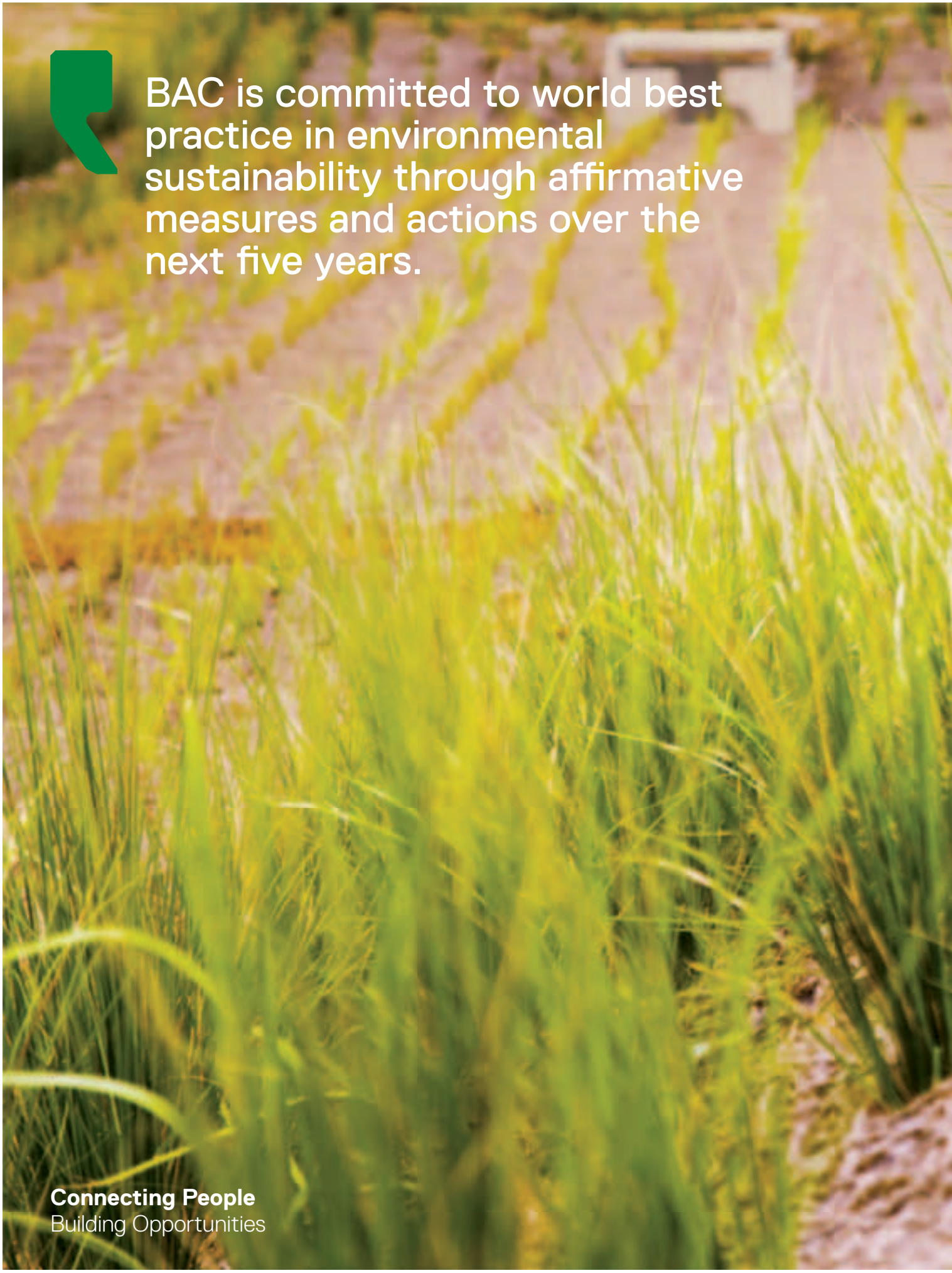


BAC is committed to world best practice in environmental sustainability through affirmative measures and actions over the next five years.

Connecting People
Building Opportunities

AIRPORT ENVIRONMENT STRATEGY

13

AIRPORT ENVIRONMENT STRATEGY

Strict environmental management and monitoring lie at the heart of BAC's approach to protecting the conservation values of the airport.

13.1 Introduction

The 2014 Airport Environment Strategy (AES) is the formal blueprint of BAC's commitment to world best practice environmental sustainability, and the affirmative measures and actions to be implemented over the next five years to ensure continuous improvement in all aspects of our environmental management.

BAC's commitment to environmental responsibility and sustainability extends well beyond a rigid compliance with all relevant government regulatory standards and controls.

Maintaining long-term environmental sustainability for the broader Brisbane Airport precinct is a fundamental tenet of BAC's operating philosophy, and is intrinsically linked to the successful attainment of our economic, operational and social objectives.

As the operator of one of Australia's busiest airports and one of its fastest growing precincts, it is imperative that BAC, as part of its longer-term planning, harnesses effective and sustainable environmental management to optimally grow its business while minimising future natural resource consumption. Best practice environmental sustainability also makes BAC a better place to work; a destination more desirable to visit, use and enjoy; and helps enhance BAC's reputation for benchmarking corporate responsibility (adding significant value to BAC's brand through enhancing its reputation for corporate responsibility).

BAC's environmental sustainability objectives and practices as outlined in this document, continue to evolve to meet the challenges of BAC's expansive vision for Brisbane Airport and its surrounding precinct. They also remain closely aligned with the guiding principles and objectives set for both Brisbane's and Queensland's sustainable growth strategies.

BAC continues to work closely with Commonwealth, state and local agencies via working groups to achieve best practice environmental outcomes from the continued growth and improvement of the Brisbane Airport precinct.

The AES, prepared as part of the 2014 Master Plan, has been developed in consultation with government agencies, along with airport tenants and the local community via a series of meetings, interactive workshops, and community exchanges.

13.2 Brisbane Airport Surrounds

Brisbane Airport occupies a site of approximately 2,700 hectares located about 8 km north-east of Brisbane's Central Business District (CBD). It is the premier regular public transport (RPT) 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 (refer to Figure 13.1).

Located in the heart of the Australia TradeCoast[1] region, Brisbane Airport is situated in an area that supports around 1,500 businesses across a variety of industries including aviation and aerospace, building and construction, food manufacturing, innovative manufacturing, retail, shipping and marine, and transport and logistics.

1 *Australia TradeCoast was established in 1999 as a strategic partnership between Brisbane Airport Corporation, Brisbane City Council, Port of Brisbane Pty Ltd and the Queensland State Government to promote the economic growth and development of the area in which the airport and port are located, including infrastructure coordination, destination marketing and business development.*

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

- The Port of Brisbane
- The Luggage Point Wastewater Treatment Plant
- Oil refineries and other heavy industries including fertilizer and concrete manufacturing.

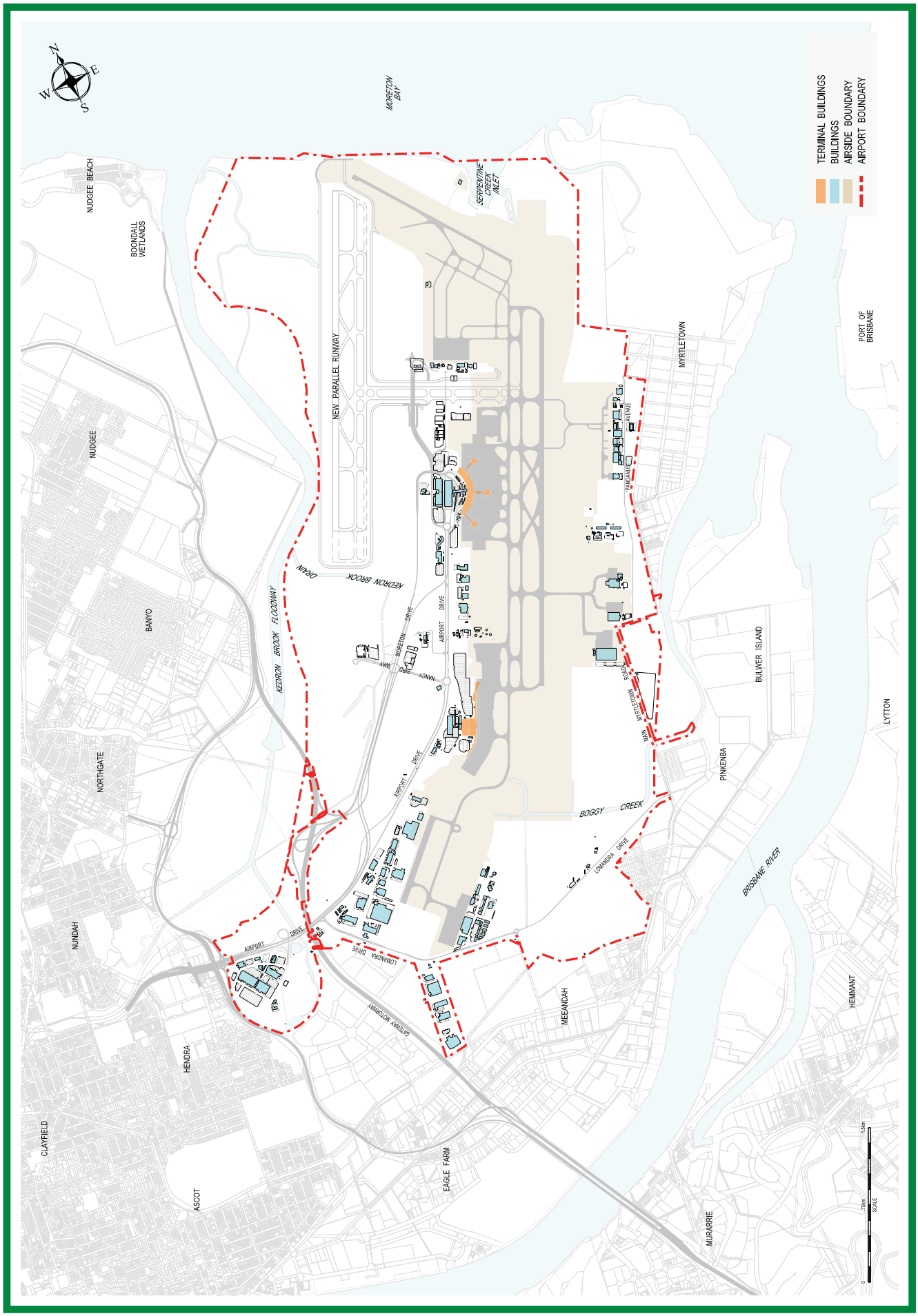
Brisbane Airport is situated on a reclaimed portion of a river delta at the mouth of the Brisbane River. Areas of environmental value adjacent to the airport include:

- Moreton Bay Marine Park, (to the north) sections of which are RAMSAR Convention on Wetlands (RAMSAR) declared wetlands
- The Brisbane Airport foreshore (to the north) is listed as a Nationally Important Wetland
- Mangrove and saltmarsh communities around Serpentine Creek Inlet and Jubilee Creek mouth (to the north-east, parts of which are within BAC tenure) are listed as Nationally Important Wetlands and are RAMSAR declared
- The Boondall Wetlands (across Kedron Brook floodway to the west) which are RAMSAR declared and also listed as Nationally Important Wetlands
- 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.

Brisbane Airport is a cornerstone of the highly industrialised Australia TradeCoast region

13 AIRPORT ENVIRONMENT STRATEGY

FIGURE 13.1: BRISBANE AIRPORT SURROUNDS



13.3 2009 AES and Recent Achievements

The 2009 AES was officially endorsed in August 2009 by the Commonwealth Minister for the then Department of Infrastructure, Transport, Regional Development and Local Government. Since 2009, BAC has undertaken a range of environmental management and monitoring initiatives, the most significant being:

- Ongoing management of known contaminated sites in existence prior to July 1997 including remediation of two sites and substantial remediation of another three sites
- Numerous initiatives to minimise use of natural resources and waste generation:
  - Ongoing implementation and reporting of a water efficiency management plan (WEMP)
  - Rainwater harvesting
  - Installation of a recycled water network
  - Use of recycled water in cooling towers and for irrigation
  - Installation of energy and water efficient fixtures and fittings in new and existing buildings
  - Installation of solar photovoltaic arrays on BAC buildings and infrastructure
  - Introduction of public space recycling in the common user area of the Domestic T2, the International T1 and Skygate.
- A cultural heritage gap analysis and initial review of the airport's Heritage Register was undertaken. This register may be further updated during the development of the up-coming Heritage Management Plan (HMP) as an action item of the 2014 AES
- Drainage works in the Pinkenba Environmentally Significant Area (ESA) to improve mangrove health
- Ongoing comprehensive ecosystem health monitoring programs for all ESA's
- Ongoing annual greenhouse gas reporting via the National Greenhouse and Energy Reporting (NGER) scheme
- Ongoing annual National Pollutant Inventory (NPI) reporting to the Queensland Government
- Development and implementation of stormwater quality management strategies (landside and airside) for development projects
- Ongoing comprehensive surface water and groundwater quality monitoring programs
- Ongoing requirements for construction projects to develop and implement Construction Environmental Management Plans (CEMPs)
- Ongoing comprehensive auditing programs for higher environmental risk tenant operations, construction contractors and BAC operations
- Ongoing implementation of an Environmental Management System (EMS) consistent with AS/NZS ISO 14001.

13.4 Structure of the 2014 AES

In accordance with the *Airports Act 1996* (Airports Act), the AES now forms part of the 2014 Master Plan. As such, background information on BAC's company details, Brisbane Airport's operations and infrastructure, and airport development and growth forecasts among others, is contained within the 2014 Master Plan.

This Preliminary Draft AES contains individual action plans that identify how environmental issues are to be managed at Brisbane Airport over the next five years. These action plans respond to the requirements of the Airport Legislation. Documents referenced within these action plans are available upon request from BAC.

A summary of the AES legislative requirements under the Airports Legislation and the corresponding sections of the AES addressing this legislation are provided in Appendix A.

Details of the consultations undertaken in preparing the Preliminary Draft AES, including the main outcomes of the consultations, are included in Appendix B.

13.5 BAC Environmental Management Framework

BACKGROUND

There are a number of corporate initiatives that 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 Environment and Sustainability Policy which defines the scope of BAC's EMS
- 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

13 AIRPORT ENVIRONMENT STRATEGY

- BAC's Master Plan, as the principal planning document for airport development, including 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)
- Other airport users' responsibilities under the AES for the environmental management of their individual operations or activities.

Table 13.1 describes the environmental management framework at Brisbane Airport.

FRAMEWORK

BAC's Environmental Management System underpins on-airport sustainability.

TABLE 13.1: FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT AT BRISBANE AIRPORT

1	Airport Master Plan	The principal planning document for airport development
2	Airport Environment Strategy	Outlines a framework for environmental management on Brisbane Airport and responds to the requirements of the Airports Act and Airports Regulations 1997 (Airports Regulations) The AES now forms part of the Master Plan
3	EMS and Environment Action Plans	The BAC EMS is consistent with internationally recognised standard AS/NZS ISO 14001
4	Environment and Sustainability Policy	Guides the implementation of environmental management and sustainability principles across Brisbane Airport
5	Corporate Sustainability Program	Establishes a framework for the achievement of objectives and targets across the four pillars of sustainability

Captured stormwater supplements the airport's non-potable water supply

FIGURE 13.2: BAC'S ENVIRONMENT AND SUSTAINABILITY POLICY

Brisbane Airport Corporation Environment and Sustainability Policy

Brisbane Airport is one of the busiest airports in Australia and is continuing to grow. It is located 8 km from the Brisbane CBD and in close proximity to Moreton Bay, industrial and residential areas, and the Gateway Motorway. Brisbane Airport Corporation (BAC) 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 airport operations and security, asset management, tenancy management and development projects. All other airport users have a responsibility for the environmental management of their activities.

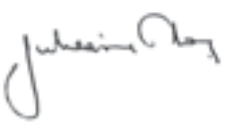
BAC is committed to:

- 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 natural resource consumption, waste generation and prevent pollution
- Working with government departments, agencies and airlines to manage impacts of aircraft noise and the impacts of aviation on the community
- Constantly striving to achieve continual improvement in environmental and sustainability performance by implementation of an Environmental Management System (EMS) and sustainability benchmarking evaluations.

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, tenants 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 and sustainability performance improvements
- Maximise energy, water and waste efficiencies
- Manage noise impacts, pollutant emissions and the impacts of climate change on airport
- Identify and seek to conserve objects and matters at the airport that have natural, indigenous or heritage value
- Achieve best practice in sustainable property development
- Provide appropriate environmental training to BAC employees, and encourage our tenants and contractors to do the same
- Build strong and active relationships with the wider community through engagement and sponsorship programs
- Provide the staff and resources necessary to meet these policy objectives.

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



Julieanne Alroe,
CEO/MD Brisbane Airport Corporation
11th September 2013

BAC ENVIRONMENT AND SUSTAINABILITY POLICY

BAC's Environment and Sustainability Policy (refer Figure 13.2) is seen as the foundation of its EMS and AES and guides the implementation of both. The policy represents a formal undertaking by BAC to give due consideration to the potential environmental impacts of all aspects of BAC's activities and operations.

REGULATORY FRAMEWORK

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

- The Airport Legislation and other relevant legislation
- The Master Plan and AES
- Regulatory representatives of the Department of Infrastructure and Regional Development (DoIRD).

