Archerfield Airport Corporation

PRELIMINARY DRAFT MASTER PLAN 2022-2042

Archerfield Airport Master Plan 2022-2042

and

Airport Environment Strategy 2022

Preliminary draft

September 2022

Prepared for:

Archerfield Airport Corporation
PO Box 747 ARCHERFIELD QLD 4108
Telephone (07) 3275 8000
email: *aac@archerfieldairport.com.au*

Archerfield Airport Corporation

Prepared by:

Planned F.X. Pty Ltd
126 Valentine Street IVANHOE VIC 3079
Telephone (03) 9497 1120
email: *plannedfx@bigpond.com*

PlannedFX
Planning Environment Strategy Design

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Foreword

This preliminary draft Master Plan and Environment Strategy outlines the framework for the next phase of the redevelopment of Archerfield Airport, Queensland's principal General Aviation airport.

It has been prepared against the backdrop of Covid 19 disruptions. Those disruptions sorely tested the resilience of our staff and wider community, but they have confirmed the soundness of the General Aviation business model at Archerfield, and given confidence in the future. We delight that our clients have survived the recent economic challenges, and in notable cases have not only survived, but thrived.

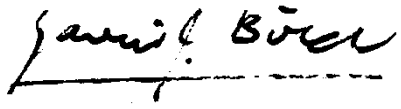
This plan is the fifth in a series of airport Master Plans and Environment Strategies prepared by Archerfield Airport Corporation since 1998.

It builds on the strong foundations established by the preceding iterations, and it boldly declares a determination to accelerate the reinstatement and transformation of this significant national site.

It confirms our commitment to the continued upgrade of critical infrastructure and the provision of purpose-built amenities. It provides for the opportunities that our traditional General Aviation services will enjoy in the coming Olympic decade, and it welcomes engagement with the exciting aviation disruptors that are emerging.

Thank you for your interest in our planning for the future. We are mindful of the privilege and responsibility entrusted to us to guide the restoration and renewal of the national treasure that is Archerfield.

We invite you to embrace the vision and cherish the opportunities ahead.



Gavin J. Bird AM
Managing Director
Archerfield Airport Corporation
September 2022

Summary

INTRODUCTION

The *Archerfield Airport Master Plan 2022-2042* ('Master Plan') is the fifth master plan prepared for Archerfield Airport Queensland by Archerfield Airport Corporation ('AAC'). It replaces the 2017-37 Master Plan and 2017 Environment Strategy, approved by the Minister for Infrastructure and Transport on 15 July 2017.

The location of Archerfield Airport is shown in Figure 1.

PURPOSE OF THE MASTER PLAN

The Master Plan describes the planning framework for development of the airport over the next 20 years.

The Master Plan must address a range of issues specified in the *Airports Act 1996*, and these are summarised in Chapter 1.

It provides the basis for the timely and coordinated development of aviation facilities and infrastructure, aviation and non aviation land use, and for appropriate management of the airport environment.

It also identifies the ground transport requirements for the airport, and the measures required to safeguard the continued operation of the airport, including an Australian Noise Exposure Forecast (ANEF) to the year 2042, and obstacle clearances and navigation requirements for the prescribed airspace around the airport.

The Master Plan sets out the key issues facing the airport, concepts or options for addressing these issues, and defines the consultative and decision making processes that will be followed as the airport develops over the coming years.

Key development initiatives, and the catalyst for these, are described in Chapter 15.

This Master Plan includes in Chapters 13-16 and 18 the *Archerfield Airport Environment Strategy 2022*.

ACHIEVEMENTS: 1998-2022

AAC has over the period 1998-2022 implemented a range of projects that were foreshadowed in the first four Master Plans.

These include:

- road network improvements including an extension to Beaufighter Avenue, the redevelopment of Wirraway Avenue, and the creation of the Barton Street link (joining Balham Road and Beatty Road, across the north of the airport);
- relocation of Queensland Government Air Wing (QGAir) to a new purpose built facility on Wirraway Avenue;
- decommissioning of the former QGAir helipad (in the south east part of the airport) and a second helipad north of the Control Tower;
- purchase and refurbishment of the historic Airport Administration and Terminal building, which is now the headquarters for AAC administration, offices, terminal and home to the Airport history room (the office refurbishment received a commendation in the categories of Interior Architecture and Heritage in the 2015 Brisbane Regional Architectural Awards);
- restoration of the former Shell building (2001);
- continued support for the conservation works by Friends of God's Acre cemetery;
- overlay and subsequent sprayed seal of Runway 10R/28L.
- part reconstruction and overlay of taxiways Alpha, Bravo and Juliet, and aircraft parking areas;
- overlay of Qantas Avenue, Ditchmen Avenue and Lores Bonney Drive, to upgrade the road access to the Beatty, Mortimer and Beaufighter precincts;
- reconstruction of the airport turbine pad;

- upgrading of airport security, including additional measures to control access to airside areas;
- construction of a long-term car park in the Beatty Precinct;
- development of major stormwater management basins, drains and related infrastructure in the central, south-west and western parts of the airport;
- upgrading of electricity supply to the airport and development precincts, including the installation of a new high voltage pad mounted transformer;
- ongoing grounds and building maintenance and regeneration, including asbestos removal and building/hangar upgrading;
- completion of a Cultural Heritage Management Plan for the airport (2001);
- development of new corporate hangars, adjacent to the main runway and accessible from Wirraway Avenue;
- development of a new office and warehouse on Beaufighter Avenue;
- purchase of a number of hangars, and construction of a new hangar complex (site 235);
- remediation of known contaminated sites;
- implementation of rainwater collection measures in new developments (QGAir, corporate hangars and office/warehouse), changes to irrigation practices, upgraded water meters, and installation of water efficient fittings in new developments and refurbishments (including the Airport Terminal) in accordance with a *Water Efficiency Management Plan* (WEMP) prepared in consultation with tenants and Brisbane Water;
- specification of energy efficient services (air conditioning, lighting, etc) in new and refurbished developments;
- major refurbishment of Building 9, in the Beatty Precinct (in Archerfield Square, adjacent to Grenier Drive) to incorporate the Airport's first on site student accommodation and training operations;
- major upgrade and renewal of Hangar 6, including installation of a new domed roof and refit of the interior to provide a modern workshop and offices, for LifeFlight Australia Heavy Maintenance (2015);
- upgrade and renewal of Hangar 5, including a new domed roof and improvements to drainage on southern side, for Archerfield Jet Base Fixed Base Operations (FBO) (2016);
- construction of roads and services for the Transition – Archerfield Logistics Estate (Transition Estate), in the Boundary Precinct (2012 to present);
- transition from Registered Airport to Certified Airport on 12th April 2013;
- implementation of the Fly Neighbourly program (launched November 2015, and reviewed and updated in 2022 in consultation with stakeholders);
- optimisation of the airport's airspace to cater for instrument approaches/departures and Category C Aircraft;
- installation of a 86kW solar electricity generation system on Building 111 in the Beatty Precinct, providing renewable energy;
- development of the 300 sites, and Ashover Circuit in the Ashover Precinct;
- construction of the centralised fire sprinkler tank infrastructure for Transition - Archerfield Logistics Estate (Transition) and future aviation precincts;
- completion of a Heritage Management Plan for the airport (2021);
- implementation of Project AIM, including reconstruction, strengthening and extension of the main runway (10L/28R), related taxiways and the Eastern Apron; reconstruction, widening and strengthening of Taxiway Bravo to Code B standard; and installation of upgraded lighting and navigation aids; to cater for up to Code C aircraft (2019-22);
- redevelopment of Hangar 4 to provide modern aircraft maintenance, engineering and related facilities for a long-established airport tenant (2021);
- facilitating the upgrade and renewal of Hangar 3 by a long standing airport tenant, to provide modern accommodation whilst conserving identified heritage values (2021);
- construction of the first warehouse and office facility in the Transition Estate (site 581);
- implementation of landscaping works in Qantas Avenue; and

