tr>
<tr>
<td></td>
<td>(2)(c)</td>
<td>The sources of environmental impact associated with airport operations.</td>
<td>Section 4</td>
</tr>
<tr>
<td></td>
<td>(2)(d)</td>
<td>The studies, reviews and monitoring to be carried out by the ALC in connection with the environmental impact associated with airport operations.</td>
<td>Section 4</td>
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<tr>
<td></td>
<td>(2)(e)</td>
<td>The timeframes for completion of those studies and reviews for reporting on that monitoring.</td>
<td>Section 4</td>
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<tr>
<td></td>
<td>(2)(f)</td>
<td>The specific measures to be carried out by the ALC for the purposes of preventing, controlling or reducing environmental impact associated with airport operations.</td>
<td>Section 4</td>
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<tr>
<td></td>
<td>(2)(g)</td>
<td>The timeframes for completion of those specific measures.</td>
<td>Section 4</td>
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<tr>
<td></td>
<td>(2)(h)</td>
<td>Details of the consultations undertaken in preparing the AES.</td>
<td>Section 3</td>
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<tr>
<td></td>
<td>(2)(i)</td>
<td>Such other matters (if any) as are specified in the regulations.</td>
<td>See below</td>
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<tr>
<td>124,131</td>
<td></td>
<td>The ALC must publish a public notice advising the availability, place and timing for inspection or purchase of the Draft AES (ss124) / Final AES (ss131)</td>
<td>Section 3</td>
</tr>
<tr>
<td>130</td>
<td>(1)</td>
<td>States that the ALC must take all reasonable steps to ensure that the strategy is complied with.</td>
<td>Section 3</td>
</tr>
<tr>
<td></td>
<td>(1A)</td>
<td>States that anyone who carries on activities at an airport (other than the ALC) must take all reasonable steps to ensure that the strategy is complied with.</td>
<td>Section 3</td>
</tr>
</tbody>
</table>
## AES Legislative Requirements of Airports (Environment Protection) Regulations, 1997

<table>
<thead>
<tr>
<th>Key Section</th>
<th>Sub-section</th>
<th>Legislative Requirement</th>
<th>AES Reference</th>
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</thead>
<tbody>
<tr>
<td>3.06</td>
<td>(a)</td>
<td>Continuous improvement in the environmental consequence of activities at the airport.</td>
<td>Sections 2 and 3</td>
</tr>
<tr>
<td>3.06</td>
<td>(b)</td>
<td>Progressive reduction in extant pollution at the airport.</td>
<td>Section 3</td>
</tr>
<tr>
<td>3.06</td>
<td>(c)</td>
<td>Development and adoption of a comprehensive Environmental Management System for the airport that maintains consistency with relevant Australian and international standards.</td>
<td>Section 3</td>
</tr>
<tr>
<td>3.06</td>
<td>(d)</td>
<td>Identification and conservation by the ALC and other operators of undertakings at the airport, of objects and matters at the airport that have natural, indigenous or heritage value.</td>
<td>Section 3 and Section 4, Action Plans for Biodiversity Management and Heritage</td>
</tr>
<tr>
<td>3.06</td>
<td>(e)</td>
<td>Involvement of the local community and airport users in development of any future strategy.</td>
<td>Section 3</td>
</tr>
<tr>
<td>3.06</td>
<td>(f)</td>
<td>Dissemination of the strategy to sub-lessees, licensees, other airport users and the local community.</td>
<td>Section 3</td>
</tr>
<tr>
<td>3.08</td>
<td>(a)</td>
<td>The quality of air at the airport site, and in so much of the regional airshed as is reasonably likely to be affected by airport activities.</td>
<td>Section 4, Action Plan for Air Quality and Emissions</td>
</tr>
<tr>
<td>3.08</td>
<td>(b)</td>
<td>Water quality, including potentially affected groundwater, estuarine waters and marine waters.</td>
<td>Section 4, Action Plan for Water Management</td>
</tr>
<tr>
<td>3.08</td>
<td>(c)</td>
<td>Soil quality, including that of land known to be already contaminated.</td>
<td>Section 4, Action Plan for Soil Management</td>
</tr>
<tr>
<td>3.08</td>
<td>(d)</td>
<td>Release, into the air, of substances that deplete stratospheric ozone.</td>
<td>Section 4, Action Plan for Air Quality and Emissions</td>
</tr>
<tr>
<td>3.08</td>
<td>(e)</td>
<td>Generation, and handling, of hazardous waste and any other kind of waste.</td>
<td>Section 4, Action Plan for Waste Management</td>
</tr>
<tr>
<td>3.08</td>
<td>(f)</td>
<td>Usage of natural resources (whether renewable or non-renewable).</td>
<td>Section 4, Action Plans for Energy, Water and Waste Management</td>
</tr>
<tr>
<td>3.08</td>
<td>(g)</td>
<td>Usage of energy, the production of which generates emissions of gases known as “greenhouse gases”.</td>
<td>Section 4, Action Plans for Air Quality and Emissions and Energy Management</td>
</tr>
<tr>
<td>3.08</td>
<td>(h)</td>
<td>Generation of noise.</td>
<td>Section 4, Action Plan for Noise</td>
</tr>
<tr>
<td>Other Relevant Sections</td>
<td>AES Reference</td>
<td></td>
<td></td>
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<td>-----------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td></td>
<td></td>
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<tr>
<td>3.03 Sites of indigenous significance</td>
<td>Section 4 Action Plan for Heritage</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This section specifies those matters that the ALC must for identified sites of indigenous significance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.04 Operations other than airport operations</td>
<td>Section 4 Action Plans for Development Projects and Tenant and Contractor Obligations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This section specifies those things/matters that the ALC must for identified sites of indigenous significance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.05 Environmental management training</td>
<td>Section 3 Within BAC's EMS and in BAC's corporate structure and responsibilities for AES and EMS.</td>
<td></td>
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<tr>
<td></td>
<td>This section specifies those things/matters that the ALC must for identified sites of indigenous significance.</td>
<td></td>
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<tr>
<td>3.07 Identification of environmentally significant areas of airport site</td>
<td>Section 4 Action Plan for Biodiversity</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>This section specifies those things/matters that the ALC must for identified sites of indigenous significance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.09 Proposed studies, reviews and monitoring</td>
<td>Section 4 Action Plan for each environmental issue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This section specifies those things/matters that the ALC must for identified sites of indigenous significance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.10 Proposed measures for preventing, controlling or reducing environmental impact</td>
<td>Section 4 Action Plans for each environmental issue</td>
<td></td>
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<tr>
<td></td>
<td>Sections 4 Action plans for Tenants and Contractors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) matters mentioned in 3.06, 3.07 and 3.08;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) the means by which it proposes to achieve the co-operation of other operators of undertakings at the airport in carrying out those plans.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Your Sustainable Airport