AIRPORT LEGISLATION

In order to oversee privatised Australian airports, the Australian 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
- Airports Regulations
- Airports (Environment Protection) Regulations 1997
- 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, may also be adopted where reasonable and practicable.

Construction progress on the New Parallel Runway is monitored by CC TV

LEGISLATIVE REQUIREMENTS OF THE AES

The AES covers all environmental matters arising from the operation and expansion of the Brisbane Airport site in accordance with the Airport Legislation. The Airports Act, with further elaboration in the Airports Regulations, specifies the matters to be addressed in the AES. Each of the sections detailed in this AES respond directly to a specific requirement or key environmental aspect, as stated in the legislation. Refer to Appendix A for detail.

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 the Air Navigation (Aircraft Noise) Regulations 1984. The AES does, however, address noise relating to aircraft ground running procedures and the use of aircraft auxiliary power units (APUs).

DEVELOPING THE AES

The development of the AES required consultation with Commonwealth, State and local agencies, airport tenants and the local community via a series of meetings, interactive workshops, and community information exchanges throughout 2013. BAC utilised the information captured during this consultation process to develop actions across a range of environmental matters. Refer to Appendix B for a list of consultations undertaken and outcomes achieved.

ENVIRONMENTAL MONITORING

BAC regularly conducts a broad program of environmental monitoring and inspections as one component of the EMS which then informs future decision making processes. Monitoring programs are undertaken by suitably qualified professionals with relevant experience, with programs reviewed in consultation with the Airport Environment Officer (AEO). Monitoring programs are generally consistent with best practice and current industry standards. A summary of environmental monitoring and inspection programs are outlined in Table 13.2.

TABLE 13.2: ENVIRONMENTAL MONITORING PROGRAM

Monitoring Program	Frequency
Surface water quality monitoring (physical, chemical and biological indicators)	Seasonal
Groundwater quality monitoring: » Underground storage tanks (USTs) (fuels/oils) » Contaminated sites (heavy metals or dependent upon the contaminant) » Construction sites.	 High risk USTs and contaminated sites: Quarterly Low risk USTs and contaminated sites: Biannually As required
Estuarine health (mangrove & saltmarsh) monitoring	Three times per year at all ESAs
Migratory shorebird monitoring	Monthly from September to April
Lewin's rail monitoring	Biannually during the breeding season
Tenant inspections (A level)	Annual inspections and spot checks on audit findings
Tenant inspections (B level)	Annual inspections determined on a risk basis
Airside activities and operations	Monthly inspections
Landside activities and operations	Monthly inspections
Storm event monitoring	Inspections of high risk construction sites undertaken after significant rainfall amounts
Construction sites	Higher risk sites – weekly inspections All other sites – monthly inspections
Landside air quality monitoring	As required
Emissions calculations (carbon and pollutants)	Annually
Airside wildlife monitoring	Daily
Additional flora and fauna monitoring	As required
Indigenous and non-indigenous heritage monitoring	As required
Air quality data review	Annually
Waste and recycling data review	Quarterly
Weed and pest surveillance	Seasonally
Ground running operations	As required

Bioretention system for stormwater treatment

ENVIRONMENTAL AWARENESS AND COMPETENCY TRAINING

BAC delivers environmental awareness training to all staff via the staff induction process. For those employees with specific environmental facets to their roles, specific face-to-face environmental awareness and competency training is provided. Training is undertaken by ensuring relevance and understanding for specific environmental management skills, and knowledge and competency levels in accordance with BAC's Environment and Sustainability Policy.

ENVIRONMENTAL REPORTING

Reporting mechanisms allow BAC to effectively analyse and improve knowledge and review the implementation of the EMS framework. Reports on environmental performance are provided to the AEO as per the monitoring program requirements, or upon completion of the program or part thereof. Refer to Table 13.3 for a list of agency reports and public reports provided by BAC.

BAC delivers environmental training to all staff via its staff induction process and more rigorous training for those with specific responsibilities.

TABLE 13.3: ENVIRONMENTAL REPORTING REQUIREMENTS

Reporting Mechanism	Department	Legislation / Guideline
Annual Environment Report	Department of Infrastructure and Regional Development	Airports Act Airports (Environment Protection) Regulations
Annual National Pollutant Inventory Report	Queensland Department of Environment and Heritage Protection	National Pollutant Inventory Guide 2012
Annual National Greenhouse and Energy Report	Commonwealth Department of Climate Change and Energy Efficiency	National Greenhouse and Energy Reporting Act 1997
BAC Annual Report	BAC's Annual Reports are available at www.bne.com.au. An annual sustainability update is provided in these reports.	

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 discussions on a range of environmental issues. BAC has also 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.

BAC facilitates discussion of specific environmental issues with its tenants through the Brisbane Airport Tenants Environment Committee (BATEC); with the local community through the community information exchanges; quarterly meetings of the Brisbane Airport Community Aviation Consultation Group (BACACG) and at local festivals; and with all levels of government through the Brisbane Airport Area Round Table (BAART).

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 in 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 as required.

OTHER AIRPORT USERS

Airport users, including tenants, their subtenants, contractors and subcontractors, referred to in the Airports Act 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
- Establish environmental monitoring systems applicable to their operations and periodically report results to BAC.

Recent Achievements	
EMS Gap Analysis	In 2013, an external EMS audit was undertaken to assess the effectiveness of the system and to identify areas for improvement.
Review of BAC's Environment Policy	BAC reviewed the Environment Policy to include additional sustainability aspects. The revised policy is now titled 'Environment and Sustainability Policy' and maintains consistency with AS/NZS ISO 14001.
Continual improvement of the Environmental Monitoring Program	BAC has continued to refine and adjust the environmental monitoring program by adopting a risk-based management approach.
Continuation of the Annual EMS Audit Program	Consistency has been achieved in implementing, maintaining and reporting BAC's annual internal EMS audit program for significant environmental risks associated with BAC's operations.
Continuation of the Environmental Awareness and Competency Training Program	All new staff receive a face-to-face EMS induction upon commencing work with BAC. Additionally, BAC require all staff to undertake an online refresher environmental awareness course every two years.
Acquirement of Environmental Essentials (for the review of environmental legal obligations)	In 2013, a web based management tool for reviewing EMS and environmental legal obligations was adopted.
Replacement of BAC's Incident Notification System	A new system that provides workflows, alerts and notifications in the event of emergencies and incidents has been implemented in 2013.

13.6 Environmental Management System

OVERALL GOAL

Implement and maintain a world-class EMS across all facets of Brisbane Airport's operations, which achieves long-term improvements to environmental sustainability and continues to improve and evolve through relevant stakeholder input.

OBJECTIVES

- Maintain an EMS consistent with the internationally recognised standard AS/NZS ISO 14001
- Establish and review environmental performance indicators to benchmark and demonstrate continuous improvement
- Maintain an ongoing program to identify and conserve objects and matters at the airport that have natural, indigenous or heritage value.

BAC'S ENVIRONMENTAL MANAGEMENT OBLIGATIONS

Essentially, BAC's obligations under the Airport Legislation and the AES consist of:

- Maintaining an EMS consistent with Australian and international standards
- 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 Airports Regulations 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: 2004.

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 was designed for integration into BAC's overall strategic business plan and management systems, establishing environmental considerations as a routine aspect of all BAC's activities. BAC's EMS documentation is centralised and obtainable on a dedicated intranet page.

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 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 (EMP) incorporating an appropriate audit regime. Tenant and contractor obligations and development projects are discussed in separate sections in the latter part of this AES.

BAC ensures that internal staff responsible for environmental management have appropriate qualifications, training and experience, and continue to undertake the Environmental Awareness and Competency Training Program within the company.

Five-Year Action Plan

	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Continue to maintain BAC's Environmental Management System	Ongoing	Continual improvement in environmental management and compliance	DoIRD Annual Environment Report
2	Continue to undertake the Environmental Awareness and Competency Training Program with internal staff	Ongoing	Continual improvement in environmental management and compliance	
3	Review the effectiveness of BAC's new Incident Notification & Management Tool (Noggin) to manage environmental incidents	2015 – 2016	Appropriate management and control of environmental incidents	
4	Undertake an external audit of BAC's EMS, and develop an implementation plan for the recommendations of the audit	2017 – 2018	Continual improvement in environmental management and compliance	

13.7 Sustainability

OVERALL GOAL

Entrench environmental sustainability as a cornerstone of BAC's operating philosophy and a fundamental contributor to its economic, operational and social performance success.

OBJECTIVES

- Identify, implement and benchmark environmental sustainability performance at Brisbane Airport for all activities under BAC's direct control
- Continue to meet the annual performance targets outlined under BAC's Environmental Sustainability Action Plan.

BACKGROUND

The 2014 Master Plan describes key development objectives based on the four pillars of sustainability shown below.

Underpinning the environmental sustainability development objectives contained in the 2014 Master Plan is BAC's corporate Environment and Sustainability Policy.

This policy provides a vision and commitment to the sustainability program. The policy is seen as the cornerstone of the EMS and AES and guides the implementation of all actions plans contained in both.

The policy was initially developed in 2003 in accordance with the requirements of AS/NZS ISO 14001 and has been progressively reviewed since. 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.

BAC's EMS section describes the environmental management framework at Brisbane Airport and the linkage between BAC's Corporate Sustainability Program, the Environment and Sustainability Policy and the AES.

CURRENT MANAGEMENT PRACTICES

BAC has undertaken an array of environmental sustainability projects over the last five years and are summarised in the Energy Management, Air Quality and Emissions, Water Management, Waste and Resource Management, Biodiversity, and Development Projects sections.

In 2013 BAC developed an Environmental Sustainability Action Plan to bring together each of these projects to provide a more coordinated framework for managing environmental sustainability as a whole.

The Environmental Sustainability Action Plan not only contains annual targets and a three-year action plan for a number of key metrics, but also includes performance benchmarking evaluations. This plan is to be updated annually.

Economic Sustainability	Operational Sustainability	Environmental Sustainability	Social Sustainability
» Drive and enable state and national economic wealth and employment growth » Provide aviation infrastructure to accommodate and encourage growth » Commitment to best practice corporate governance and prudent management of Brisbane Airport for the benefit of Australia.	» Facilitate the safe and secure movement of people, freight and aircraft » Ensure the timely delivery of new and improved airport capacity » Deliver innovative, efficient and continuous airport services where customer service is at the core of airport operations » Develop relationships to optimise overall operational performance.	» Achieve a balance between the on-airport built environment and biodiversity values » To be recognised as a leader in the management of energy, water, waste, noise and biodiversity » Achieve environmentally sustainable development across the airport.	» Contribute to achieving the vision of Brisbane as a new world city that encourages growth while protecting the city's values and lifestyle » Harness development opportunities to underpin Brisbane Airport as a business and leisure hub to maximise airport accessibility and connectivity » To build respectful and valued relationships so all people want to be part of, and have pride in Brisbane Airport.

13 AIRPORT ENVIRONMENT STRATEGY

Recent Achievements	
Development of the Environmental Sustainability Action Plan	The Environmental Sustainability Action Plan was developed in 2013 to document BAC's commitment to environmental sustainability.
EarthCheck Registration	BAC will continue to benchmark environmental sustainability performance through the EarthCheck international sustainability certification program (2013).
Green Star Communities PILOT rating tool	In 2012, BAC registered for the Green Building Council of Australia (GBCA), Green Star Communities Pilot rating tool to strive to achieve a green-star rating for the BAC Property Development Master Plan (PDMP).
Establishment of the Green Network	The Green Network provides an endorsement platform for sustainability initiatives, and a review of management strategies and action plans which is presented via sustainability and benchmarking reporting. The Green Network is chaired by the Environment Manager with additional members including the Chief Executive Officer and Managing Director and other senior managers.

During the term of this AES, BAC's sustainability focus will be to continue to benchmark sustainability performance; improve data accuracy; set realistic short-term targets and to define Brisbane Airport's longer-term sustainability vision.

Five-Year Action Plan

	Management Action	Timeframe	Management Outcome	Reporting
1	Review the Environmental Sustainability Action Plan	Ongoing	Continued focus on sustainability improvement	DoIRD Annual Environment Report
2	Achieve EarthCheck Bronze Benchmarking status	2014 – 2015	Environmental sustainability performance benchmarked	DoIRD Annual Environment Report
3	Define Brisbane Airport's longer-term sustainability vision for utilities	2014 – 2015	Appropriate resources are allocated to achieve sustainability outcomes	BAC Annual Report
4	Investigate the opportunity to register for the Global Reporting Initiative (GRI)	2014 – 2016	Continued focus on sustainability improvement	DoIRD Annual Environment Report
5	Achieve a green-star rating for the PDMP under the GBCA Green Star Communities PILOT rating tool	2015 – 2016	Improved sustainable development performance	DoIRD Annual Environment Report
6	Attain EarthCheck Silver Certification	2016 – 2017	Improved environmental sustainability performance	BAC Annual Report

Buildings are designed with sustainability principles

13.8 Energy Management

OVERALL GOAL

Harness continuous improvements in energy usage efficiencies to achieve long-term environmental and economic sustainability across all of Brisbane Airport's operations.

OBJECTIVES

- Identify and implement best practice sustainable management methods to guide the planning, supply and efficient use of energy at Brisbane Airport for all activities under BAC's direct control
- Promote and encourage energy efficiency practices to all BAC tenants via continuing workshops and education.

BACKGROUND

BAC plans for, designs, constructs and maintains the electrical reticulation network on Brisbane Airport.

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

- Electrical reticulation
- Standby diesel generation sets
- Solar photovoltaic (PV) arrays
- Unleaded petrol, diesel or liquid petroleum gas (LPG) for vehicles and machinery
- Individual gas tanks at various locations.

CURRENT MANAGEMENT PRACTICES

BAC aims to mitigate the airport's energy demand based on the undertaking of energy efficiency projects to reduce base load in the first instance, then with the generation of alternative methods of electrical energy to reduce peak demand.

In 2011, BAC developed an Energy Management Strategy, which outlined an approach for balancing BAC's energy demand and carbon emissions associated with that demand.

Recent Achievements	
Lord Mayors Business Awards – Sustainability in Business winner	BAC won the Lord Mayor's Business Awards Sustainability Category in 2013 primarily for undertaking projects that reduced Brisbane Airport's overall energy consumption.
Energy efficiency training	Free energy efficiency training workshops were made available to Brisbane Airport tenants through EarthCheck's Business Ready Program in 2013.
Solar PV arrays	Solar PV arrays totalling 200 kilowatts were installed on BAC buildings and the Domestic T2 multi-level car park in 2012 and 2013.
Energy Management Strategy	BAC developed an Energy Management Strategy in 2011 which outlined an approach for balancing BAC's energy demand and carbon emissions associated with that demand.
Audits	Energy efficiency audits were undertaken on both terminals and multi-level car parks in 2011.
Energy projects	20 energy projects have been completed since 2011.
Partnerships	BAC has an ongoing program to review initiatives that can reduce energy consumption in partnership with Amsterdam Airport Schiphol and research alliances including the Queensland University of Technology (QUT).

Five-Year Action Plan				
	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Annual review of energy consumption data in order to identify, consider and investigate concepts and technologies which will promote energy efficiency	Ongoing	Reduction in base electricity load	DoIRD Annual Environment Report
2	Continue to roll out smart metering across the airport for more accurate data collection	Ongoing	Accurate energy efficiency verification	
3	Incorporate energy efficient initiatives in existing infrastructure and new developments on airport	Ongoing	Reduction in base electricity load through retrofitting selected buildings	Airport Approval process DoIRD Annual Environment Report
4	Provide energy management training workshops for tenants	2014 – 2015	Reduction in energy consumption	DoIRD Annual Environment Report
5	Undertake a review of the Energy Management Strategy	2014 – 2015	Renewed focus on reducing energy consumption	
6	Investigate alternate forms of electricity generation such as tri-generation	2014 – 2016	Reduction in peak electricity load with substitution of alternate forms of energy	
7	Investigate the feasibility of installing innovative renewable energies in the Skygate precinct	2014 – 2016	Show casing sustainability to the wider community	
8	Installation of additional solar PV arrays on relevant BAC infrastructure and buildings where feasible	2015 – 2016	Reduction in base electricity load with substitution of alternate forms of energy	
9	Review the electrical metering strategy for Brisbane Airport	2015 – 2016	Accurate system monitoring	

Solar photovoltaic array at the Domestic T2 multi-level car park supplements airport energy demands

13.9 Air Quality and Emissions

OVERALL GOAL

Utilise renewable energies and alternate energy sources to reduce long-term greenhouse gas emissions and sustain air quality across the wider airport precinct.

OBJECTIVES

- Identify opportunities to reduce harmful emissions from sources under BAC's direct operational control
- Regularly monitor and report any harmful emissions generated as a result of operational activities undertaken by BAC.

BACKGROUND

Brisbane Airport is located in the vicinity of some of Brisbane's major industrial zones including operations such as oil refineries, chemical manufacturers and the Port of Brisbane, as well as major road corridors such as the Gateway Motorway and AirportlinkM7 tunnel.

Activities and infrastructure that generate potentially harmful emissions and/or generate greenhouse gas emissions at Brisbane Airport include:

- APUs and ground power units (GPU)
- Ground-based aircraft movement, refuelling and defueling
- 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 (ODS)
- Electricity generating equipment
- Dusts generated from construction related activities.

The Airports (Environment Protection) Regulations 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.