- redevelopment of sites 13 and 14 to provide a new hangar and office for an aviation tenant, in Archerfield Square adjacent to Taxiway Hotel.

Further details are provided in Chapter 2.

AIRPORT CONTEXT

Location

The airport is located approximately 11 kilometres by car south west of the Brisbane City Centre. The airport site covers approximately 257 hectares, and is generally flat and slopes gently west and south west to Oxley Creek.

History

Archerfield Airport served as Queensland's main airport between 1931 and 1949 and played a strategic role during World War II.

After the war, Eagle Farm dominated aviation activity and resources in the Brisbane Basin, and the role of Archerfield shifted to catering for general aviation.

Lack of investment caused a gradual decline in serviceability, such that by the late 1980s much of the infrastructure had declined towards disrepair. Environmental standards had deteriorated, and commerciality had eroded.

Throughout the 1990's determined efforts were made by the Federal Airports Corporation to restore the airport to viability, but a lack of investment capital hindered those endeavours.

In 1998, Archerfield was privatised.

It now operates as the major general aviation airport in Queensland, and the metropolitan airport for greater Brisbane. More detail on the history and heritage of the site is provided in Chapter 16 of the Master Plan.

Land use

The airport is surrounded to the north, north-west, east and south by mostly industrial and related uses. Some residential areas are located at Acacia Ridge to the south-east, Durack and Oxley (to the west side of Oxley Creek), and to the north in Rocklea and Salisbury.

To the west and south west is the Oxley Creek. This, in conjunction with the nearby Blunder Creek forms part of a regional habitat link and waterway running through the south west urban area of Brisbane, to the Brisbane River. The land use context is shown in Figures 3 and 10.

The Archerfield/Acacia Ridge area is one of the fastest growing industrial areas of Brisbane, and is part of the *South West Industrial Gateway* which is Brisbane's second most important industrial area (after the Australia TradeCoast).

As identified in 1998 during the privatisation process, there is over 75 hectares of undeveloped land on the airport that can be developed for non-aviation, aviation and aviation compatible purposes. There are also opportunities for infill developments and the progressive renewal of some of the established parts of the airport, to better meet existing and future needs.

Accessibility

The airport is highly accessible to ground transport. It is close to the Ipswich Motorway (with a full interchange at Granard Road 600 metres to the north; and on and off ramps for south-west bound traffic at Randolph Street, which is approximately 570 metres to the west).

Access is also available from Beaudesert Road, which is between 900m and 1.3km to the east of the airport (via Boundary Road, Kerry Road or Mortimer Road).

The regional road system provides arterial linkages north to Brisbane via South East Freeway or Gateway Motorway, south east to the Gold Coast via the Pacific Highway or inland to Sydney via Ipswich.

The airport is close to the main National Rail freight intermodal terminal on the Brisbane to Sydney line. Catering for rail and trucks, the intermodal is located 1.6km to the east of the airport, at the end of Kerry Road. The rail line provides freight access linking the Port of Brisbane to Sydney's freight and port network.

The airport is also serviced by a number of bus routes, and is close to the Coopers Plains railway station. The railway is part of the metropolitan passenger network, carrying services north to the Brisbane CBD, and the Airtrain that links Brisbane Airport to the Gold Coast.

THE VISION

Archerfield Airport Corporation strives to nurture the dynamic potential of Archerfield as a superior aviation destination.

Its vision is for the airport to be the focus of general and corporate aviation in South East Queensland and a sustainable aviation and enterprise hub, integrated with and serving the growing needs of Brisbane.

Archerfield is Brisbane's metropolitan airport. It will always be the focus of general aviation in Queensland. It will continue to develop as a centre of excellence for aeronautical and related activities, catering for corporate aviation, flying training, charter, freight, aeromedical and emergency services, Advanced Air Mobility and emerging technologies; supported by a range of allied businesses.

The airport infrastructure will be developed progressively to meet the changing needs of aviation and associated growth in Queensland. AAC will continue to work with existing aviation businesses on the airport to encourage their long-term sustainability, and will seek to attract new viable aviation businesses, where these are compatible with the vision for Archerfield.

Archerfield will also play a strategic role in the development of the *South West Industrial Gateway* of Brisbane, which has been designated by the Queensland State Government and Brisbane City Council (BCC) as one of the most important industrial areas in South East Queensland.

AAC will seek to build on the strengths of existing enterprises, facilities and infrastructure; and facilitate the development of industrial and appropriate commercial activities on land that is not required for aviation purposes.

AAC will work with Brisbane City Council (BCC) and the State Government to identify opportunities to attract and foster business investment that is complementary to the airport, and meets the emerging needs of the metropolitan and rural community and economy of Brisbane. These initiatives will be complementary to the continued development of the regional growth corridors which extend to the south and west of the airport.

DEVELOPMENT OBJECTIVES

AAC has set the following overarching objectives for development of the airport:

- to nurture, maintain and develop airport facilities;
- to establish a complementary balance between aviation, aerospace, industrial and commercial developments;
- to enhance, promote and support the aviation image of the airport;
- to achieve best practice with significant developments;
- to be a good neighbour;
- to complement key objectives identified by State and Local Government authorities;
- to work with government and the local community to achieve the ecologically sustainable development of airport land;
- to attract commercially viable developments to aeronautical and non-aeronautical sites;
- to contribute to the regeneration of the South West Industrial Gateway of Brisbane by providing additional land required for industrial developments, services and facilities compatible with the continued operation and growth of the airport; and
- to advocate for the enhancement of the surrounding road network.

LAND USE ZONES

The five land use zones are shown in Figure 19 and discussed in Chapter 12.

The zones are:

- SP5 Special purpose (Airport)
- General Industry
- Light Industry/low Impact Industry
- CF3 Community facilities (Cemetery) (Gods Acre Cemetery)
- Conservation.

The land use plan for the airport is generally consistent with the strategies and policies of Brisbane City Council and the State Government and the regional strategy for South East Queensland.

The land use and zoning provisions generally follow those in the Brisbane City Plan, with variations responding to the conditions in each location at the airport, and the interfaces to surrounding land.

AVIATION, LAND USE AND DEVELOPMENT PRECINCTS

The Master Plan divides the airport into eight precincts as shown in Figure 20 and discussed in Chapter 12.

These precincts are:

- **Runway**—which comprises all of the land used for runway and primary taxiway purposes.
- **Beatty**-this comprises land between Beatty Road and the secondary runways, north of the eastern most end of Runway 10/28.
- **Mortimer**—which is in the south east corner of the airport and extends to both sides of Beatty Road.
- **Beaufighter**—including land along Mortimer Road and Lores Bonney Drive, west to Oxley Creek, and north to the main runway complex.
- **Wirraway**—which is on the north side of the main runway complex and west of the secondary runways.
- **Boundary**—located along the south side of Boundary Road, between Beaufighter Avenue and the secondary runways;
- **Ashover**—located along the east side of Ashover Road, and bounded to the north by Balham Road and to the east by the secondary runway complex; and
- **Barton**-extending along the Barton Street frontage, and south along Beatty Road, to Boundary Road.

The primary functions and future plans for each of these precincts are discussed in Chapter 12.

AVIATION FACILITIES AND FUTURE NEEDS

Existing facilities

The airport has a multi-runway configuration comprising two parallel runways in two directions. The main runway complex is oriented 10/28, and the secondary grass runways are oriented 04/22. Helicopter operations are facilitated with two helipads and separate parking areas (including one heliparking area for QGAir, and two parking bays at LifeFlight site 676). Aircraft parking is currently available for 200 fixed wing aircraft in sealed and grass tie down spaces.

The airport currently has 169 sites, of which 120 are developed with structures. There are 72 hangars and aero port sites (most being able to accommodate multiple aircraft), and there are over 166 aviation and non-aviation businesses on site employing hundreds of people.

These features are shown in Figure 4.

Forecast aviation needs

The Master Plan forecasts that by Year 2042, Archerfield Airport will be catering for up to 295,000 aircraft movements per year. More detail on trends, influences and assumptions behind the forecast is provided in Chapter 5.

Aviation projects

The Master Plan identifies a number of projects planned to improve the operation of the airport over the next 20 years, and describes the priorities for the initial 8 years (to 2030).

The Master Plan does not commit AAC to implementing all of these projects, but rather sets out its vision and intentions based on its current understanding of the airport, the aviation and non aviation activities, and the emerging trends that impact on its operation.

Details of these proposals are given in Chapters 7 and 8.

Visual and non visual navigational aids

Global Positioning Systems (GPS) are becoming a primary navigational aid for aircraft operations. Two GPS approach procedures RNAV-$Z_{(GNSS)}$ have been prepared for airport operations.

The Non-Directional Beacon was decommissioned by Airservices Australia in May 2016 and replaced by a RNAV-$Z_{(GNSS)}$ procedure for Runway 10L (Category C). Runway 28R has an existing RNAV-$Z_{(GNSS)}$ procedure.

As part of the works implemented for Project AIM, AAC in 2021 installed new pilot activated landing lights to the 10L/28R runway and associated taxiways, Runway Threshold Identification Lights (RTILs), and a new Precision Approach Path Indicator (PAPI) system.

These upgrades have enhanced flying operations in a broad range of meteorological conditions, and will also provide to the flying training industry a more marketable product when promoting the airport as the preferred location to learn to fly.

Details of these aspects are given in Chapters 6 and 7.

Opportunities to improve the district and regional road network

The State Government and Brisbane City Council continue to identify progressive improvements to the regional and district road network, to better cater for growth in the region. AAC is participating in this process.

As discussed in Chapter 10, there is also scope to improve the efficient operation of the road network in the vicinity of Archerfield Airport, and where these initiatives relate to actions that could be taken on airport land, they have been incorporated into the Precinct Structure Plans (PSPs) described in Chapter 12.

The earlier master plans foreshadowed the creation of Barton Street, linking Balham Road and Beatty Road. This new link addressed a significant shortcoming in the district road network, and facilitates the movement of vehicles east-west through the Archerfield area.

The Master Plan also recognises a number of existing shortcomings of Beatty Road. AAC is increasingly concerned about the limited capacity of the road to carry existing (and growing) volumes of through traffic, passing the airport and the impacts these flows have on the safe and efficient access to the airport and to other properties along the road.

The solutions include road widening, construction of an appropriate road cross section (with appropriate lane widths, drainage and other infrastructure, to reflect the important role of this road), and upgrading of intersections, to better handle traffic passing the airport.

Where these solutions involve the airport, there is also the opportunity to consider how they could be fairly and reasonably implemented, and the role (if any) that Archerfield Airport could play in this. In anticipation of the road and intersection upgrading works planned by BCC, the Master Plan shows locations where (subject to further investigation and design) airport land could be set aside for road widening by BCC. AAC will continue to work with BCC to enable the upgrading to take place.

AIRSPACE PROTECTION

Chapter 9 describes how AAC will seek to ensure the continued protection of the airport airspace, consistent with the *National Airports Safeguarding Framework* (NASF) prepared by the National Airports Safeguarding Advisory Group (NASG) and adopted for implementation by all levels of government in 2012.

The NASF guidelines are reflected in State Planning Policy, and in the provisions of Brisbane City Plan.

Prescribed airspace

Prescribed airspace at Archerfield is shown in Figure 11—*Current Obstacle Limitation Surfaces (OLS) and Procedures for Air Navigation Services—Operations surfaces (PANS-OPS)* (OLS/PANS-OPS). The OLS and PANS-OPS for the reconfigured runways is shown in Figure 12.

Restricted Light Zones

Pilots rely on aeronautical ground lights, such as runway lights and approach lights to guide their safe landing during inclement weather and outside daylight hours.

It is important that other lighting in the vicinity of airports is specified, configured and maintained so it does not distract pilots, or confuse them.

Significant new lighting on land within 6km of the centre point of each 10/28 runway has the potential to conflict with aeronautical ground lights, and requires detailed assessment and approval.