CURRENT MANAGEMENT PRACTICES

Greenhouse Gas Emissions

As Brisbane Airport continues to develop and grow, the overall energy demand will continue to increase. This will have a corresponding increase in carbon dioxide emissions unless carbon reduction measures are implemented. BAC is investing in renewable energies such as solar arrays and alternate forms of energy generation to reduce peak demand and will continue to pursue base load energy reduction via retrofitting projects.

Regional Air Quality

South East Queensland's (SEQ) air shed is monitored by the Queensland Department of Environment and Heritage Protection (DEHP) in accordance with the Air National Environment Protection Measure (NEPM) Monitoring Plan. Monitoring sites located adjacent to the airport will assess air quality which will include meteorological data, ozone, nitrogen oxides, visibility reducing particulate matter (PM10), carbon monoxide, and sulfur dioxide.

BAC accesses monthly monitoring results from the Queensland Monitoring Network and reviews these with respect to airport operations and assesses with the Airports (Environment Protection) Regulations.

National Pollutant Inventory (NPI)

BAC's current operations trigger Category 1a and 2a reporting requirements under the NPI. This is based on BAC's fleet vehicle usage and electricity consumption. However the majority of fleet vehicles have now been changed to diesel or converted to LPG which helps take the peak off Total Volatile Organic Compound (TVOC) emissions. To date, BAC does not trigger reporting for nitrous oxides and sulfer oxides under NPI. However these metrics are incorporated into the NGER with the figures converted into carbon equivalents.

Ozone Depleting Substances (ODS)

ODS that have been used, or are currently in use on Brisbane Airport, include hydrochlorofluorocarbon (HCFC) and methyl bromide.

BAC maintains a list of certified ODS used on airport in accordance with the Airport Legislation, although only small quantities of HCFCs are still in use as refrigerants in older chillers.

AIR QUALITY

Use of renewable energies and alternative energy sources are priorities.

Recent Achievements

Landside Air Quality Monitoring investigation at Brisbane Airport	Queensland University of Technology (QUT) was engaged to undertake an air quality monitoring assessment from 2011 – 2014. The report provides baseline data for the future sustainable development of the various business precincts on Brisbane Airport.
Car fleet (2011)	BAC has either replaced all unleaded petrol vehicles with modern diesel vehicles or converted vehicles to LPG.
Introduction of T-Bus and S-Bus	BAC introduced a free bus service connecting both terminals to/from the Airport Central Skygate precinct.

Five-Year Action Plan

	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Refine the management framework enabling BAC to accurately collect and report under the NGER Act	Ongoing	Compliance with NGER	Annual National Greenhouse and Energy Report
2	Review and refine BAC's NPI calculations and report as required	Ongoing	Compliance with NPI requirements	Annual NPI Report
3	Continue to review air quality monitoring data collected from the DEHP monitoring sites	Ongoing	Informed decision making processes	DoIRD Annual Environment Report
4	Continue to maintain a list of ODS in use on Brisbane Airport	Ongoing	Compliance mechanism	
5	Offset BAC's car fleet carbon emissions	Ongoing	Reduced carbon footprint of vehicles	
6	Progressively install 400Hz GPUs at the terminals for the phase out of APUs subject to airline agreements	Ongoing	Reduction in emissions and ground-based noise	
7	Review BAC's fleet vehicle purchasing policy to consider emission factors	2014 – 2015	Reduction in vehicle-emitted pollutants	
8	Undertake an NGER reasonable assurance audit	2015 – 2016	Compliance with NGER	Annual National Greenhouse and Energy Report
9	Undertake measurements to assess emissions from BAC's emergency generators and BAC's major sewer pump stations	2015 – 2017	Improved energy efficiency, data collection and reduction in emissions	DoIRD Annual Environment Report
10	Investigate the opportunity for establishing an electric vehicle car fleet for BAC	2016 – 2018	Reduced carbon footprint of vehicles	

13.10 Waste and Resource Management

OVERALL GOAL

Enhance Brisbane Airport's environmental sustainability through applying industry-leading standards of on-site waste minimisation, waste recycling and waste management.

OBJECTIVE

- Maximise waste efficiencies wherever possible through the industry-leading management, recycling and disposal of hazardous and non-hazardous waste generated from operations under BAC's operational control.

BACKGROUND

Waste that is currently the responsibility of BAC is generated in the common user area of the Domestic T2, in the International T1 and in the surrounding BAC offices and maintenance facilities at Brisbane Airport. Waste types generated in BAC-controlled areas include:

- General waste
- Cardboard/paper for recycling
- Commingled recycling
- Quarantine waste
- Hazardous/regulated waste (e.g. waste oils from vehicle workshops, waste paint products, waste sludge collected from interceptor devices etc.)
- Trade waste
- Sharps/clinical waste
- Sanitary waste.

Aditionally, waste generated on-site by tenants or contractors can include:

- Green waste
- Plastic film recycling
- Construction and demolition waste
- Additional hazardous/regulated wastes (e.g. fats and oils from catering operations, contaminated materials)
- Contaminated soil.

CURRENT MANAGEMENT PRACTICES

In 2011, BAC developed the Brisbane Airport Waste Management Strategy as a guidance document for future waste management on airport.

This strategy aims to improve BAC's waste management performance by focusing on initiatives that will enable:

- Operational waste management improvements aimed at addressing the waste management hierarchy
- Continuous improvements and innovation enabled through infrastructure maintenance, data collection and stakeholder engagement.

All waste and recycling generated on Brisbane Airport is removed offsite via individual contracts with waste service providers.

The majority of Brisbane Airport's general waste is currently disposed to landfill at Swanbank (Ipswich City Council). Recyclables are also taken offsite by waste handlers to individual waste transfer stations or resource recovery stations.

It is the responsibility of all airport users, including tenants and contractors, to establish their own waste contracts with a licensed waste handler.

Brisbane Airport has adopted a sustainable approach to the management of waste including the following key components:

- Avoid, reuse, recycle and recovery of waste
- Efficient segregation of waste by smart design and education
- Appropriate storage of waste
- Monitoring, reporting and review of waste data.

WASTE MANAGEMENT

BAC recycles waste to achieve environmental sustainability.

Recent Achievements	
Recycling of redundant personal computers and phone handsets	The successful tenderer for the replacement of BAC's redundant computer and handset equipment in 2013 was required to either reuse or recycle replaced technology as part of the contract with BAC.
Topsoil and mulch facility	In 2013, BAC's New Parallel Runway (NPR) project established a topsoil and mulch facility to blend cleared vegetative material with on-site topsoil to create a nutrient rich soil product for landscaping the future new airfield.
Changes to logistical operations	Innovative solutions in waste management logistics at the Domestic T2 created an increase in glass bottle recycling from catering facilities in 2013.
Food rescue	BAC has worked with Qantas Catering to establish a food rescue collection service with OzHarvest to provide food items to the Wesley Mission Brisbane since 2012.
Development of the Brisbane Airport Waste Management Strategy	BAC finalised the Brisbane Airport Waste Management Strategy in 2011 which aims to align BAC's waste management practices with its Environment and Sustainability Policy.
Introduction of public space recycling	Public space recycling was introduced to Level 4 of the International T1 (departures), the common user area of the Domestic T2, and to the Skygate precinct in November 2011. This was a project initiated through the Packaging Stewardship Forum.

Five-Year Action Plan

	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Continue to encourage airport food retailers to donate food waste to the Wesley Mission Brisbane via Oz Harvest	Ongoing	Reduction in food waste	DoIRD Annual Environment Report
2	Identify operational waste management opportunities across BAC controlled operations	Ongoing	Waste avoidance/ reduction	
3	Develop a waste minimisation strategy for the Domestic T2 through tenant engagement	2014 – 2016	Waste avoidance/ reduction	
4	Update the Development Control Document and Airport Technical Guidelines to encompass waste management of construction activities	2015 – 2016	Improved management of construction waste through contracts and/or CEMPs across all construction activities at Brisbane Airport	
5	Investigate opportunities to reuse recycled building materials	2017 – 2018	Waste avoidance/reduction	

13.11 Water Management

OVERALL GOAL

Maximise water usage efficiencies and mitigate potential impacts on the water quality of surrounding ecosystems through the application of sustainable water management practices.

OBJECTIVES

- Proactively promote and manage water security in every facet of BAC activities including service delivery, development and using water 'fit for purpose'
- Rigorously maintain water quality on or adjacent to the airport precinct through minimising any potential impacts from Brisbane Airport operations
- Continue to monitor and manage identified and suspected groundwater contaminated sites in accordance with regulatory requirements
- Minimise and treat stormwater runoff from BAC aeronautical and development activities to ameliorate risk to the airport's and neighbouring ecosystems.

BACKGROUND

BAC has developed a Water Strategy and Water Policy committing to the efficient use of water 'fit for purpose'. Currently the airport utilises a variety of alternative water types which are used within several facets of operations.

Brisbane Airport is located in the lower Brisbane River and Kedron Brook catchments. Both catchments flow into Moreton Bay – a wetland of international importance. These catchments have been highly modified as a consequence of urban and commercial development with large areas of riparian vegetation removed from the waterways. This highly modified catchment environment contributes to the water quality observed within creeks and channels around Brisbane Airport. Since 1999 BAC has implemented a targeted Water Quality Monitoring Program (WQMP) to assess surface water, groundwater and stormwater quality across airport.

CURRENT MANAGEMENT PRACTICES

Water Efficiency

BAC has undertaken a number of investigations of potable water usage, metering efficiency and initiatives to reduce potable water usage across the airport. It currently manages several water sources including stormwater (overland flows) captured and stored in freshwater lakes; rainwater harvested from roof spaces and stored in tanks; Class 'A' recycled water supplied by Queensland Urban Utilities (QUU); and Class 'A+' recycled water produced via an on-site nano-filtration plant.

BAC minimises potable water use on-site by using the following approaches:

- Potable water is only to be used for human consumption, cleaning, food manufacturing or preparation purposes
- Irrigation water is acquired from non-potable sources where possible
- Water for dust suppression at construction sites only utilises non potable sources
- Toilet flushing and amenities utilise non-potable water sources where possible.

WATER QUALITY MONITORING

Surface Water

Various activities at the airport have the potential to influence water quality of surrounding waterways, including:

- Spills from aircraft and maintenance activities
- Urban wastewater discharge
- Construction activities
- Landscape maintenance activities
- Bulk liquids and hazardous materials storage
- Fire training exercises
- Hangar fire fighting foam discharges.

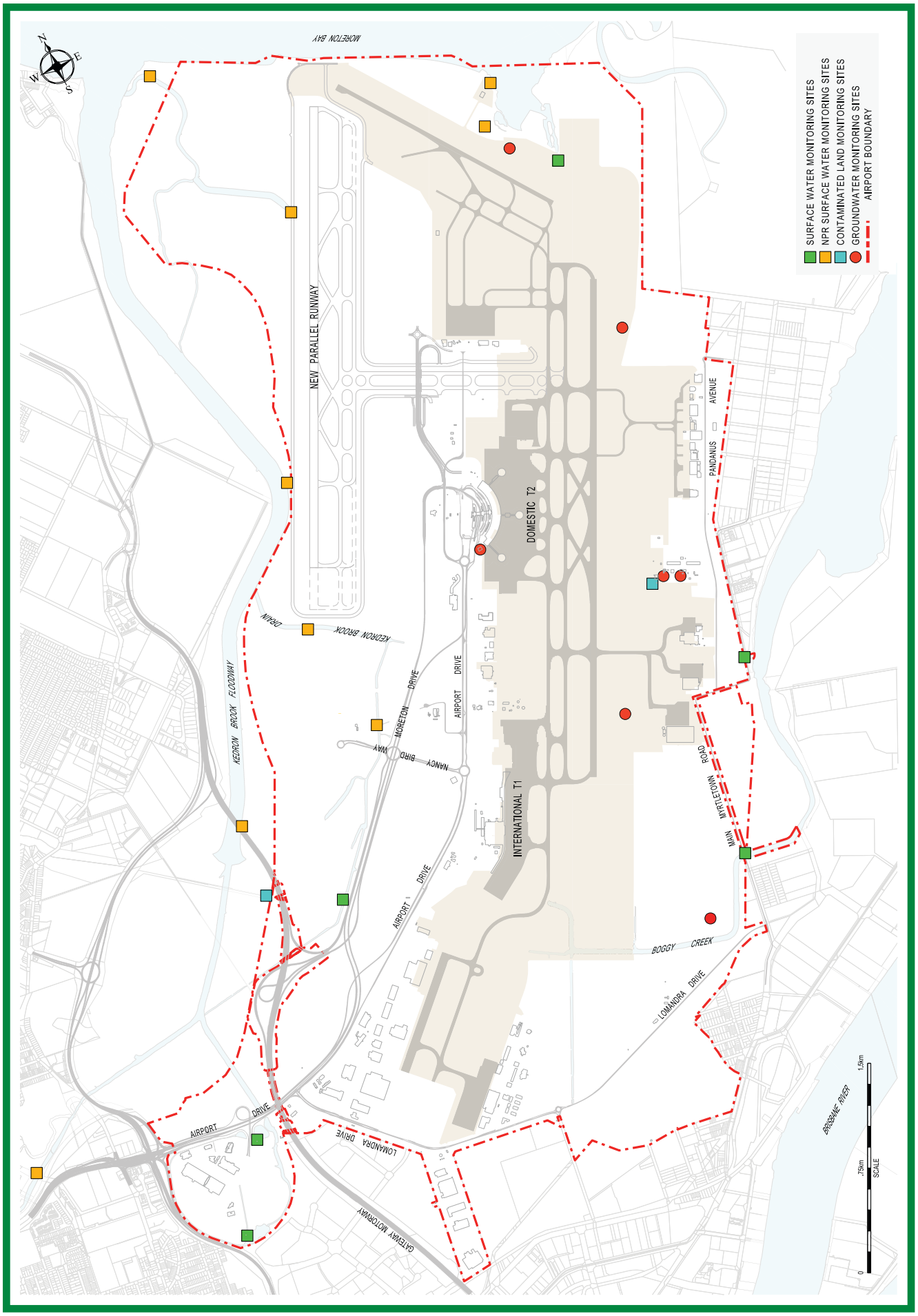
BAC monitors water quality across four broad catchments within airport land. These catchments are defined as Kedron Brook (including Schultz Canal and Landers Pocket drain), Serpentine Inlet, Boggy Creek and the freshwater lakes. Terrain on airport land is flat with an elevation of approximately two metres above sea level, draining into Kedron Brook and the lower Brisbane River catchments, then out to Moreton Bay. Refer to Figure 13.3 for the location of water monitoring sites across Brisbane Airport.

Groundwater

Groundwater monitoring is undertaken in accordance with the WQMP. Groundwater monitoring provides BAC with data to assist in decision making for improved water quality management, particularly during development activities. Much of the groundwater on airport is tidally influenced given the airport's proximity to Moreton Bay.

Groundwater monitoring is undertaken adjacent to USTs and selected contaminated sites. Analysis of groundwater is undertaken in consideration of the contaminant risk. Additional groundwater monitoring may be conducted across a range of construction sites as a means of monitoring the effectiveness of controls for the treatment of acid sulfate soils.

FIGURE 13.3: WATER MONITORING LOCATIONS



Stormwater Management

Various activities at the airport have the potential to influence stormwater quality entering surrounding waterways, including:

- Spills from aircraft and handling equipment, servicing, refuelling and maintenance
- Urban runoff from roads and hardstand areas
- Construction projects with major earthworks
- Airport facilities spills and overflows
- Spills associated with BAC tenants and properties.

BAC has developed an Airside Stormwater Quality Management Strategy (ASQMS) and a Landside Stormwater Quality Management Strategy (LSQMS) to ensure reasonable and practicable measures are implemented to improve the quality of stormwater runoff from developments.

STORMWATER

BAC endeavours to improve stormwater runoff quality across the airport.

Stormwater is collected for use in construction and operations to reduce on-airport water consumption

Recent Achievements	
Water Consumption	
Conversion of cooling towers at the terminals to use non-potable water	In 2009, cooling towers at the International T1 and Domestic T2 have utilised non-potable water.
Implementation of BAC's Water Strategy	The BAC Water Strategy (2010) outlines a comprehensive strategy for achieving water security at Brisbane Airport.
Research and innovation	The development of a Water Master Plan was undertaken in conjunction with QUT and completed in December 2010.
Water Quality	
Healthy Waterways Communities Award	Since 2008, BAC has sponsored the Queensland Healthy Waterways Communities Award.
Implementation and review of the LSQMS and ASQMS strategies	These strategies (2011) ensure Water Sensitive Urban Design (WSUD) principles are incorporated into new developments to reduce water pollution entering waterways.

Five-Year Action Plan

	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Expand recycled water network to new development areas	Ongoing	Increased use of recycled water across airport that is 'fit for purpose'	DoIRD Annual Environment Report
2	Continue the collection and analysis of surface water, stormwater and groundwater in-line with BAC's Water Quality Monitoring Program	Ongoing	Improvement of water quality entering estuarine and freshwater water bodies	
3	Continue to identify sponsorship opportunities	Ongoing	Promotion of Brisbane Airport's water quality objectives to the wider community	
4	Review BAC's maintenance program and landscape drawings for the management of WSUD treatment devices	2014 – 2015	Improved management of WSUD treatment devices	
5	Implement stormwater automatic sampling devices and inspections of high risk sites	2014 – 2015	Improve knowledge of stormwater quality on airport	
6	Investigate using alternative water sources for irrigation and dual reticulation purposes	2015 – 2016	Increased water security for Brisbane Airport	
7	Develop a database management system for water quality and groundwater monitoring	2016 – 2017	Improve management of water quality data for greater understanding of water quality across Brisbane Airport	
8	Undertake a gap analysis of the potable water network to identify areas to reduce consumption	2017 – 2018	Improved water security for Brisbane Airport	
9	Refine the airside and landside stormwater quality management strategies to be inclusive of new technologies and methods	2017 – 2018	Better knowledge of how WSUD can improve stormwater quality	

13.12 Soil Management

OVERALL GOAL

Minimise potential environmental and human health impacts through adhering to benchmark standard soil monitoring and management principles.