The primary area of concern is shown in Figure 13. Within the 6km area, four light control zones have been mapped, extending beyond each end of the 10/28 runways. These are designated 'A', 'B', 'C' and 'D'. For each area, a maximum allowable intensity of light is specified, to allow pilots to safely navigate to land at Archerfield.

The zones have been mapped consistent with CASA guidelines and NASF Guideline E. All proposals for significant lighting within 6km of the 10/28 runways must be assessed, and advice from CASA may be required to ensure

that lighting meets the requirements of the NASF and Civil Aviation Regulations.

Wildlife buffer zones

Wildlife buffer zones have been defined for each runway and are shown in Figure 13. In accordance with the NASF guideline C, three zones are specified, at 3km, 8km and 13km from the runways. Within each zone, the NASF guidelines provide recommendations on appropriate land use, and mitigation measures required to minimise the hazard of wildlife strike to aircraft.

Forecast noise impact—ANEF and N70

A 20 Year Australian Noise Exposure Forecast (ANEF) (Figure 14) has been endorsed for Archerfield.

The ANEF illustrates noise associated with use of the main and secondary runways, and helipads. The secondary runways have been assessed both in their current 04/22 alignment, and following the proposed realignment to a bearing of 01/19 (to be designated 18/36 to avoid confusion with the new parallel runway at Brisbane Airport).

The ANEF is based on an estimated 294,112 aircraft movements per annum by 2042. These are broken down as 261,090 fixed wing and 33,022 helicopter movements.

The ANEF takes into account current standards, the projected aircraft movement patterns, and the likely total number of aircraft movements and aircraft mix in 2042.

AAC has also prepared N70 mapping. This shows how many aircraft movements with noise levels over 70 dB(A) are forecast per day by the year 2042. This mapping (Figure 15) assists with assessing the potential noise effects of aircraft on land around the airport, in the longer term.

More details on the ANEF and the N70 mapping are provided in Chapter 9.

Current and proposed noise management initiatives and procedures adopted by AAC are discussed in the *Airport Environment Strategy* (starting at Chapter 13, and including 16.10 and 18.10).

Windshear and turbulence

Buildings in proximity to the runways have the potential to cause turbulence or windshear, which can impact on the safe operation of aircraft.

NASF guideline B is referred to by AAC when it evaluates building proposals on the airport, or provides advice on proposals in the immediate vicinity.

Buildings that could pose a safety risk are those located within a rectangular 'assessment trigger area' around the runway ends. These are shown in Figure 16.

Within this area, buildings are allowed provided their height is no greater than 1m for each 35m setback from the runway centreline. Any proposed buildings that exceed the 1 in 35 ratio are subject to further detailed assessment.

Public Safety Areas

State Planning Policy calls for the identification of public safety areas (PSAs) at the end of the runways at 13 airports in Queensland including Archerfield.

Within these areas which extend over neighbouring land 1000m from each end of the runway, planning decisions need to take into account the higher risk of aircraft accidents.

The PSAs for Archerfield are shown in the *Master Plan Vision* (Figure 2) and the 20 Year *ANEF* (Figure 14).

ENVIRONMENT STRATEGY

AAC recognises the importance of maintaining, restoring, and where practical, enhancing the quality of the environment on Archerfield Airport and neighbouring areas.

These matters are addressed in the Airport Environment Strategy (AES) in Chapters 13-16 and 18.

It sets out AAC's environment policy and management arrangements, describes existing environmental conditions and issues, achievements over the past 24 years, and future plans and priorities.

REALISING THE VISION AND IMPLEMENTING THE MASTER PLAN

The ways in which this vision can be achieved are explored in more detail in the various concepts presented in the Master Plan.

Plans are in place for projects including:

- Further improvements to the aprons, taxiways and other aviation facilities, capitalising on the Project AIM works which have lengthened and strengthened the main runway and associated taxiways to cater for freight, corporate, aeromedical/emergency rescue and RPT aircraft;
- realignment of the secondary grass runways to provide opportunities for more aviation uses to be accommodated adjacent to the main runway complex, accommodate future expansion for aviation and related development, and improve usability;
- creation of new aviation opportunities in the Wirraway, Beatty, Barton, and Mortimer precincts; close to the main runway complex, and the proposed realigned and upgraded secondary runway complex;
-
- further development of aviation and other tenancies in the areas adjacent to the upgraded Eastern Apron, in a prime location adjacent to the eastern end of the main runway, and accessible from taxiways Bravo and Hotel;
- provision of additional aviation tenancies and supporting uses in the area between Apron Juliet and the secondary runways, with the full potential to be realised following realignment of the runways;
- reservation of land to facilitate Council's planned works for widening and upgrading of Beatty Road, and improvements to access to the airport from adjacent roads, and at the main intersections;
- further improvements to stormwater drainage; and
- creation of serviced lots suitable for a range of industrial, commercial and aviation compatible purposes in the Boundary, Ashover, Barton, Beatty, Mortimer and Beaufighter precincts.

The success of these ideas will be underpinned by AACs philosophy of pragmatic commercial management, and to sound environmental management.

In conjunction with servicing agencies and relevant development interests on airport and in the district, AAC will develop progressively the airport infrastructure.

This will facilitate the continued safe and successful operation of the aviation and non-aviation aspects of the airport enterprise.

To assist with the implementation process, AAC facilitates the *Archerfield Airport Community Aviation Consultation Group*, and the *Planning Coordination Forum*. More details on the role and function of these is provided in Chapter 18 (section 18.11).

DRAFT September 2022

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 1 **Airport location**

Archerfield
Brisbane's Metropolitan Airport

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1 Introduction

1.1 ARCHERFIELD AIRPORT

Archerfield Airport is Brisbane's metropolitan airport and is located only 11kms from the Brisbane city centre. It hosts a wide variety of aviation services including fixed and rotary wing operations, general and corporate aviation. The airport is used primarily for flight training, air transport, charter, medical retrieval, emergency rescue and jet bases.

Today it remains Queensland's largest general and corporate aviation airport, and it has a strategic and growing role in the network of aviation facilities serving Queensland.

This role is complementary to the activities of Brisbane Airport. Archerfield provides relief for Brisbane Airport from smaller aircraft, and valuable aviation services to the City. The airport operates 24 hours per day, throughout the year and is positioned to remain one of Australia's premier metropolitan airports. The Master Plan will guide our growth over the next 20 years with the capability to attract and host aviation businesses.

1.2 ARCHERFIELD AIRPORT CORPORATION

Archerfield Airport Corporation (AAC) has operated and managed Archerfield Airport, Brisbane since 19 June 1998 and actively governs the strategic and day-to-day direction of the airport.

AAC, as Airport Leasing Company (ALC), is a wholly owned subsidiary of Miengrove Pty Ltd.