OBJECTIVES

- Undertake regular sampling and analysis to maintain soil quality at Brisbane Airport in strict accordance with the Airports (Environment Protection) Regulations
- Minimise the risk for potential soil pollution through enforcing adherence to best practice design construction principles for all new developments within the airport precinct
- Identify, monitor and manage known contaminated sites in strict accordance with designated risk ratings to minimise any potential environmental impacts.

BACKGROUND

With the proximity to Moreton Bay Marine Park, the management of soils is a critical component to the environmental management of Brisbane Airport. Soil quality also influences the construction and design methods undertaken across airport.

Potential sources of soil pollution at Brisbane Airport include previous activities, the importation of contaminated fill material, fuel spill or leakage, oil spill or leakage and other chemical spills occurring during operational activities at the airport.

LAND CONTAMINATION

A small number of sites were contaminated during the airport's construction from activities such as importation of contaminated fill materials. In the daily operation of the airport, soil pollution is mainly attributed to fuel and oil leaks or spills. Consistent with the Airports (Environment Protection) Regulations, BAC maintains a Contaminated Site Register (CSR) as an operational tool for the management of all suspected and confirmed contaminated sites on airport. BAC may adopt the reviewed NEPM based on future consultations with Commonwealth agencies.

POTENTIAL AND ACTUAL ACID SULFATE SOILS (PASS/AASS)

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

CURRENT MANAGEMENT PRACTICES

Land Contamination

BAC manages contaminated sites on a risk basis as listed in the CSR. The CSR is based on a three-tier system that identifies existing contaminated sites as either a low, moderate or high risk site. The risk assessment considers both environmental and human health risks. Refer to Figure 13.4 for locations of contaminated sites on Brisbane Airport.

Sites listed as high risk are assessed for reasonable and practical methods of remediation and management in consultation with the AEO and affected tenants (if any). BAC's management approach is to complete assessments of any high risk sites as soon as reasonably practicable. Where required, sites are monitored via routine groundwater sampling and analysis to identify the risk of off-site migration of contaminants. Any off-site transfer and disposal of contaminated soil is managed in accordance with the *Queensland Environmental Protection Act 1994*.

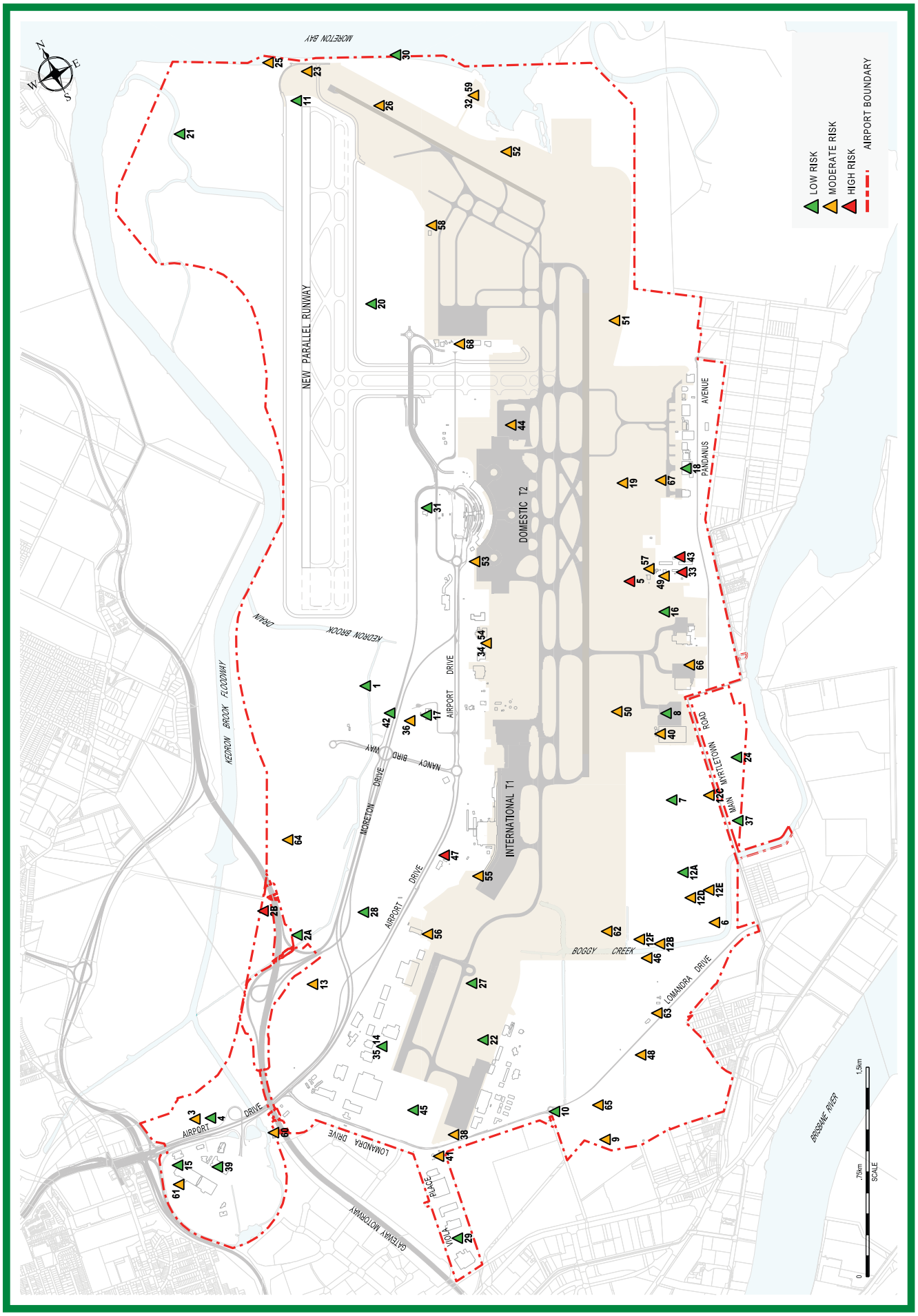
Asbestos in soil is managed under BAC's Corporate Standard on Asbestos Management in accordance with the Queensland Work Health and Safety Regulation 2011. This Corporate Standard, along with the Brisbane Airport Asbestos Register, serve as the current asbestos management plan and outline BAC's approach to known and suspected asbestos locations.

In addition to managing known areas of contamination, BAC monitors industry trends in order to better understand emerging contamination issues both at a national and international level. An emerging contamination issue has been identified surrounding the use and disposal of fluorosurfactants and their derivatives, a synthetic group of chemicals based on fluorine. Typically, fluorosurfactants have been found in stain repellents, polishes and paints or fire retarding products. The emergence of some fluorosurfactants as a contaminant is due to the toxicity, persistence and widespread occurrence in the environment. Current studies suggest there is potential for bioaccumulation of some flurosurfactants to occur in the environment. For this reason, certain fluorosurfactants have now been included in the Stockholm Convention on Persistent Organic Pollutants.

ACID SULFATE SOILS

For all airport developments the management of PASS/AASS conditions is required to be identified and assessed. Each development, through its site-specific CEMP details how PASS/AASS is to be managed and monitored during the construction phase. Refer to the Development Projects chapter for further information.

FIGURE 13.4: LOCATION OF CONTAMINATED SITES ON BRISBANE AIRPORT



Recent Achievements	
Contaminated site investigation and/or remediation	Eight sites have been investigated and/or remediated to mitigate any potential environmental or human health risks (2009-2013).
Review of the CSR	A further review was undertaken in 2013.
Development of site-specific EMPs for areas of contamination	BAC liaised with Airservices Australia about the development of site-specific EMPs for leased areas on Brisbane Airport (main fire station, satellite fire station and fire training ground) known to contain fluorosurfactants in soil or groundwater.
Corporate Standard on asbestos management	In 2013, BAC developed a Corporate Standard on asbestos management in compliance with the Work Health and Safety Regulation 2011. The Corporate Standard replaces the previous Asbestos Management Plan.

Five-Year Action Plan

	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Continue to monitor and remediate contaminated sites in accordance with the CSR, in consultation with the AEO	Ongoing	Minimise migration of contamination from existing contaminated sites or risks to human health	DoIRD Annual Environment Report
2	Continue to liaise with Airservices Australia regarding the implementation and review of site specific environmental management plans relating to fluorosurfactant contamination	Ongoing	Awareness of the extent of contamination and implementation of appropriate management plans	
3	Continuous review of the CSR to ensure appropriate short and long term management of sites in line with advancement in industry standards or technology including NEPM 2013, in consultation with the AEO	Ongoing	Revised CSR which takes into consideration improvements in management techniques	
4	Develop a UST Management Plan in accordance with Australian Standards	2014 – 2015	Minimise the potential for contamination to occur	

13.13 Biodiversity

OVERALL GOAL

Maintain a healthy and sustainable ecosystem which supports and fosters existing fauna and flora across the Brisbane Airport through promoting and applying a conservation-based biodiversity management strategy.

OBJECTIVES

- Continue regular surveillance and monitoring to enhance sustainability of all fauna and flora located within Brisbane Airport
- Maintain best practice management of land parcels designated as ESA within the airport precinct
- Continue to manage a Wildlife Hazard Management Plan (WHMP) and minimise habitat for selected species to ameliorate potential risks to aircraft safety.

BACKGROUND

Since privatisation, numerous ecological investigations have been undertaken to guide decision-making and ensure that biodiversity is managed in the local, regional, national, and international context.

FLORA ASSESSMENT

Flora assessments identified vegetation communities within Brisbane Airport (refer Figure 13.5) which include:

- Casuarina plantations
- Open grasslands
- Mangroves
- Saltmarsh
- Freshwater wetlands and sedge communities
- Coastal dunes and foreshores.

Previous flora studies concluded conservation values 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.

Given the previous assessments completed and included in the 1999, 2004 and 2009 AESs for Brisbane Airport limited areas of ecological value have been identified. The intention for future biodiversity management is to focus the management on the Biodiversity Zone and associated ESAs, rather than site wide assessments.

FAUNA ASSESSMENT

Fauna assessments, including shorebird monitoring surveys, have identified a variety of terrestrial vertebrate species occurring within or near Brisbane Airport.

The Square-Tailed Kite, Black-necked stork, Grey goshawk, Lewin's Rail, Eastern Curlew and Little Tern are listed as 'Near Threatened' under state legislation, whilst the Australasian bittern is listed as 'Endangered' under Commonweath legisation.

Species have been attributed a degree of conservation significance under international, Commonwealth, state and local levels (refer to Appendix C).

Aquatic fauna surveys identified species of finfish and benthic invertebrates within channels and associated wetlands (mangrove and saltmarsh areas). Species observed were not listed as 'threatened' under Commonwealth or state legislation.

BIODIVERSITY ZONE

Brisbane Airport has designated a biodiversity zone to maintain sites of high biodiversity conservation value while considering the ongoing master planning for airport developments such as the NPR, and commercial development precincts. In addition, a forty metre buffer zone has been established around key areas of the biodiversity zone to restrict commercial development and conserve biodiversity features. Environmental assessments of potential impacts may be undertaken for proposed projects within the biodiversity zone, in particular, the proposed road corridor near the Central Parking Area. The implementation of the Biodiversity Management Strategy, which includes the monitoring and management of flora and fauna, will continue to inform future decision making processes. Key biodiversity elements to be maintained include:

- Mangrove and saltmarsh assemblages and communities
- Phragmites wetland/unmanaged grasslands and fauna assemblages. These grasslands retain species such as the 'Lewin's Rail'
- Intertidal sandflats provide feeding grounds for wader birds, and RAMSAR listed migratory shorebirds
- Casuarina plantations.

In order to conserve these key biodiversity features, BAC has allocated approximately 285 hectares of its landmass (equating to approximately ten percent of the airport site) as a Biodiversity Zone in the 2009 Master Plan. This zone stretches along Kedron Brook floodway in the west to the Bramble Bay foreshore in the north. Refer to Figures 13.6 and 13.7.

ENVIRONMENTALLY SIGNIFICANT AREAS

BAC manages four ESAs:

- Jubilee Creek / Serpentine Inlet ESA
- Jackson's Creek ESA
- Pinkenba ESA
- Lewin's Rail ESA.

FIGURE 13.5: VEGETATION COMMUNITIES

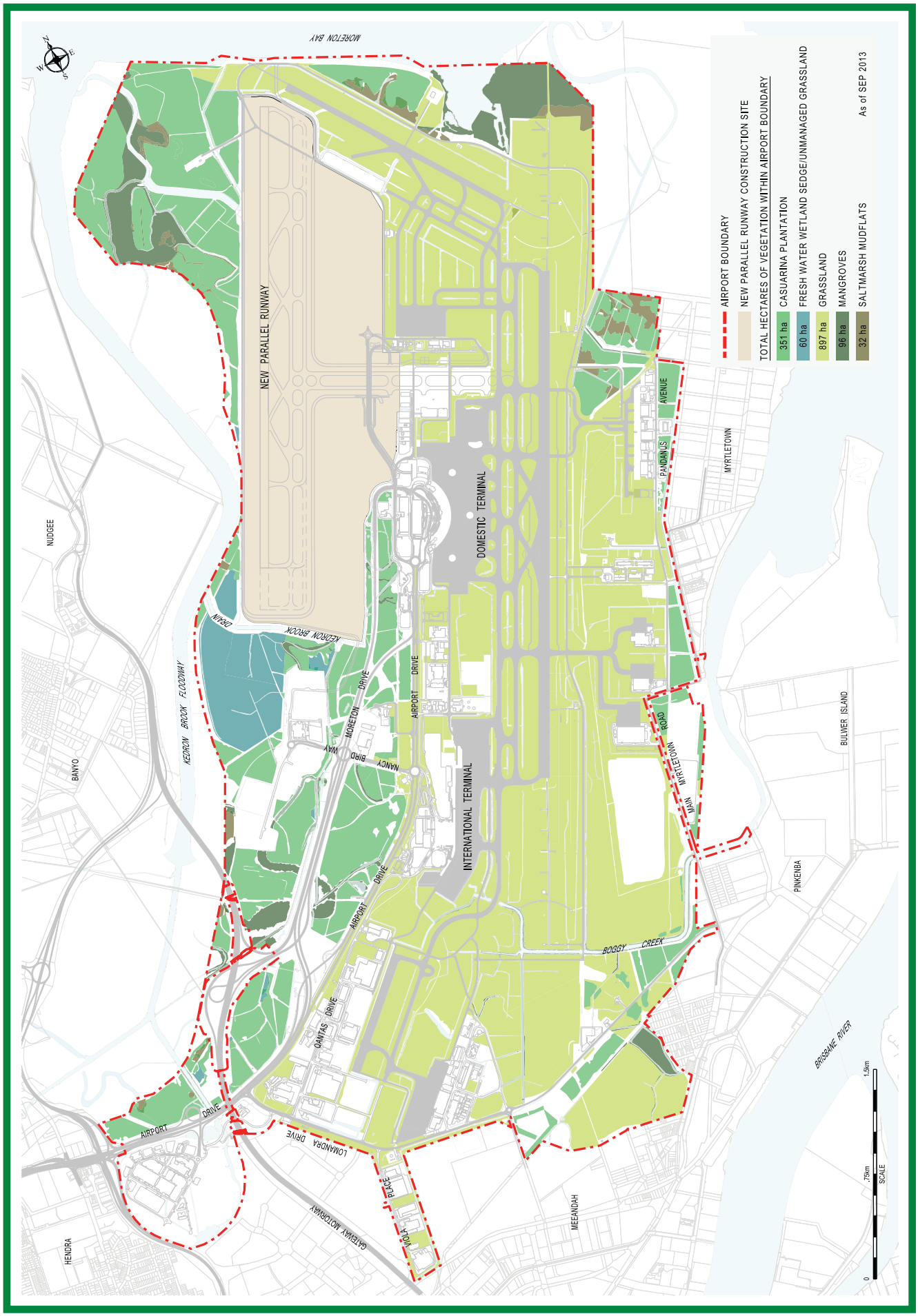
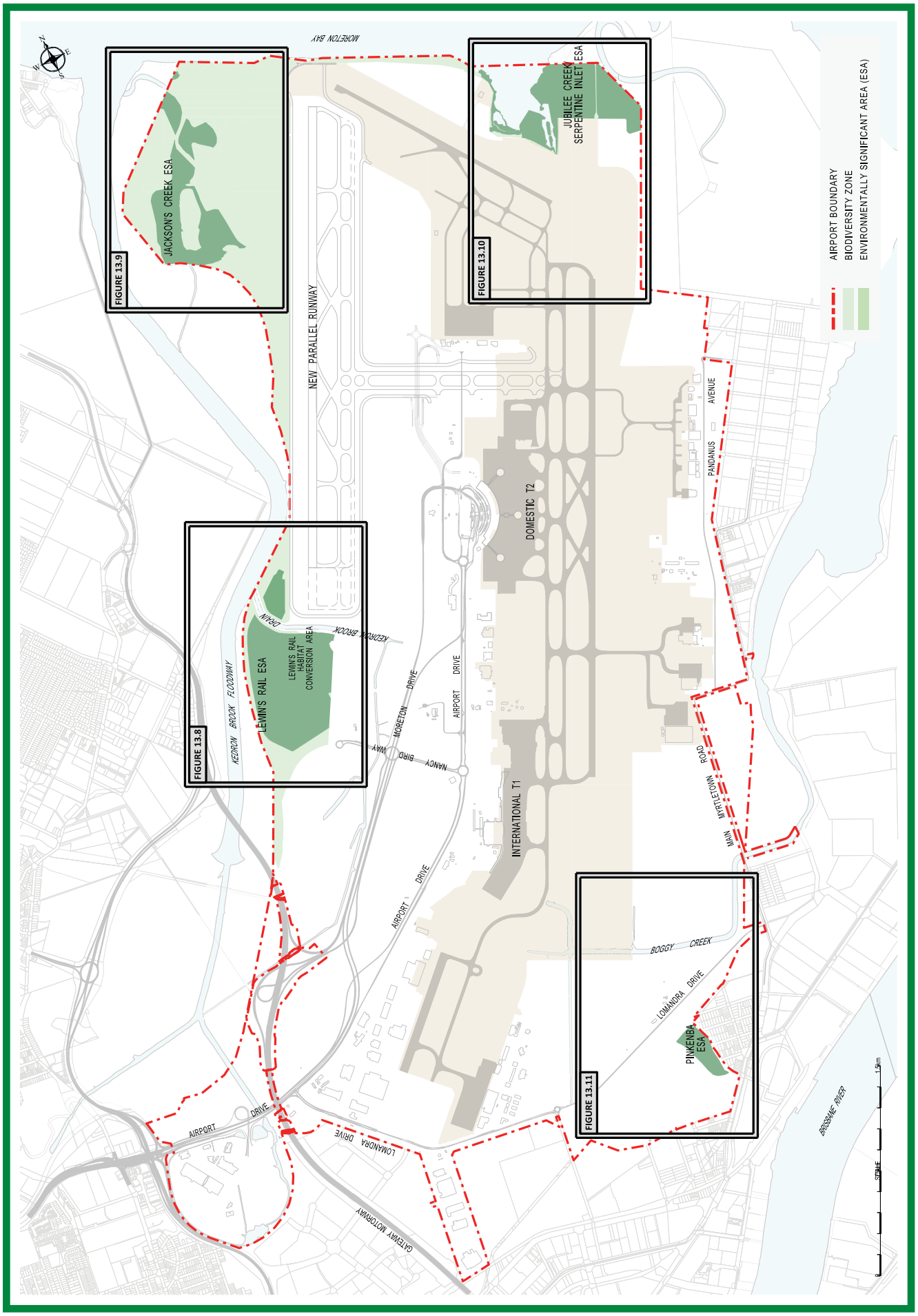


FIGURE 13.6: BIODIVERSITY ZONE AND ESAs



In 2013, the NPR project commenced the conversion of 11 hectares of casuarina plantation beside the Lewin's Rail ESA to provide additional habitat for the Lewin's Rail in compliance with project approval conditions. This area is situated in the existing Biodiversity Zone and will be incorporated into the Lewin's Rail ESA in the next (2019) Master Plan, subject to completion of site works and confirmation of Lewin's Rail presence. Ultimately the extent of the ESA will increase from 38 to 49 hectares. This area is shown in Figure 13.8.

BAC has completed extensive surveys of each of the ESAs to determine the composition of each area and this survey work also is reflected in Figures 13.8 to 13.11.

BIODIVERSITY MANAGEMENT STRATEGY

In order to ensure appropriate management of the ESAs across Brisbane Airport, BAC developed a Biodiversity Management Strategy (BMS). The strategy aims to:

- Improve operational and construction activities that may be detrimental to species, ecological communities or ecological processes on airport land
- Implement strategies to improve the airport's degraded biodiversity and ecological processes
- Retain significant biodiversity values whilst simultaneously reducing the risk of wildlife strikes.

Within the risk management framework of BAC's EMS, the focus and fundamental premise underpinning this strategy is for the priority of environmental management is to be given to those areas allocated the highest degree of biodiversity value.

This in turn means that areas not prescribed significant ecological value will ultimately be developed. The priority for environmental management in these instances becomes the minimization of environmental impacts associated with the development. This may occur through building design, construction site management and sound environmental management throughout the life of the building's operation. Furthermore a baseline environmental assessment is conducted to consider the broad range of environmental aspects that could be impacted when development of that site occurs. This assessment happens prior to construction activity commencing.

WILDLIFE HAZARD MANAGEMENT PLAN

BAC has implemented a WHMP to provide a consistent approach to managing wildlife strike risk to aircraft. The function of the WHMP is to define the risk that wildlife pose to air traffic at Brisbane Airport and to set objectives, performance indicators and procedures in place for the systematic management of that risk. Specifically the WHMP is to:

- Target high and moderate risk species and habitats on and off the airport
- Ensure compliance with all relevant airport operational, safety and environmental legislation and regulations
- Ensure that adequate systems are in place to define roles, responsibilities and procedures for managing wildlife risks
- Define the methods by which wildlife hazards are managed and reported
- To analyse wildlife hazard data collected and identify trends and relationships in order to focus mitigation efforts on key problem areas
- Develop performance goals and targets for management of wildlife issues and outline how this will be implemented and reviewed
- To continue to research/improve non-lethal management methods to reduce the need for lethal control of wildlife.

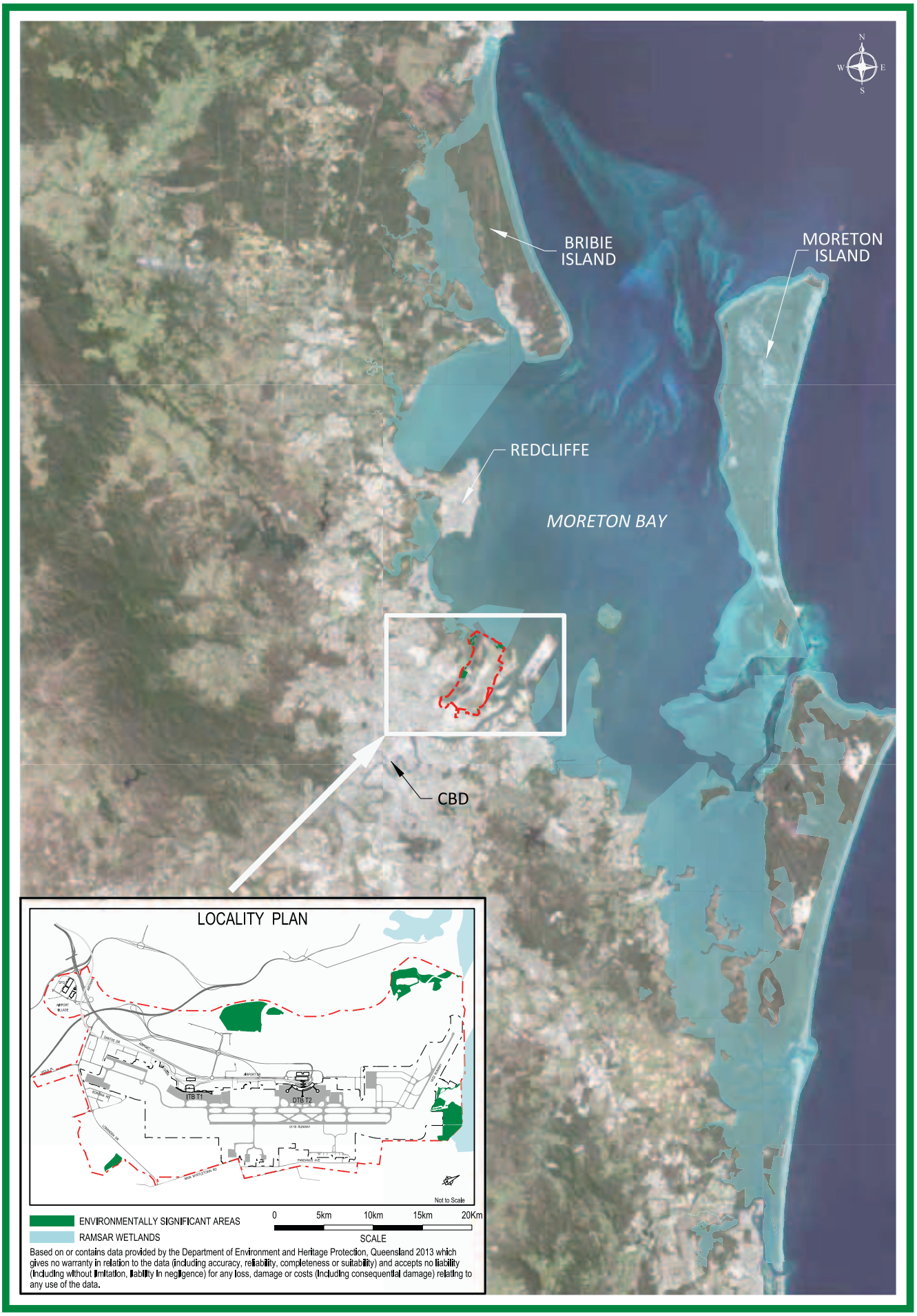
The plan meets requirements of the Civil Aviation Safety Regulations 1998 (CASR 1998), Manual of Standards Part 139, Chapter 10.14, and the Civil Aviation Safety Authority (CASA) Advisory Circular 139-26 (0) on Wildlife Hazard Management at Aerodromes. This plan is reflective of guidance material prepared by the National Airports Safeguarding Advisory Group (NASAG). BAC continues to redefine and improve specific actions in reducing airside operational risks.

CONSTRUCTION IN THE VICINITY OF THE BIODIVERSITY ZONE

Any construction activity in the Central Parking Area may require an environmental assessment to identify aspects, impacts and management/ mitigation strategies. Typical environmental issues that may require management include flora and fauna, water quality, acid sulphate soils, air quality (including dust) and sediment and erosion control. Implementation of the Biodiversity Management Strategy will continue to provide BAC with an assessment of flora and fauna within the biodiversity zone and environmentally significant areas to inform future decision making processes.

Any proposed developments, should through planning and design, avoid detrimental impacts on significant vegetation communities and habitats, but where this is not possible the impacts should be minimized and fauna managed by suitably qualified personnel i.e. spotter/catcher.