AAC has injected over $63 million into the repair, restoration and renewal of the airport since 1998, supporting our vision for continuous improvement in capacity and capability.

Today, the airport business is a robust economic entity. It contributes hundreds of thousands of dollars to public coffers through rates paid to Brisbane City Council (BCC) and payments in lieu of State land taxes. Additional information about the contribution of the airport to the economy is provided in chapter 4.

These contributions will continue to rise as more of the available land mass is brought to commercial purpose, and wider use is made of the existing and upgraded aviation infrastructure.

This will be achieved by encouraging 'best practice' for both aviation and non aviation activities, by progressively improving the aviation facilities, operations and airspace and by the Corporation being proactive in attracting complementary developments, uses and activities to Archerfield Airport.

1.2.1 Objectives

AAC is committed to:

- expand the aviation activities, capacity and capability of the airport to cater for existing and emerging needs;
- provide facilities that enhance the safety and reliability of airport operations;
- encourage and work with the aviation community to ensure that Archerfield Airport is recognised as an aviation centre of quality and is positioned to experience its share of healthy growth;
- apply appropriate pricing policies for recovery of aviation related costs;
- restore, protect and where possible enhance the airport environment;
- attract quality commercial developments to land that is not required for aviation purposes in the long term, consistent with land use planning for this part of Brisbane; and
- build partnerships with government, industry and the local community to facilitate the realisation of this vision.

These core values underpin the vision for Archerfield Airport, and the actions proposed to implement the features of this Master Plan.

1.3 PURPOSE OF THE MASTER PLAN: A FRAMEWORK FOR THE FUTURE

The Master Plan is a high level, strategic business plan that sets the overall direction for the efficient and economic development of the airport for the next 20 years (2022-2042) with some elements planned to ultimate capacity.

A key purpose of it is to demonstrate to the public AAC's intended uses of the land at the airport. It describes also priority actions for the initial 8 year planning period.

It provides the basis for the timely and coordinated development of aviation facilities and infrastructure, aviation and non aviation land use, and for appropriate management of the airport environment (in conjunction with the 2022 *Airport Environment Strategy*).

It indicates to the public and other stakeholders the intended uses of the airport site, and its relationship to the surrounding area. It seeks to minimise where possible conflicts between uses on the airport site, and between the airport and surrounding land. It also seeks to highlight opportunities for compatible use and development to the mutual benefit of the airport and the wider community, consistent with the *National Airports Safeguarding Framework* which has been adopted by all levels of government.

The Master Plan:

- describes the overall vision and development objectives for the airport;
- looks back on the past 24 years, and also identifies the emerging factors that are shaping the future of the airport;
- sets out the key issues and opportunities facing the airport;
- identifies ways for addressing these issues and embracing these opportunities;
- describes key development initiatives, and the catalyst for these; and
- defines the consultative and decision making processes that have been, and will continue to be, followed as the airport develops over the coming years.

This is the fifth master plan prepared by AAC. The first was approved in 1999 and was revised in 2000 to incorporate an updated ANEF. The second master plan was approved in 2005, and addressed the period 2005-2025. The third master plan was approved in 2012 for the period 2011-2031. The current Master Plan was approved by the Minister for Infrastructure and Transport on 15 July 2017.

1.4 LEGISLATIVE FRAMEWORK

Commonwealth laws and regulations about land use planning and development controls, environmental management, airspace protection and building and construction approvals apply to Archerfield Airport.

In summary:

- the *Airports Act 1996* (and regulations) and the *Airports (Protection of Airspace) Regulations 1996* provide the regulatory framework for Federally leased airports;
- the *Airport Master Plan* provides a framework for land use and aviation infrastructure development decisions according to a 20 year vision;
- the *Airport Environment Strategy* identifies the environment protection issues that relate to the airport, and actions and procedures that will be followed to ensure that the environment is restored and managed appropriately;
- there are clearly defined roles and responsibilities for AAC and the Airport Building Controller (ABC) to ensure that all development meets relevant standards and is consistent with the long term vision for the airport; and
- major developments (as defined in the *Airports Act*) require additional approval in the form of a *Major Development Plan* (MDP). A MDP is prepared in consultation with the public and other stakeholders and is ultimately assessed by the Minister responsible for the Act.

The airport is on Commonwealth land, so any proposal that is likely to have significant impact on the environment also requires assessment under the *Environment Protection and Biodiversity Conservation Act* (EPBC Act). Guidance

on the assessment of environmental values (including heritage), likely impacts (and mitigation), and whether approval is required under the EPBC Act is provided in *Significant Impact Guidelines* published by the Commonwealth (Guidelines 1.1 and 1.2).

A list of key legislation relevant to planning and environmental management at Archerfield is included in Appendix B. Commonwealth guidelines on the application of the EPBC Act are included in the list of references in Appendix C.

1.4.1 Airport operators and airport regulators

The *Airports Act 1996* establishes the framework for the regulation of leased Federal airports.

The Act provides a system for separating the roles of the airport operator and airport regulator.

In the case of Archerfield Airport, the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) and the Civil Aviation Safety Authority (CASA) provide the regulator role.

AAC, being the Airport Leasing Company (ALC) undertakes the airport operator role. It is primarily responsible for activities that take place on the ground and within airport confines and the protection of the airport airspace.

The principal responsibility for airspace management is held by Airservices Australia (AsA). AsA provides terminal services from the Archerfield Tower and en route services around the airport from Brisbane Centre.

Operational issues are addressed jointly by AAC and AsA, and AAC is proactive in identifying relevant aspects and potential solutions as appropriate to ensure the ongoing safety and operational efficiency of the airport for users.

Following the sale and privatisation of Archerfield Airport under the *Airports Act 1996*, the Commonwealth became both the landlord with responsibility for facilitation of the businesses it had transferred to private ownership, and the regulator of those same businesses.

Moreover, the Commonwealth established a common framework for the future operation of those businesses. The framework was designed with sufficient robustness to control the national interest at the major ports of Sydney, Melbourne, Brisbane and Perth. The *Airports Act 1996* identifies those airports as 'core regulated' airports.

During the sale process, it was projected that a light handed regulatory regime within the framework would apply to lesser economic entities like Tennant Creek, Archerfield, Alice Springs and Parafield. As such, these airports were not defined as 'core regulated' airports within the *Airports Act 1996* or associated regulations.