FIGURE 13.7: REGIONAL CONTEXT OF THE ENVIRONMENT AT BRISBANE AIRPORT



13 AIRPORT ENVIRONMENT STRATEGY

FIGURE 13.8: LEWIN'S RAIL ESA

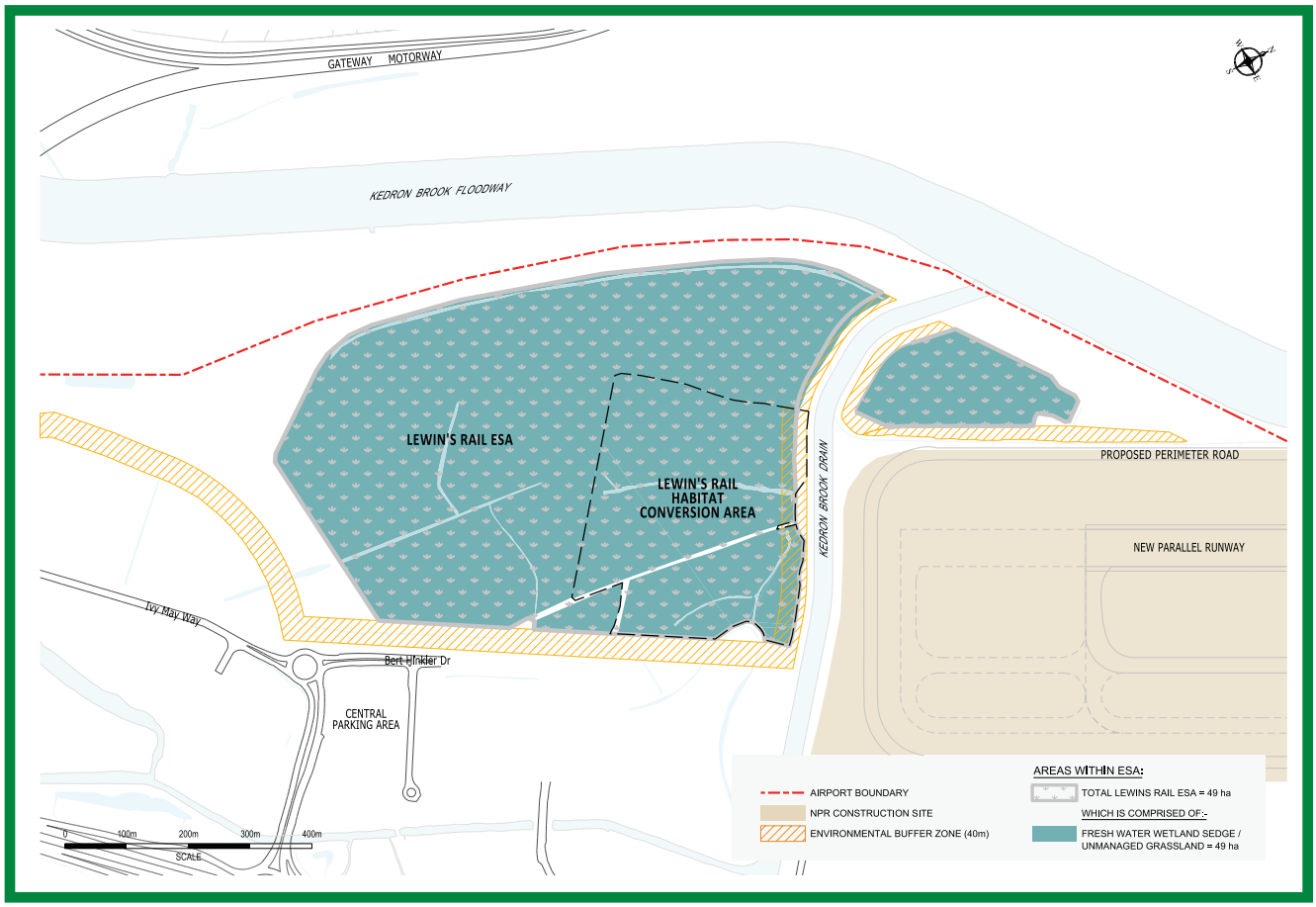


FIGURE 13.9: JACKSON'S CREEK ESA

FIGURE 13.10: JUBILEE CREEK/SERPENTINE INLET ESA

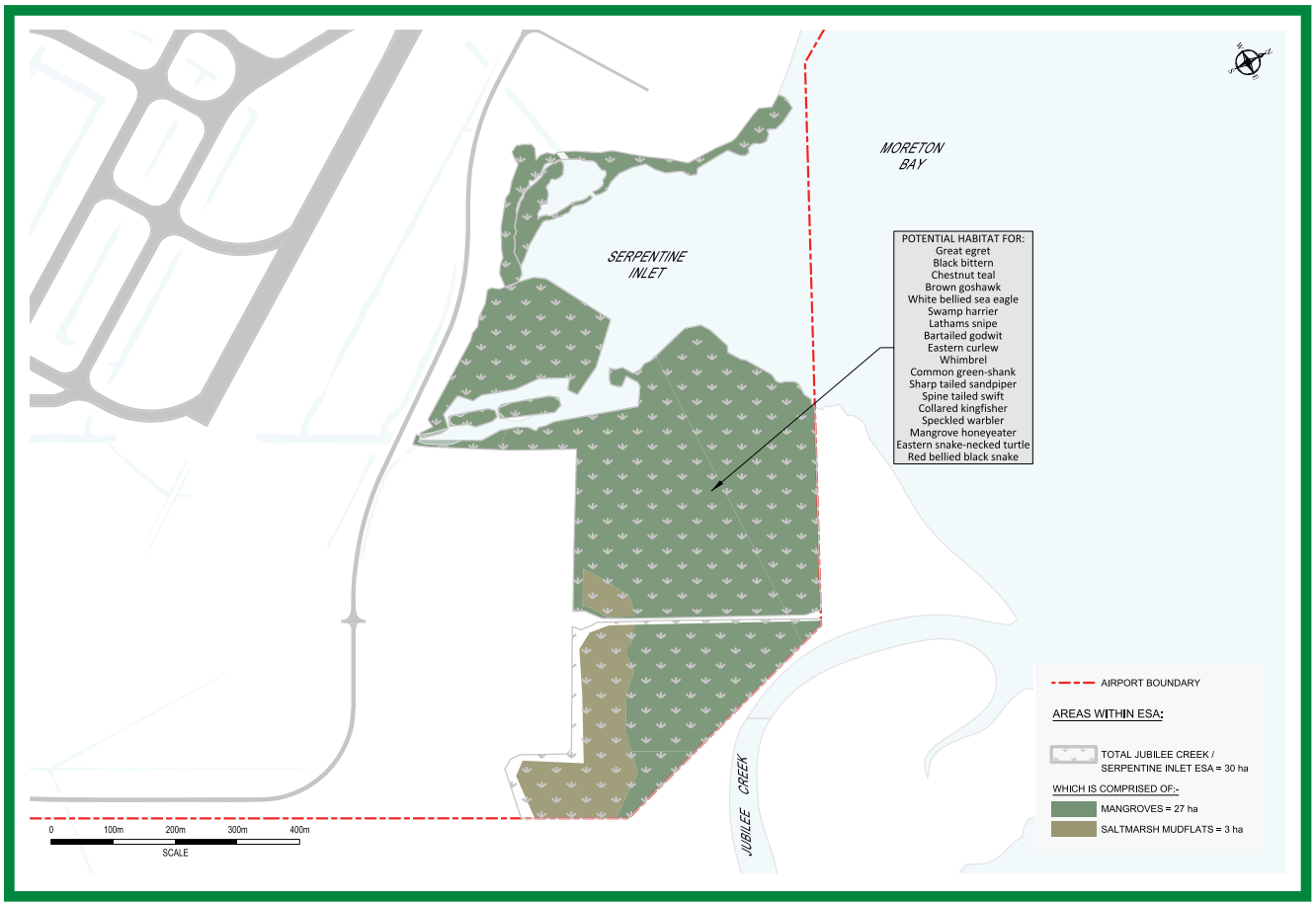
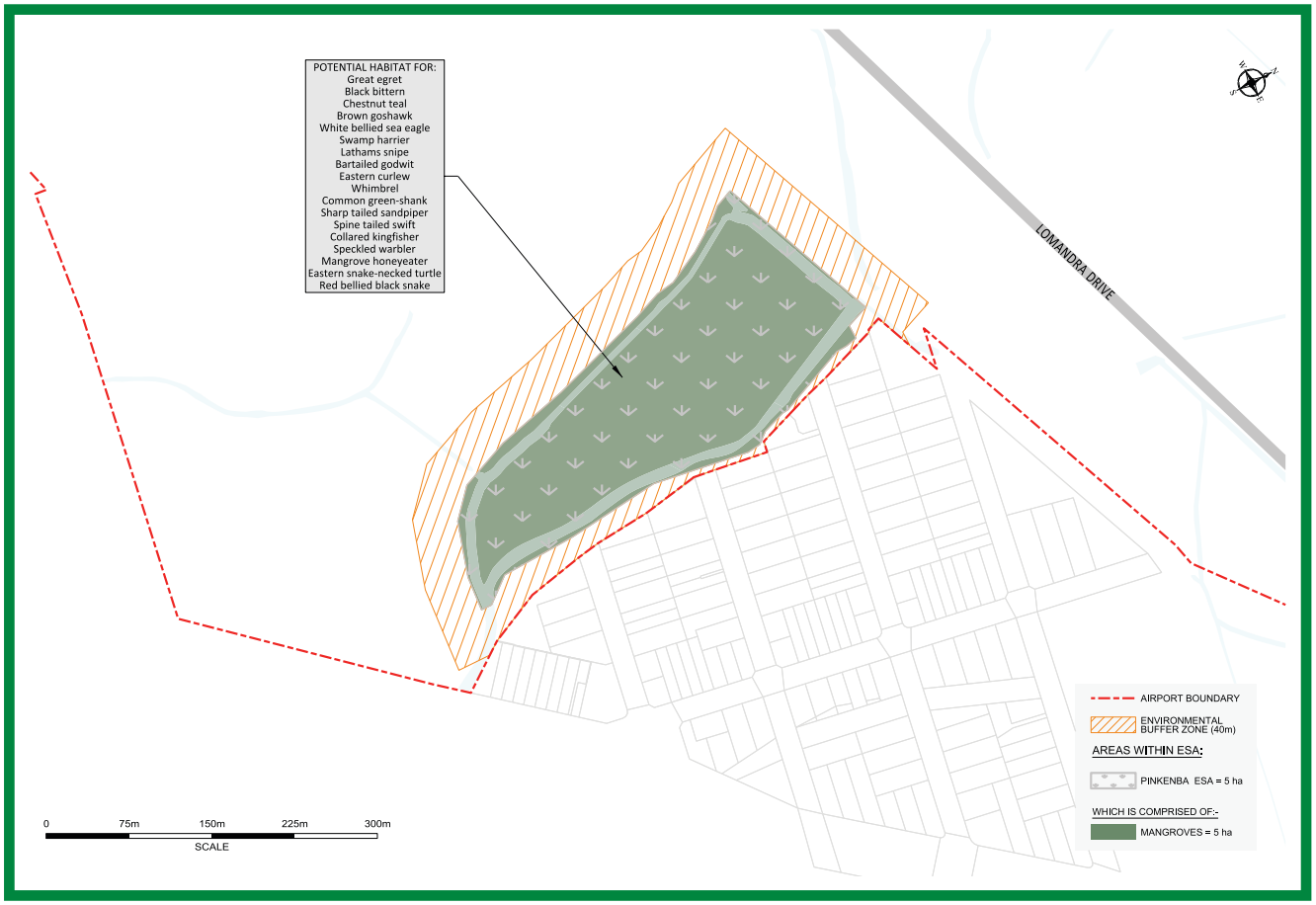


FIGURE 13.11: PINKENBA ESA



Recent Achievements	
Terrestrial fauna benchmarking study	A terrestrial fauna benchmarking study has been undertaken in the Biodiversity Zone and Lewin's Rail ESA over the spring and summer of 2013 – 2014 to assess the effectiveness of existing measures to protect these habitats.
Aquatic fauna benchmarking study	An aquatic fauna benchmarking study was undertaken in the three estuarine ESAs over spring and summer of 2012 – 2013.
Sponsorship funding	BAC has committed to a three-year sponsorship funding agreement with the Wildlife Preservation Society of Queensland (WPSQ) for their Seagrass and Mangrove Watch community monitoring programs. Sponsorship funding has also been committed to the Nudgee Beach Environmental Education Centre (NBEEC) as part of the NPR project.
Habitat conversion	Eleven hectares of casuarina plantation is being converted to Lewin's Rail habitat as part of the NPR project. Ongoing monitoring of this area post establishment will be undertaken.
Weed Management Strategy (2012)	BAC has developed the Brisbane Airport Weed Management Strategy to provide a compliance framework to mitigate the potential risk of weed invasion where practicable.
Drainage improvement works at the Pinkenba ESA	Drainage works were undertaken in 2009 and 2010 to improve tidal flushing and mangrove health at the Pinkenba ESA.
Pest control programs	Implementation of feral animal, weed control and mosquito control programs covering all habitat areas across the airport has continued.

The Lewin's Rail is protected at Brisbane Airport

Five-Year Action Plan				
	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Implement the BMS to effectively manage flora and fauna across the airport	Ongoing	Appropriately manage airport land	DoIRD Annual Environment Report
2	Continue to undertake drain maintenance to improve tidal flushing, reduce mosquito breeding, odour issues and improve water quality	Ongoing	Improved water quality and reduction in mosquito breeding habitat	
3	Develop a formal agreement with Brisbane City Council (BCC) to cooperatively manage adjoining conservation areas and streamline environmental protection works	2014 – 2015	Enhanced stakeholder engagement and consequent biodiversity outcomes	
4	Investigate the long-term viability of Lewin's Rail population density and habitat	2015 – 2016	Forecasting long-term biodiversity management to assess population numbers, size and habitat	
5	Review drainage patterns within the Lewin's Rail ESA	2016 – 2017	Further improvements determining drainage and overland flow configuration (non-flood events)	
6	Engage with the NBEEC and BCC regarding the possibility of a joint environmental education/ interpretation theme to promote Kedron Brook floodway biodiversity values	2016 – 2018	Enhanced community experience of Brisbane Airport and Boondall Wetlands biodiversity values	
7	Establish a rapid assessment monitoring program for casuarina plantation health	2016 – 2018	Monitoring data to inform management decisions	

13.14 Noise

OVERALL GOAL

Minimise impacts on the amenity of all Brisbane Airport stakeholders through the application of best practice management for noise mitigation.

OBJECTIVES

- Maintain detailed assessments of all new airport developments to identify and minimise potential noise impacts during their design, construction and operation phases
- Continue to rigorously comply with all relevant noise related legislation, standards and/or guidelines to effectively manage noise generated from ground-based aeronautical operations.

BACKGROUND

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

- Land transport sources such as rail and road traffic
- Construction and demolition
- Operation of plant and machinery
- Operation of fixed audible alarm and warning systems
- Ground-based aircraft operations which can include:
  - Operation of an auxiliary power unit of an aircraft
  - Ground-based aircraft running
  - Test-bed running of aircraft engines removed from aircraft (ground-running).

The Airports (Environment Protection) Regulations 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. These stages of aircraft operation are addressed by the *Air Services Act 1995* and Air Navigation (Aircraft Noise) Regulations 1984.

CURRENT MANAGEMENT PRACTICES

The Brisbane Airport Development Control Document (DCD) and Airport Technical Guidelines outline the requirements for commercial and aeronautical developments to incorporate noise sensitive design and attenuation measures. Project-specific CEMPs continue to demonstrate how construction generated noise is managed, and the proposed mitigation strategies implemented to ensure construction-generated noise is minimised where practicable.

Noise generated from aircraft ground running activities continues to be managed in accordance with BAC's Ground-Running Procedure, as per the Brisbane Airport Aerodrome Manual. All ground-running events are recorded by the Airside Operations Supervisor on duty in BAC's Toolbox Database. Details that are recorded for each ground run event include the date, duration start and finish, aircraft type, aircraft registration, company/operator name, location and power setting.

Recent Achievements	
Development of the Brisbane Airport Landside Noise Model	This model assists with the prediction of potential noise impacts from future developments on airport (2011).
Incorporation of BAC's Noise Impact Assessment Policy into the Development Control Document	The Noise Impact Assessment Policy outlines how various noise impacts should be considered when determining the level of noise assessment and any suitable mitigation measures required for new developments (2011).

Five-Year Action Plan

	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Ensure new developments include noise attenuation measures where required as per the DCD and Airport Technical Guidelines requirements	Ongoing	Noise attenuation measures are included in the design of new buildings where required	Airport approval process
2	Continue to review the operational effectiveness of the Brisbane Airport Ground Running Procedure to inform future planning	Ongoing	Minimisation of impacts to tenants and the local community	DoIRD Annual Environment Report
3	Continue to monitor, record and act on noise complaints caused by ground based activities	Ongoing	Minimisation of impacts to tenants and the local community	

13.15 Heritage

OVERALL GOAL

Acknowledge and preserve the significance of indigenous and non-indigenous history as a key part of Brisbane Airport's cultural fabric.

OBJECTIVES

- Implement strategies to identify, protect and conserve known and potential heritage items, sites and places
- Ensure identified sites are registered on Brisbane Airport's Heritage Register
- Ensure identified indigenous heritage sites located on airport land are registered on the Queensland Cultural Heritage Register and Database.

BACKGROUND

Cultural heritage is strongly tied to Aboriginal and Torres Strait Islanders connection to the land, and includes:

- Traditions, ideas, skills or rituals, which are passed through generations
- Expressive activities (language, music, dance and drama)
- Immovable areas or objects (sites, landscapes or areas of significance to a particular group)
- Movable objects (artefacts).

The Brisbane Airport site was once part of a wider natural environment providing Aboriginal people with a rich variety of food, resources and useful materials, and a sound base for a permanent or semi-permanent population.

European settlement of the area began with a convict women's prison and settlement in the location of the former Eagle Farm Airport. The current airport site was later used for farming and included the former township of Cribb Island. It was also used for military purposes during World War II.

SUMMARY OF KNOWN AND POTENTIAL HERITAGE SITES AND PLACES

Indigenous Cultural Heritage

Due to the long-term historic (non-Indigenous) land use from the beginning of settlement, until the landscape modifications of the airport development in the 1980s, the potential of surface archaeological material surviving is unlikely.

Two Indigenous heritage sites on airport land are listed on the Queensland Cultural Heritage Register and Database, and another Indigenous site is thought to exist based on community advice. A fourth Indigenous site is located in an undisclosed relocation site associated with the NPR Cultural Heritage Management Plan (CHMP).

The nearby off-airport items/places are also recorded on Brisbane Airport's Heritage Register, which accounts for the additional site numbers recorded in the following registers.

The Airport Burial Site, the Serpentine Creek Mouth Camp and the relocation site are located within BAC's Biodiversity Zone (refer to Figure 13.12 and Table 13.4). Note that the relocation site may contain suspected items of cultural heritage value which will be managed in accordance with the NPR CHMP. Whereas the possible bora ring site may be located in an undeveloped area adjacent to the Pinkenba ESA.

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. Due to the large scale modifications of the environment during the development of the airport in the 1980s, many of these sites have disappeared, including the former township of Cribb Island. There are no physical items listed on the Register of the National Estate or the Queensland Heritage Register situated within the current Brisbane Airport boundary. However three non-Indigenous sites are currently identified on Airport land (refer to Figure 13.12 and Table 13.5).

BAC complies with all heritage related legislation to effectively manage heritage issues across Brisbane Airport.

TABLE 13.4: REGISTER OF INDIGENOUS HERITAGE SITES KNOWN TO EXIST ON BRISBANE AIRPORT

Site No	Site ID	Co-ordinates UTM WGS 84 56J		Comment
		Easting	Northing	
1	Airport Burial	511705	6974687	State Registered Site
4	Serpentine Creek Mouth Camp	513206	6973790	State Registered Site
8	Possible Bora Ring	Unconfirmed location		Community Advice
14	Relocation Site	Location withheld		CHMP Relocation Site

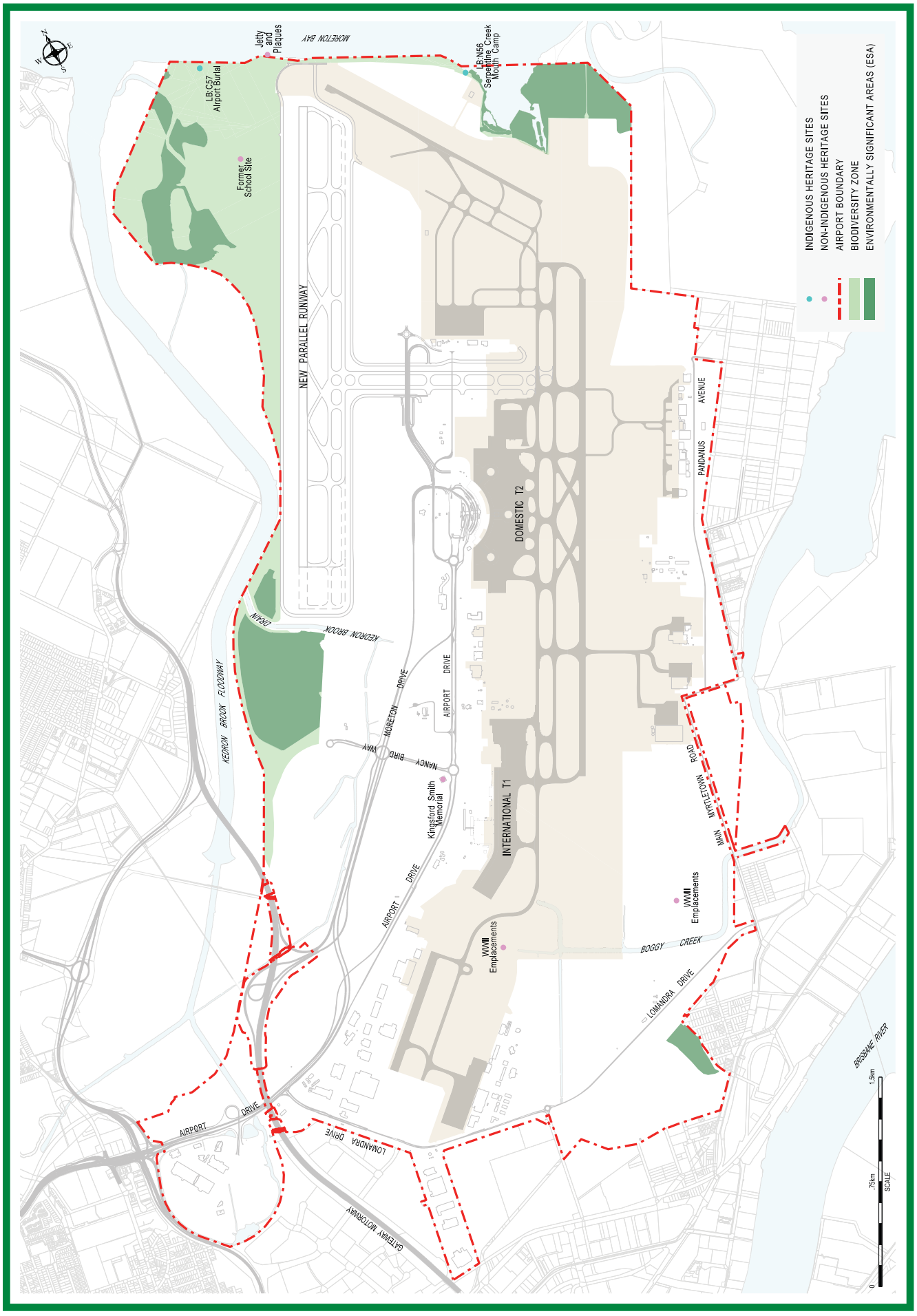
TABLE 13.5: REGISTER OF NON-INDIGENOUS HERITAGE SITES KNOWN TO EXIST ON BRISBANE AIRPORT

Site No	Site ID	Co-ordinates MGA 94 56		Comment
		Easting	Northing	
9	Jetty and Plaques (former Cribb Island)	512004	6974513	Recorded on Site Inspection
10	Former Cribb Island State School Site	511492	6973936	Potential Archaeological Site
11	Kingsford Smith Memorial	510759	6969320	The Southern Cross Aircraft Warehousing and Display Agreement exists between the Australian Government and BAC

1

1 Sir Charles Kingsford Smith's "Southern Cross" is a major tourist attraction at Brisbane Airport.

FIGURE 13.12: LOCATION OF KNOWN HERITAGE SITES ON BRISBANE AIRPORT



The area formerly known as Cribb Island was purchased by J.G. Cribb in 1863 who later sold a portion of the area to James Jackson. This area then became a farming community known as Jackson's Estate. Two sites of non-Indigenous heritage occur in this area:

- The former Cribb Island jetty and plaques
- The former Cribb Island State School.