1.4.2 Scope and content of the Master Plan

Section 71 of the *Airports Act 1996* and *Regulation 5.02* stipulate that an airport master plan must address the following matters:

- AAC's development objectives for Archerfield Airport (Chapters 2, 3, and 12);
- AAC's assessment of the future needs of civil aviation users of the airport, and other users of the airport, for services and facilities relating to the airport (Chapters 2-7, 10 and 11);
- AAC's intentions for land use and related development of the airport site, where the uses and developments embrace airside, landside, surface access and land planning/zoning aspects (Chapters 2, 7, 10-12, and 16; and Figures 2, and 19-26);
- an Australian Noise Exposure Forecast (ANEF) for the areas surrounding the airport (Chapter 9 and Figure 14);
- flight paths at the airport (Chapter 6 and Figures 5-9);
- AAC's plans, developed following consultation with airlines using the airport and local government bodies in the vicinity of the airport, for managing aircraft noise intrusion in areas forecast to be subject to exposure above the significant ANEF levels (Chapters 9 and 13-16; and Figures 14 and 15);
- AAC's assessment of environmental issues that might reasonably be expected to be associated with the implementation of the master plan (Chapters 13-16);
- AAC's plans for dealing with any identified environmental issues (Chapters 14-16 and 18);
- A ground transport plan for first 8 years of the master plan (Chapters 10, 12 and 18; and Figures 2-4, 17, and 21-26) describing a ground transport system on the landside of the airport that details:
  - a road network plan;
  - the facilities for moving people and freight at the airport;
  - the linkages between those facilities, the road network and public transport system at the airport and the road network and public transport system outside the airport; and
  - the arrangements for working with the State or local authorities or other bodies responsible for the road network and the public transport system;
  - the capacity of the ground transport system at the airport to support operations and other activities at the airport; and
  - the likely effect of the proposed developments in the master plan on the ground transport system and traffic flows at, and surrounding, the airport;

- detailed information on the proposed developments in the initial 8 year term of the master plan that are to be used for:
  - commercial, community, office or retail purposes;
  - any other purpose that is not related to airport services; (Chapter 12)
- the likely effect of the proposed developments in the initial 8 years of the master plan on:
  - employment levels at the airport; and
  - the local and regional economy and community, including an analysis of how the proposed developments fit within the planning schemes for commercial and retail development in the area that is adjacent to the airport;
- an environment strategy for the initial 8 years of the master plan (Chapters 13-16 and 18) that details:
  - the airport-lessee company's objectives for the environmental management of the airport;
  - the areas (if any) within the airport site which the airport-lessee company, in consultation with State and Federal conservation bodies, identifies as environmentally significant;
  - the sources of environmental impact associated with airport operations;
  - the studies, reviews and monitoring to be carried out by the airport-lessee company in connection with the environmental impact associated with airport operations;
  - the time frames for completion of those studies and reviews and for reporting on that monitoring;
  - the specific measures to be carried out by the airport-lessee company for the purposes of preventing, controlling or reducing the environmental impact associated with airport operations;
  - the time frames for completion of those specific measures; and
  - details of the consultations undertaken in preparing the strategy (including the outcome of the consultations); and
  - any other matters that are specified in the regulations;
- if an environment strategy has been approved—the date of that approval (Chapters 1, 13 and 14);
- any other matters (if any) as are specified in the regulations.

The approved master plan relates to a planning period of 20 years. It remains in force until a fresh master plan is approved by the Minister.

1.4.3 Additional approval requirements for major projects

For major projects, the *Airports Act 1996* requires the preparation and approval of a *Major Development Plan* (MDP). The types of projects requiring a MDP include:

- constructing a new runway;
- extending the length of a runway;
- altering a runway (other than in the course of maintenance works) in any way that significantly changes flight paths, or the patterns or levels of aircraft noise;
- constructing a new passenger terminal building with a gross floor space greater than 500 square metres in area;
- extending a passenger terminal, where the extension increases the building's gross floor space by more than 10%; and
- development that is likely to have significant environmental or ecological impact, including one which affects an area identified as environmentally significant in the *Airport Environment Strategy*.

A MDP is also required for projects that have a value in excess of $25 million (or an alternative prescribed amount) and involve construction of:

- a new building; or
- construction of a new taxiway or extensions to a taxiway, a new road or new vehicular access facility (or extensions), a new railway or new rail handling facility (or extensions), that significantly increase the capacity of the airport to handle movements of passengers, freight or aircraft.

The requirement for a MDP applies also to:

- a development of a kind that is likely to have significant environmental or ecological impact; or
- a development which affects an area identified as environmentally significant in the environment strategy; or
- a development of a kind that is likely to have a significant impact on the local or regional community; or
- a *sensitive development* in relation to which the Minister has given an approval under section 89A.

The *Airports Regulations* (made under the *Airports Act 1996*) can also specify the kinds of development requiring approval via a MDP.

If a MDP is required, it is prepared by the airport leasing company (AAC), in consultation with a range of stakeholders and must cover a wide range of matters as set out in the Act. The Minister responsible for the Airports Act makes the final decision on whether to approve a proposed MDP.

1.4.4 Airport Environment Strategy (Chapters 13-16 and 18, and Appendix D)

Scope

The *Archerfield Airport Environment Strategy 2022* (AES):

- sets out AAC's objectives for the environmental management of the airport;

- identifies environmentally significant areas within the airport;
- identifies sources of environmental impact associated with airport operations;
- defines studies, reviews and monitoring to be carried out in relation to the environmental impact of the airport;
- sets timeframes for completion of audits and reviews;
- sets out specific measures to be implemented by AAC to address existing or potential impacts, and timeframes for completion of these; and
- provides details of consultation undertaken in preparing the AES.

Contents of AES

The current AES was approved on 15 July 2017 and remains in operation until replaced by another approved AES.

In accordance with the *Airports Act*, the AES planning period commences simultaneously with the Master Plan, and runs for at least 8 years.

The AES comprises:

- a statement of environmental responsibilities that apply to Archerfield Airport;
- a description of the Airport Environmental Management System, including the process by which AAC will implement the AES and related environmental management procedures;
- the AAC corporate environment policy;
- a summary of existing environmental issues, management responses to those issues, and an action plan to address them; and
- details of the ongoing consultative processes AAC will adopt in implementing and reviewing the AES.

Principal environmental management issues

The principal environmental management issues at Archerfield Airport are:

- management of new development works to minimise and ameliorate impacts on the environment;
- conservation of any significant flora and habitat values along Oxley Creek;
- protection of storm water and groundwater quality from contamination by pollutants from the airport;
- encouraging the efficient use of water and energy;
- ensuring that all chemicals on airport are appropriately stored, handled, used, and disposed of;
- encouraging the prevention, containment and management of spills;
- appropriate containment and handling of all asbestos in buildings and plant on airport (as identified in the asbestos register and management plan);
- protection of any cultural and heritage values (pre and post contact); and

- ensuring that airport tenants are aware of their environmental obligations and comply with all relevant requirements.