The structure of the old Cribb Island jetty was retained after the development of the existing airport site although it is no longer structurally sound. Members of the community placed plaques at the site to commemorate family members who once lived in the area. Cribb Island State School opened in 1919 and closed in 1979 as a result of the development of the existing airport site. After the site was demolished, the Brisbane Airport Terminal Area Radar (TAR) was situated on the same site.

The Kingsford-Smith Memorial (KSM) is housed at Brisbane Airport and is a purpose built facility that conserves artefacts relating to Sir Charles Kingsford-Smith, including the aircraft 'Southern Cross', which is on display to the public. The 'Southern Cross' is the name of the Fokker Trimotor Monoplane which in 1928 was flown by Australian aviator Sir Charles Kingsford-Smith and his crew in the first ever trans-Pacific flight to Australia from the mainland United States of America, a route of approximately 11,670 km.

The 'Southern Cross' is preserved in a special glass hangar memorial and is managed in accordance with the 'Southern Cross Aircraft Warehousing and Display Agreement' between the Australian Government and BAC. This agreement outlines the warehousing, maintenance and security requirements BAC must undertake to conserve its heritage significance and to ensure its accessibility to the public.

SITES PREVIOUSLY IDENTIFIED WHICH NO LONGER EXIST

Two previously identified sites are understood to have been destroyed prior to airport privatisation in 1997. Both of these site were relics from World War II (refer to Figure 13.12 and Table 13.6 for detail). These relics included the 388th heavy anti-aircraft (HAA) battery and a machine gun post.

TABLE 13.6: REGISTER OF NON-INDIGENOUS HERITAGE SITES DESTROYED PRIOR TO AIRPORT PRIVATISATION

Site No	Site ID	Co-ordinates UTM WGS 84 56J		Type	Comment
12	388th HAA battery	N/A	N/A	Historic	No longer existing
13	Machine gun post	N/A	N/A	Historic	No longer existing

Recent Achievements	
Consultation with traditional owners	A consultation program with traditional owners commenced in 2013 regarding the up-coming development of the Brisbane Airport Heritage Management Plan, which includes a review of Brisbane Airport's Heritage Register.
Restoration Works to the 'Southern Cross'	BAC commissioned the Queensland Museum to undertake minor restoration works to the 'Southern Cross' in July 2013.
Artefact condition assessment of the KSM	A condition assessment of the KSM was undertaken by the Australian War Memorial on behalf of the Department of Infrastructure and Transport in 2012.
Cultural heritage gap analysis and initial Heritage Register review	In 2012 a gap analysis was conducted into Brisbane Airport's Indigenous and non-Indigenous cultural heritage sites and places assessed against Commonwealth Heritage Values.

Five-Year Action Plan				
	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Continue to provide avenues for consultation between the airport and traditional owners	Ongoing	Continued consultation between airport and traditional owners as required	DoIRD Annual Environment Report
2	Continue to implement requirements of the Southern Cross Aircraft Warehousing and Display Agreement, and any recommendations from independent reviews	Ongoing	Effective conservation and interpretation of the KSM	
3	Continue to promote the location and significance of the KSM to the airport and wider community	Ongoing	Increased public exposure to the KSM	
4	Complete a HMP for Brisbane Airport	2014 – 2016	Updated framework to assess and manage heritage sites on Airport land, consistent with relevant obligations and Commonwealth Heritage List criteria	

13.16 Development Projects

OVERALL GOAL

Achieve a built environment which continues to meet leading national sustainability principles.

OBJECTIVES

- Ensure environmentally sustainable building design principles are incorporated into new developments
- Ensure all new proposed commercial buildings are constructed to standards consistent with a minimum 4.5 star National Australian Built Environment Rating System (NABERS)
- Minimise potential environmental impacts from construction activities through the application of CEMPs.

BACKGROUND

Managing environmental impacts from developments can be undertaken by the adoption of sustainable development principles throughout the design, construction and operational phases. Key principles include energy management, water management, emissions, construction materials and transport.

CURRENT MANAGEMENT PRACTICES

Design

Once a project is commissioned, BAC's DCD and the Brisbane Airport Technical Guidelines establish the design intent and criteria for all development projects on airport. These documents contain specific environmental and sustainability requirements that must be addressed in the design including WSUD, energy and potable water efficiency and management, materials selection and waste management.

All new commercial buildings (e.g. offices, hotels etc.) on airport should achieve a minimum 4.5 star NABERS rating. Both the DCD and the Airport Technical Guidelines are available to designers and contractors via BAC's website.

The Brisbane Airport Landscape Master Plan ensures that all landscaping within new developments, including WSUD infrastructure, includes native species that are both drought and salt tolerant. Plant species approved for use in the Landscape Master Plan were selected for their tolerance to non-potable water and to minimise the attraction of wildlife.

Construction Management

BAC has an overarching Project Management Strategy that guides the delivery of BAC-managed projects from design through to construction. A CEMP is required to be developed for projects that have the potential to cause environmental harm.

13 AIRPORT ENVIRONMENT STRATEGY

Recent Achievements	
Infrastructure Sustainability Training	In 2013, BAC staff attended the Infrastructure Sustainability Foundation Course (facilitated by the Infrastructure Sustainability Council of Australia).
Awards	BAC won 'Best Sustainable Development – New Buildings' category at the 2012 Property Council of Australia Innovation and Excellence Awards for its state-of-the-art iSeek Communications Data Centre. This project also won the 2012 Property Council Development of the Year award.
Development of BAC's Project Management Strategy	This provides a robust framework in managing and delivering efficient and consistent projects across Brisbane Airport (2012).
Development of the Airport Approvals Manual	This outlines the airport development approval process (2012).
Brisbane Airport PDMP	This provides a coherent framework of sustainable infrastructure and environmental initiatives to guide BAC's property development and key public realm projects over time (2012).
Development of the Brisbane Airport DCD	The DCD provides design standards which set minimum development guidelines to be adopted in the design of buildings and sites within the airport precincts (2011).
Brisbane Airport CEMP Guidelines	These guidelines provide contractors with a framework to address potential environmental impacts from construction related activities.

Five-Year Action Plan

	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Undertake annual reviews of the CEMP Guidelines, DCD and the Airport Technical Guidelines	Ongoing	Appropriate standards and best practice environmental management is incorporated in developments	DoIRD Annual Environment Report
2	Undertake annual reviews of industry best practice regarding environmental management of construction projects	Ongoing	Airport development documentation, including the CEMP Guidelines, align with current environmental standards and best practice requirements	
3	Develop an Erosion and Sediment Control Guideline to ensure correct management of construction sites	2014 – 2015	Consistent application of guidance material across construction activities	

13.17 Tenant and Contractor Management

OVERALL GOAL

Ensure tenants and contractors environmental responsibilities and practices remain closely aligned with all levels of sustainability adopted by BAC.

OBJECTIVES

- Provide direction to, and closely monitor how, tenants and contractors manage their environmental responsibilities whilst undertaking operations and activities at Brisbane Airport
- Establish environmental risk rating profiles for all Brisbane Airport tenants through regular BAC audits
- Utilise regular BAC conducted forums to promote best practice environmental procedures to airport tenants.

BACKGROUND

There are a large number of diverse businesses, or operators of undertakings and organisations operating at Brisbane Airport. These include tenants (and their subtenants), contractors (and their subcontractors), licensees and any other operators on Brisbane Airport.

CURRENT MANAGEMENT PRACTICES

Tenant Requirements for Environmental Management

The level of environmental risk assigned to each tenant is based on the environmental risks of the activities undertaken by the tenant or the contractors business operations. The activities of any sub-tenants or contractors engaged by the tenant will be considered when determining the overall risk rating for a site. The level of risk also determines how frequently a tenant is audited and the level of audit required. Tenant environmental risk categories are shown in Table 13.7.

Under the Airport Legislation, operators of an undertaking on airport are required to take all reasonable steps to ensure the AES is complied with. In particular, operators are required to prevent the generation of pollution from their undertakings, or where the prevention is not reasonable or practicable, minimise the generation of pollution.

Operational Environmental Management Plan

Tenants with an A or B rating are required to prepare an Operational Environmental Management Plan (OEMP), generally consistent with Section 4 of AS/NZS ISO 14001.

BAC developed OEMP Guidelines to assist tenants and contractors in the development of an OEMP. These guidelines also contain an Activity Risk Register which provides guidance in determining an 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.

Brisbane Airport Tenant Environmental Committee (BATEC)

BATEC is a forum provided by BAC to discuss general environmental issues affecting the airport community including strategies in the AES to address these. These meetings enable tenants to discuss environmental issues and industry practice being implemented across the airport as well as SEQ.

Focus groups are also undertaken to discuss specific environmental topics such as energy, waste management, water management, and other AES matters.

Auditing and Reporting Requirements

Based on their allocated risk category, tenants are required to provide BAC with audit/review results as they become available. 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 Table 13.8.

TABLE 13.7: TENANT ENVIRONMENTAL RISK CATEGORIES

Category	Description
Level A	High risk tenants – activities such as, but not limited to, aircraft maintenance hangars, fuel storage and distribution, significant dangerous goods storage, and significant trade waste generation. All such activities have the potential to cause significant environmental harm
Level B	Medium risk tenants – activities such as ground service equipment maintenance, some aircraft repair and maintenance workshops, and large warehousing facilities. All such activities have the potential to cause moderate environmental harm/nuisance
Level C	Low risk tenants – activities include office/administrative and childcare facilities. These operations provide a low risk to the environment

TABLE 13.8: TENANT AUDITING AND REPORTING REQUIREMENTS

	Level A Activities	Level B Activities	Level C Activities
External audit*	Annual	-	-
Internal audit	Annual	Annual	Managed by BAC
Reporting	Annual	Annual (no external)	Managed by BAC

* *For most tenants in the Level A risk category, internal audits are accepted as external audits as agreed by BAC on a case-by-case basis. This is justified as most EMS systems use certified internal auditors for an independent arm within the same organisation to conduct the audits.*

Contractor Requirements for Environmental Management

Tenants must ensure that their contractors perform activities in accordance with the Airports Act and with the AES. These requirements include training, procedures and implementation of the specific OEMP.

Contractors operating on Brisbane Airport must also ensure, prior to undertaking work, that staff are trained to address any environmental risks, and are aware of environmental policies and procedures for any works undertaken.

WORKING TOGETHER

BAC works with tenants and contractors to meet environmental obligations.

Airservices Australia building and Control Tower

Recent Achievements	
Training Workshops (2013)	In 2013, free energy efficiency training workshops were offered to Brisbane Airport tenants through EarthCheck's Business Ready Program.
Updated OEMPs	The percentage of high risk tenants supplying a current OEMP has increased from 38% in 2009 to 88% in 2013.

Five-Year Action Plan

	Management Action	Timeframe	Expected Implementation Outcome	Reporting
1	Facilitate BATEC focus groups for water management, energy management, biodiversity (including wildlife management) and waste management	Ongoing	Knowledge sharing with tenants and to raise and discuss environmental mappers on airport	DoIRD Annual Environment Report
2	Conduct annual environmental inspections of 'A' tenant facilities including spot checks on audit findings	Ongoing	Improved environmental site management	
3	Conduct 'B' tenant inspections based on risks and activities	Ongoing	Improved environmental site management	
4	Ensure high-risk tenant's environmental lease clauses are implemented	Ongoing	Fulfilment of airport lease conditions	DoIRD Annual Lease Review
5	Continue to review tenant audit reports on an annual basis	Ongoing	Improved environmental site management	DoIRD Annual Environment Report
6	Communicate airport development updates to the airport community via existing consultation mechanisms	Ongoing	Communication of development activities on airport and relevant contact details	
7	Update the environmental section of the tenant directory website	2014 – 2015	Improved communication of environmental requirements to tenants	
8	Continue to require all existing and new tenants to develop an OEMP for their operations	100% by 2016	Improved environmental site management	

13.18 APPENDICES

APPENDIX A – AES LEGISLATIVE REQUIREMENTS: AIRPORTS ACT 1996

Section	Sub-section	Legislative Requirement	AES Reference
71 Contents of draft or final master plan This section specifies the details that must be specified in an environment strategy	(2)(h)	(i) The Airport Lessee Company's (ALC's) objectives for the environmental management of the airport.	Chapter 13.5 –BAC Environmental Management Framework Chapter 13.6 – Environmental Management System
		(ii) The areas (if any) within the airport site which the ALC, in consultation with State and Federal conservation bodies, identifies as environmentally significant.	Chapter 13.13 – Biodiversity
		(iii) The sources of environmental impact associated with airport operations.	Chapters 13.6 to 13.17
		(iv) The studies, reviews and monitoring to be carried out by the ALC in connection with the environmental impact associated with airport operations.	Chapters 13.6 to 13.17
		(v) The timeframes for completion of those studies and reviews and for reporting on that monitoring.	Chapters 13.6 to 13.17
		(vi) The specific measures to be carried out by the ALC for the purposes of preventing, controlling or reducing the environmental impact associated with airport operations.	Chapters 13.6 to 13.17
		(vii) The timeframes for completion of those specific measures.	Chapters 13.6 to 13.17
		(viii) Details of the consultation undertaken in preparing the strategy (including the outcome of the consultations).	Chapter 13.5 – BAC Environmental Management Framework Chapter 13.18 – Appendix B
		(ix) Any other matters that are prescribed in the regulations.	See over page
	(2)(j)	Such other matters (if any) as are specified in the regulations.	See over page

Section	Sub-section	Legislative Requirement	AES Reference
72 Planning Period	(2)	The environment strategy in a draft or final master plan must relate to a period of five years.	Chapter 13.1 – Introduction
83A Compliance with environment strategy in final master plan	(1)	This section applies if a final master plan is in force for an airport.	
	(2)	The ALC for the airport must take all reasonable steps to ensure that the environment strategy in the master plan is complied with.	Chapter 13.5 –BAC Environmental Management Framework
	(3)	A person (other than the ALC for the airport) who carries on activities at the airport must take all reasonable steps to ensure that the environment strategy in the master plan is complied with.	Chapter 13.17 – Tenant and Contractor Management

View across the airport to the site of the New Parallel Runway

APPENDIX A – AES LEGISLATIVE REQUIREMENTS: AIRPORTS REGULATIONS 1997 (CONTINUED)

Section	Sub-section	Legislative Requirement	AES Reference
5.02A Contents of draft or final master plan – matters to be specified in environment strategy	(1)	For subparagraphs 71 (2) (h) (ix) and (3) (h) (ix) of the Act, the matters in this regulation must be addressed in the environment strategy.	Chapters 13.6 to 13.17
	(2)	The environment strategy must specify any areas within the airport site to which the strategy applies that the ALC for the airport has identified as being a site of Indigenous significance, following consultation with: (a) Any relevant indigenous communities and organisations; and (b) Any relevant Commonwealth or state body	Chapter 13.15 – Heritage
	(3)	The environment strategy must specify the ALC's strategy for environmental management of areas of the airport site that are, or could be, used for a purpose that is not connected with airport operations.	Chapters 13.16 to 13.17
	(4)	The environment strategy must specify: (a) The training necessary for appropriate environment management by persons, or classes of persons, employed on the airport site by the ALC or by other major employers; and (b) The training programs, of which the ALC is aware, that it considers would meet the training needs of a person mentioned in paragraph (a).	Chapter 13.6 – Environmental Management System Chapter 13.17 – Tenant and Contractor Management
5.02B Contents of draft or final master plan – things to be addressed in environment strategy	(1)	For subsection 71 (5) of the Act, a draft or final master plan must address the things in the regulations.	Chapters 13.6 to 13.17

Section	Sub-section	Legislative Requirement	AES Reference
5.02B This section specifies those matters that the ALC must address in its environmental objectives	(2)	(a) Continuous improvement in the environmental consequences of activities at the airport.	Chapters 13.6 to 13.17
		(b) Progressive reduction in extant pollution at the airport.	Chapter 13.12 – Soil Management
		(c) Development and adoption of a comprehensive environmental management system for the airport that maintains consistency with relevant Australian and international standards.	Chapter 13.6 – Environmental Management System
		(d) 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 and heritage value.	Chapter 13.13 – Biodiversity Chapter 13.15 –Heritage
		(e) Involvement of the local community and airport users in development of any future strategy.	Chapter 13.15 – Heritage
		(f) Dissemination of the strategy to sub-lessees, licensees, other airport users and the local community.	Chapter 13.5 – BAC Environmental Management Framework Chapter 13.17 – Tenant and Contractor Management
5.02B This section outlines those matters that must be addressed by the ALC in specifying environmentally significant areas on the airport site	(3)	(a) Any relevant recommendation of the Australian Heritage Council.	Chapter 13.15 – Heritage
		(b) Any relevant recommendation of the Department of Environment regarding biota, habitat, heritage or similar matters.	Chapter 13.13 – Biodiversity Chapter 13.15 – Heritage
		(c) Any relevant recommendation of a body established in the state in which the airport is located, having responsibilities in relation to conservation of biota, habitat, heritage or similar matters.	Chapter 13.13 – Biodiversity Chapter 13.15 – Heritage

APPENDIX A – AES LEGISLATIVE REQUIREMENTS: AIRPORTS REGULATIONS 1997 (CONTINUED)

Section	Sub-section	Legislative Requirement	AES Reference
5.02B This section specifies the "sources of environmental impact" that the ALC must address	(4)	(a) 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.	Chapter 13.9 – Air Quality and Emissions
		(b) Water quality, including potentially affected groundwater, estuarine waters and marine waters.	Chapter 13.11 – Water Management
		(c) Soil quality, including that of land known to be already contaminated.	Chapter 13.12 – Soil Management
		(d) Release, into the air, of substances that deplete stratospheric ozone.	Chapter 13.9 – Air Quality and Emissions
		(e) Generation and handling of hazardous waste and any other kind of waste.	Chapter 13.10 – Waste and Resource Management
		(f) Usage of natural resources (whether renewable or non-renewable).	Chapter 13.8 – Energy Management Chapter 13.9 – Air Quality and Emissions Chapter 13.10 – Waste and Resource Management Chapter 13.11 – Water Management
		(g) Usage of energy the production of which generates emissions of gases known as 'greenhouse gases'.	Chapter 13.8 – Energy Management Chapter 13.9 – Air Quality and Emissions
		(h) Generation of noise.	Chapter 13.14 – Noise

Aerial view of Domestic T2

Section	Sub-section	Legislative Requirement	AES Reference
5.02B This section specifies the studies, reviews and monitoring that the ALC plans to carry out	(5)	(a) The matters mentioned in sub-regulation 5.02A (2) and sub-regulations 5.02B (3) and (4).	Chapters 13.6 to 13.17
		(b) The scope, identified by the ALC, for conservation of objects and matters at the airport that have natural, indigenous or heritage value.	Chapter 13.13 – Biodiversity Chapter 13.15 – Heritage
		(c) The approaches and measures identified by the ALC as its preferred conservation approaches and measures.	Chapter 13.13 – Biodiversity
		(d) The professional qualifications that must be held by a person carrying out the monitoring.	Chapter 13.5 – BAC Environmental Management Framework Chapter 13.6 – Environmental Management System
		(e) The proposed systems of testing, measuring and sampling to be carried out for possible, or suspected, pollution or excessive noise.	Chapter 13.5 – BAC Environmental Management Framework Chapter 13.6 – Environmental Management System
		(f) The proposed frequency of routine reporting of monitoring results to the AEO (if any) for the airport, or to the Secretary.	Chapters 13.5 to 13.17
5.02B This section specifies the measures that the ALC must address in preventing, controlling or reducing environmental impact	(6)	(a) The matters mentioned in sub-regulations (2) to (4).	Chapters 13.6 to 13.17
		(b) The means by which it proposes to achieve the cooperation of other operators of undertakings at the airport in carrying out those plans.	Chapter 13.17 – Tenant and Contractor Management
5.02B	(7)	An ALC, in specifying the company's strategy for environmental management under sub-regulation 5.02A (3), must address the matters in sub-regulations (2) to (6).	Chapters 13.6 to 13.17

APPENDIX B – CONSULTATION PROGRAM

Date	Stakeholder Group	Outcomes
26 February 2013	(Former) Comm. Department of Infrastructure and Transport – now DoIRD	Initial 2014 Master Plan and AES briefing. Matters of interest raised by the department included the promotion of continual improvement in sustainability initiatives and consolidation into one chapter, and possibilities for composting waste on airport. The Environmental Sustainability Action Plan addresses the first and second items, whereas the Energy Management action plan addresses the second (BAC will undertake feasibility studies for the generation of alternate forms of electricity, which could include utilising green waste as a fuel source).
27 February 2013	(Former) Comm. Department of Sustainability, Environment, Water, Population and Communities – now the Department of Environment	Initial 2014 Master Plan and AES briefing. No matters of interest or concern were raised by the Department of Sustainability, Environment, Water, Population and Communities.
12 March 2013	Community Information Exchanges – Bulimba	An information session for the local community. BAC staff were available for one-on-one discussions with the public, information materials were distributed and questions answered. The sessions were advertised in advance via BAC's website, Quest newspapers, BMag, local MP's and BAC's social media pages.
May – June 2013	Internal AES action plan workshops	A series of initial briefings on the 2014 AES provided to relevant BAC staff. Existing action items of the 2009 AES were reviewed and potential 2014 AES action items were discussed.
22 May 2013	Community Information Exchanges – Murarrie	An information session for the local community. BAC staff were available for one-on-one discussions with the public, information materials were distributed and questions answered. The sessions were advertised in advance via BAC's website, Quest newspapers, BMag, local MP's and BAC's social media pages.
7 August 2013	Community Information Exchanges – Ascot	An information session for the local community. BAC staff were available for one-on-one discussions with the public, information materials were distributed and questions answered. The sessions were advertised in advance via BAC's website, Quest newspapers, BMag, local MP's and BAC's social media pages.
21 August 2013	BATEC interactive AES workshop	The BATEC group helped formulate action plans for the 2014 AES. Questions asked included "what to start, continue, increase, stop or change" for each action plan. The main focus was on energy, water and waste – reduce consumption (via renewable energies, efficiencies, access to recycled water, food rescue etc.), share knowledge and collaborate on joint initiatives. Another focus was on providing contacts for reporting environmental issues (e.g. projects, drainage maintenance and weed control), plus increase promotion of the KSM. All the above outcomes have been incorporated in the relevant action plans of the 2014 AES. Other key focus areas were to provide a common user refuelling station airside, common user waste transfer station and dedicated ground run facility on airport. These matters are discussed in the 2014 Master Plan if plausible.

Date	Stakeholder Group	Outcomes
August 2013	Master Plan Visioning Workshop: » BAC » BCC	BCC asked the following: » Public access/nature walks within Biodiversity Zone » BAC's position on its natural assets and how they will be managed » Potential collaboration around environment matters » Investigate opportunity to seamlessly integrate the adjoining off airport and on airport biodiversity zones » Develop a joint BAC/BCC environment education / regional tourism information centre on airport in a location accessible to passengers and visitors. The above considerations were included in the Biodiversity action plan where possible. BAC will continue to manage the Biodiversity Zone for conservation in consultation with BCC; the existing sponsorship program with the NBEEC will be continued with consideration for a joint interpretive theme; whereas the focus of airport cycleways will be to increase inter and intra-airport connections, rather than facilitating public access to the Biodiversity Zone at this stage.
10 September 2013	Master Plan Environment Working Group: » BAC » DEHP » BCC	An overview of the intent and contents of an AES was provided, including a summary of 2009 AES achievements. Attendees were then asked what key environmental areas or issues they would like to see addressed further. DEHP asked what measures are being undertaken to address climate change and whether there are any direct or indirect measures BAC can take to assist improve the water quality of Bramble Bay. Climate change is addressed in the Master Plan; however BAC has set minimum design levels for all airport developments and addresses natural disaster response via the Brisbane Airport Emergency Plan. BAC's EMS requires Standard Operating Proceedures for BAC activities which pose environmental risk and audits compliance against these; all development projects are required to develop stormwater quality management plans and CEMPs and BAC undertakes regular inspections to assess compliance with these plans. However in the Water Management action plan, BAC has also committed to investigate the possibility of sewer mining which could provide another supply of recycled water but also reduce the nutrient load going into Luggage Point Waste Water Treatment Plant. BCC asked primarily about biodiversity, development and noise. Biodiversity matters of interest were feral animal control, possibilities for joint conservation management and public access to the Biodiversity Zone. These matters are addressed in the Biodiversity action plan chapter and also discussed in the Visioning Workshop points above. BAC asked the working group for feedback on heritage matters to assist with the development of the Heritage action plan. The DEHP representative asked where Brisbane Airport's heritage items/places are located and how these sites are communicated to contractors etc. (addressed in the Heritage action plan section).

APPENDIX B – CONSULTATION PROGRAM (CONTINUED)

Date	Stakeholder Group	Outcomes
6 November 2013	Master Plan Environment Working Group: » BAC » BCC » DEHP	BAC discussed the draft AES with particular reference on the heritage, water and biodiversity chapters. With regards to heritage, BAC proposed the development of a HMP in accordance with the Commonwealth guidelines. State and local issues would be considered as part of this HMP. DEHP and BCC were supportive of BAC's proposal to develop a HMP. BAC advised that a Stormwater Quality Management Strategy had been developed in accordance with State guidelines. BAC also confirmed the installation of automatic sampling machines were part of this strategy. BCC commented on the opportunity to align biodiversity management along common boundaries and would progress with BAC a Memorandum of Understanding.
December 2013	BAC Turrbul People	Consultation continued with traditional owners in relation to the development of the Brisbane Airport HMP and a preliminary review of BAC's current Heritage Register was also conducted.
15 January 2014	Master Plan Environment Working Group: » BAC » BCC » DEHP	BAC provided an overview of the draft AES with particular emphasis on the heritage, water and biodiversity chapters. It was suggested that BAC liaise with BCC and DEHP with regards to community sponsorship to ensure maximum benefit and community reach. A tour of the Biodiversity Zone including the Lewin's Rail ESA was undertaken with attendees at this working group meeting. A future tour of the NPR site will be organised.

Environment visioning workshops conducted as part of developing the 2014 AES

APPENDIX C – SIGNIFICANT FLORA AND FAUNA SPECIES ON BRISBANE AIRPORT

Scientific Name	Common Name	Nature Conservation Act Status	EPBC Act Status	Other Status
Plants				
Avicennia marina	Grey mangrove	-	-	I (BCC)
Mammals				
Pteropus alecto	Black flying fox	-	-	C,D,K (BCC)
Pteropus poliocephalus	Grey-headed flying fox	-	V	VU (IUCN)
Pteropus scapulatus	Little red flying fox	-	-	C,D,K (BCC)
Tadarida australis	White-striped free-tailed bat	-	-	I (BCC)
Mormopterus norfolkensis	East-coast free-tailed bat	-	-	VU (IUCN) A,I,K (BCC)
Miniopterus australis	Little bent-wing bat	-	-	I (BCC)
Miniopterus schreibersii oceanis	Eastern bent-wing bat	-	-	NT (IUCN) I (BCC)
Myotis macropus	Southern myotis	-	-	I,K (BCC)
Nyctophilus gouldi	Gould's wattled bat	-	-	D,I (BCC)
Scoteanax rueppellii	Greater broad-nosed bat	-	-	A,I,K (BCC)
Rattus lutreolus	Swamp rat	-	-	C (BCC)
Birds				
Coturnix chinensis	King quail	-	-	B,C (BCC)
Milvus migrans	Sqaure-tailed kite	NT	-	
Ephippiorhynchus asiaticus	Black-necked stork	NT	-	NT (IUCN) A,D (BCC)
Egretta sacra	Eastern reef egret	-	M	CA
Ardea alba	Great egret	-	M	CA, JA D (BCC)
Ardea ibis	Cattle egret	-	M	CA, JA D (BCC)
Ixobrychus flavicollis	Black bittern	-	-	B,D (BCC)
Ixobrychus minutus	Little bittern	-	-	CA B,D (BCC)
Botaurus poiciloptilus	Australasian bittern	-	E	EN (IUCN) A,B,D (BCC)
Plegadis falcinellus	Glossy ibis	-	M	Bonn, CA A,D (BCC)
Anas castanea	Chestnut teal	-	-	D (BCC)
Accipiter fasciatus	Brown goshawk	-	-	C,D (BCC)
Accipiter novaehollandiae	Grey goshawk	NT	-	B,C,D (BCC)
Circus approximans	Swamp harrier	-	-	B,C,D (BCC)
Haliaeetus leucogaster	White-bellied sea-eagle	-	M	CA B,C (BCC)
Pandion haliaetus	Osprey	-	M	Bonn B (BCC)

APPENDIX C – SIGNIFICANT FLORA AND FAUNA SPECIES ON BRISBANE AIRPORT (CONTINUED)

Scientific Name	Common Name	Nature Conservation Act Status	EPBC Act Status	Other Status
Lewinia pectoralis	Lewin's rail	NT	-	C (BCC)
Burhinus grallarius	Bush stone-curlew	-	-	K (BCC)
Esacus magnirostris	Beach stone-curlew	V	-	NT (IUCN) B,C,D (BCC)
Gallinago hardwickii	Latham's snipe	-	M	Bonn, CA, JA, RK, B,D (BCC)
Limosa lapponica	Bar-tailed godwit	-	M	Bonn, CA, JA, RK B,D (BCC)
Limosa limosa	Black-tailed godwit	-	M	NT (IUCN) Bonn, CA, JA, RK B,D (BCC)
Numenius madagascariensis	Eastern curlew	NT	M	VU (IUCN) Bonn, CA, JA, RK B,D (BCC)
Numenius phaeopus	Whimbrel	-	M	Bonn, CA, JA, RK B,D (BCC)
Numenius minutus	Little curlew	-	M	Bonn, CA, JA, RK B,D,K (BCC)
Tringa nebularia	Common greenshank	-	M	Bonn, CA, JA, RK B,D (BCC)
Tringa stagnatilis	Marsh sandpiper	-	M	Bonn, CA, JA, RK B,D (BCC)
Actitis hypoleucos	Common sandpiper	-	M	Bonn, CA, JA, RK B,D (BCC)
Heteroscelus brevipes	Grey-tailed tattler	-	M	Bonn, CA, JA, RK B,D (BCC)
Arenaria interpres	Ruddy turnstone	-	M	Bonn, CA, JA, RK B,D (BCC)
Calidris canutus	Red knot	-	M	Bonn, CA, JA, RK B,D (BCC)
Calidris tenuirostris	Great knot	-	M	VU IUCN Bonn, CA, JA, RK B,D (BCC)
Calidris alba	Sanderling	-	M	Bonn, CA, JA, RK B,D (BCC)
Calidris ruficollis	Red-necked stint	-	M	Bonn, CA, JA, RK B,D (BCC)
Calidris acuminata	Sharp-tailed sandpiper	-	M	Bonn, CA, JA, RK B,D (BCC)
Calidris ferruginea	Curlew sandpiper	-	M	Bonn, CA, JA, RK B,D (BCC)
Rostratula australis	Australian painted snipe	V	V, M	EN (IUCN), CA B,D (BCC)

Scientific Name	Common Name	Nature Conservation Act Status	EPBC Act Status	Other Status
Pluvialis fulva	Pacific golden plover	-	M	Bonn, RK B,D (BCC)
Pluvialis squatarola	Grey plover	-	M	Bonn, CA, JA, RK B,D (BCC)
Charadrius bicinctus	Double-banded plover	-	M	Bonn B,D (BCC)
Charadrius mongolus	Lesser sand plover	-	M	Bonn, CA, JA, RK B,D (BCC)
Charadrius leschenaultii	Greater sand plover	-	M	Bonn, CA, JA, RK B,D (BCC)
Sterna bergii	Crested tern	-	-	JA
Sterna caspia	Caspian tern	-	M	CA, JA B,D (BCC)
Sterna hirundo	Common tern	-	M	CA, JA, RK B,D (BCC)
Sternula albifrons	Little tern	NT	M	Bonn, CA, JA, RK B,D (BCC)
Tyto capensis longimembris	Eastern grass owl	-	-	B,C (BCC)
Hirundapus caudacutus	White-throated needletail	-	M	CA, JA, RK H (BCC)
Merops ornatus	Rainbow bee-eater	-	M	C (BCC)
Cormobates leucophaea	White-throated tree-creeper	-	-	C,D (BCC)
Acanthiza lineata	Striated thornbill	-	-	C (BCC)
Chthonicola sagittata	Speckled warbler	-	-	B,C (BCC)
Rhipidura rufifrons	Rufous fantail	-	M	-
Acrocephalus stentoreus	Clamorous reed-warbler	-	M	Bonn
Reptiles				
Chelonia mydas	Green turtle	V	V, M	Bonn
Chelodina longicollis	Eastern snake-necked turtle	-	-	B,D (BCC)
Delma plebeia	Common delma	-	-	B,F,K (BCC)
Egernia striolata	Tree skink	-	-	B,C,D,F (BCC)
Pseudechis porphyriacus	Red-bellied black snake	-	-	A,C,D (BCC)
Amphibians				
Limnodynastes tasmaniensis	Spotted marsh frog	-	-	C (BCC)
Rays				
Dasyatis fluviorum	Estuary stingray	-	-	VU (IUCN)

NOTE:

*IUCN Red List: **EN** Endangered; **VU** Vulnerable; **NT** Near Threatened;*

*EPBC Act: **E** Endangered; **VU** Vulnerable; **M** Migratory species are those listed on Bonn, CA, JA & RK; Bonn: Listed on the Bonn Convention as Migratory;*

*Nature Conservation Act: **EN** Endangered; **VU** Vulnerable; **NT** Near Threatened; **CA** CAMBA; **JA** JAMBA; **RK** ROKAMBA;*

*BCC Draft Brisbane City Plan 2014 (SC6.3): Significant flora species: **I** Obligate species; **M** Koala habitat tree; and*

*BCC Draft Brisbane City Plan 2014 (SC6.3): Significant fauna species: **A** Uncommon; **B** Restricted distribution; **C** In decline; **D** Habitat indicator; **F** Limit of range; **H** Poorly known; **I** Obligate species; **K** Regionally significant taxa.*