1.4.5 Aviation Transport Security Act 2004 and Aviation Transport Security Regulations 2005

This legislation, administered by DITRDCA, requires AAC to take account of security requirements in its planning processes. A summary of the security measures implemented at Archerfield in recent years is provided later in the Master Plan.

1.4.6 Airspace Protection and National Airports Safeguarding Framework

The airspace around leased Federal airports is protected under Part 12 of the *Airports Act 1996* and the *Airports (Protection of Airspace) Regulations 1996*.

The *National Airports Safeguarding Framework* (NASF) first adopted by all levels of government in 2012 provides guidance for planning and development decisions that could affect aviation operations.

The framework applies to all airports in Australia, and land around airports. The framework promotes a consistent approach to assessing and managing land use and development in the vicinity of all airports.

AAC aims to minimise the potential encroachment of activities and development in the vicinity of the airport, where these have the potential to impact on airport operations, capacity and capability, now and into the future.

It will continue to work with BCC and other authorities to ensure that land use and development in the vicinity of the airport is undertaken such that:

- noise sensitive land uses are only carried out in areas subject to aircraft noise impacts if they are sited in accordance with the relevant standards and include appropriate noise protection measures;
- there are no intrusions into the protected operational airspace;
- the potential for wildlife strikes is minimised;
- the potential for distractions to pilots from lighting is minimised;
- building generated wind shear and turbulence is addressed in the siting and design of nearby development; and
- public safety is addressed, in accordance with the relevant policies and standards, including State Planning Policy.

With this in mind, the Master Plan includes:

- mapping of the endorsed 20 year ANEF for Archerfield;
- mapping showing the current and future airspace for the airport, which is protected under the *Airports (Protection of Airspace) Regulations* and the *Airports Act 1996*. This mapping shows the maximum allowable height of any structures, objects (including trees) or other features to protect the airspace from any intrusions that could compromise the safe and efficient operation of the airspace;

- mapping of the public safety areas for each end of the main runway, in accordance with State Planning Policy; and
- zones where light emissions need to be restricted, to avoid dazzling pilots or confusing them about the location of approach or runway lighting.

From a planning perspective, the NASF principles have been encapsulated in State Planning Policy (SPP) and related guidelines, and planning provisions to safeguard the airport are included in the Brisbane City Plan.

More detail is provided in Chapter 9.

1.4.7 Civil Aviation Safety Regulations (CASR) 1998

CASR 139.065 and 139.355 specify that aviation facilities and obstacle limitation surfaces (OLS) at a Certified aerodrome must meet the standards set out in the associated *Manual of Standards Part 139-Aerodromes* (MOS 139).

1.4.8 Other government planning policy requirements and guidelines

Other government policy and planning requirements and guidelines impacting on the preparation of this plan are considered in Chapter 3.

2 The vision for Archerfield Airport

2.1 THE VISION-AN AIRPORT WITH A SUSTAINABLE FUTURE

Archerfield plays a significant role in Queensland. It is Queensland's primary general aviation airport, a major airport in south—east Queensland, and is Brisbane's metropolitan airport.

AAC's corporate mission is to strive to nurture the dynamic potential of Archerfield Airport as a superior aviation destination.

The airport will become a sustainable aviation and enterprise hub, integrated with and serving the growing needs of Brisbane. The *Master Plan vision* is illustrated in Figure 2.

2.1.1 A centre of aviation excellence

Archerfield will continue to develop as a centre of excellence for aeronautical and related activities.

It will continue to be the base for significant flying training activity, corporate, charter, aeromedical and emergency services. It will also serve the needs of aircraft maintenance, sales, insurance and specialist aviation businesses, and activities relating to the development and implementation of emerging technologies including those related to Advanced Air Mobility.

The aviation infrastructure will be developed progressively to meet the changing needs of the airport.

AAC will continue to work with existing aviation businesses on the airport to encourage their long-term sustainability, will encourage the upgrading and development of new facilities, and will seek to attract new viable aviation businesses, where these are compatible with the vision for Archerfield.

2.1.2 Diverse aviation activity

To continue to attract investment for development, AAC will promote growth and diversification in aviation activity by planning facilities for:

- heavier general and corporate aviation aircraft;

Direct access to motorway

ROCKLEA

Commercial and transport related support services (office, fuel, food, repairs etc)

Parking, display, storage

Road access to Barton Precinct

Ipswich Motorway

Randolph Street

Balham Road

Barton Street

Road widening investigation area shown hatched

Development oriented to face Barton Street and Beatty Road

Industrial, display and sales, commercial, service, office, conference and events

Larger industrial sites for manufacturing, warehousing, transport etc.

Ashover Road

Road widening investigation area

Circuit

Ashover

Beatty Road

18R

18L

Aircraft parking

Relocated northern helipad

Boundary Road

New intersection for access to aviation and industrial developments

Realigned secondary runway complex usable in a range of weather conditions

Multi purpose hangars and industrial tenancies potential location for Advanced Air Mobility and emerging technologies

Road widening investigation area

Taxiway Hotel extended north

Potential secondary cycle route in Boundary Road (as shown in Brisbane City Plan)

BP Truck Stop

Beaufighter Avenue

Logistics Drive

Transition Drive

Stormwater treatment facilities

Potential additional basin

Potential additional basin

New access road for aviation and industry

Proposed Runway 18R/36L

Proposed Runway 18L/36R

Aircraft parking

Boundary Road extended into airport

Potential for smaller lots fronting Wirraway Avenue

Fire protection services

Drainage from central sub catchment conveyed to new basins

Wirraway Avenue

'Public Safety Area' as defined in State Planning Policy and related guideline

Additional aviation capacity on north side of main runways for corporate and specialised aviation (emergency services, RPT, air taxi, freight etc (following realignment of secondary runway complex)

Future aviation capacity

Western Apron

Future aviation capacity

Potential site for RPT / air taxi

Potential long term car parking (~800 cars)

Provision made for public transport access to RPT

Taxiway Charlie

Taxiway Golf

Taxiway Delta

Aircraft parking

Ground access to new aviation tenancies

Potential secondary cycle route in Beatty Road (as shown in Brisbane City Plan and SEQ Principal Cycle Network Plan)

Taxiways widened/upgraded to meet emerging needs

10L

Taxiway Bravo (widened to Code C)

ARP

Drainage from central sub catchment conveyed to new basins

Relocated central helipad

Airport Administration and Terminal Building

Taxiway Foxtrot

New road entry to airport created by extending Kerry Road

Kerry Road

Taxiway Echo

Fuel farm

Turbine pad

Archerfield Square providing a range of retailing, service, accommodation and other support uses for the airport community, visitors and local area.

Future aviation capacity (RPT, air taxi etc)

Eastern Apron

10R

Runway 10L/28R

36L

36R

Taxiway Alpha

Taxiway Bravo (widened to 15m (Code C)

Runway 10R/28L

28L

28R

New access to Ditchmen Ave

OXLEY CREEK

Buffer to Oxley Creek (incorporating stormwater management facilities and other infrastructure, conservation of riparian vegetation, and grazing/slashing of cleared land) No public access

Beaufighter Avenue

Stormwater basin 1

Potential court off Lores Bonney Drive

Runway upgraded for up to Code C aircraft; including for RPT, specialised freight, aeromedical and similar services

Road widening investigation area shown hatched

Light industry, storage, parking (possibly in conjunction with uses in the mixed use zone)

Southern Apron

Taxiway Sierra

'Public Safety Area' as defined in State Planning Policy and related guideline

The design of new intersections with external roads will be determined in consultation with BCC

Archerfield Speedway

Lores Bonney Drive

Mortimer Road

Lombank St

Mixed use zone at the interface to neighbouring residential and open space areas. Potential for light industry, display, office, aviation student and short term accommodation, convenience retail/food and support services, recreation

Industrial sites, suited to a range of manufacturing, warehousing, transport etc uses

Control Tower Optimal location to be reviewed when secondary runway complex is realigned

New development adjacent to Lores Bonney Drive/Mortimer Road oriented to address Mortimer Road (light industry, display, office, service uses)

N

0 500 m

Key

- Archerfield Square
- Heritage curtilage
- Heritage features and buildings (refer to Heritage section of Airport Environment Strategy)
- SEQ Principal Cycle Network
- Potential secondary cycle network incorporated into roads in the vicinity of the airport

Archerfield

Brisbane's Metropolitan Airport

Draft September 2022

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 2 **Master Plan vision**

PlannedFX Planning Environment Strategy Design

- operations under instrument flight rules (IFR);
- aeromedical and emergency rescue aircraft;
- flying training, including facilities for learning and student accommodation;
- Advanced Air Mobility and emerging technologies;
- charter and RPT operations, and supporting services; and/or
- specialist air freight activity.

2.1.3 Serving the growing needs of Brisbane and regional Queensland

AAC's vision includes catering for niche corporate aviation including business, charter, aeromedical/emergency rescue, Advanced Air Mobility and emerging technologies, fixed base operations (FBO) and Regular Public Transport (RPT) service providers seeking to take advantage of the airport's unique position in one of Brisbane's most important industrial and commercial growth centres, its position close to the newly designated western and south western growth corridors, and its proximity to the Brisbane City centre, hospitals and commercial hubs.

These additional activities will require improvements to the aviation infrastructure, including the runways, taxiways, navigation aids, airspace and tenant occupation requirements.

These improvements can be made progressively, and can be accommodated in a manner which is compatible with the airport's existing range of services.

2.1.4 A place for enterprises to grow

Archerfield will also play a strategic role in the development of the *South West Industrial Gateway* of Brisbane. The Gateway has been designated by the Queensland State Government and Brisbane City Council (BCC) as one of the most important industrial areas in South East Queensland.

AAC will work with BCC and the State Government to identify opportunities to attract and foster new industrial and commercial business investment that is:

- complementary to the airport and its users;
- meets the emerging needs of the community and economy of this part of Brisbane and the designated regional growth corridors which extend to the south and to the west; and
- is consistent with the aviation activities and the use and development of land in the surrounding area.

The promotion and development of new aviation and non-aviation business at Archerfield is necessary to discharge the responsibility entrusted by the Commonwealth to AAC and to underpin growth in aviation and the efficient provision of improved infrastructure at the airport.

It will strengthen the facilities and services that are provided, and the contribution that the airport makes to the community, environment and economy of Brisbane and South East Queensland.

It will also help to harmonise the airport with off-airport development and appropriately integrate the airport with the rest of the south-west gateway to Brisbane.

2.1.5 An environmentally sustainable airport

AAC will also pursue sustainability principles, in the operation and management of the airport, and in new development.

These address:

- protection of the Oxley Creek corridor;
- protection of air quality;
- capturing and reuse of rainwater;
- appropriate management of stormwater to protect downstream areas from excessive peak discharges, and from water quality impacts;
- protection of soil and groundwater from contamination;
- handling and storage of hazardous materials and waste;
- conservation of heritage values;
- efficient use of potable water;
- efficient use of energy by AAC and its tenants;
- maximising where feasible the use of renewable energy;
- management of noise from land based activities at Archerfield; and
- working with Airservices Australia and aviation users to minimise noise from aircraft operations.

These matters are addressed in the AES and in AAC's Environmental Management Procedures (EMPs).

2.2 REALISING THE VISION

The Master Plan shows how the current and long term aviation development will be accommodated.

It describes the proposed improvements to aviation infrastructure that AAC has identified in consultation with stakeholders over the past 24 years as being desirable to foster sustained aviation activity at Archerfield.

The aviation infrastructure development proposals have been designed to be implemented progressively as the airport develops.

The Master Plan also details the plans for areas that were identified by the Commonwealth prior to privatisation as being available for complementary new

business development. It shows how this will be integrated with the other activities (existing and planned) on the site, and land use and development in the surrounding area.

2.2.1 Aviation infrastructure development

The recent implementation of Stages 1 and 2 of Project AIM has resulted in significant upgrading of the main runway and associated taxiways, now able to cater for Code C aircraft. The works have also included improvements to lighting and navigation aids, and upgraded drainage.

Stage 3, currently under construction involves the upgrading of the Eastern Apron and the southern part of Taxiway Hotel, both of which are in close proximity to the main runway.

These works represent a once in a generation modernisation of the main aviation infrastructure, and will be a catalyst for further aviation development at Archerfield.

The Master Plan anticipates the continuation of the renewal process, with the following proposals for aviation infrastructure development:

- realigning the secondary grass parallel runways to avail approximately 500m of land immediately adjacent to the north side of the main runway for high-end aviation uses, and more than 2 ha of aviation land in the area between Taxiways Juliet and Hotel, for further aviation developments, and at the same time to improve overall runway usability, particularly for flying training;
- augmenting the taxiway system to maximise runway capacity and efficient ground movement of aircraft;
- strengthening and expanding apron facilities to cater for increased aircraft numbers, and potentially heavier aircraft;
- relocating facilities such as the fuel farm and control tower, if, because of their locations, they constrain future aviation development or their relocation would improve airport operations;
- upgrading visual and navigation aids to provide an improved flying training environment and improve access in poor metrological conditions;
- consolidating helicopter activity so as to improve safety by separating rotary from fixed wing operations;
- identifying and reserving terminal and apron facilities for potential niche RPT operations, with a focus on opportunities in the Wirraway, and Beatty precincts;
- identifying and where feasible catering for Advanced Air Mobility and other emerging aviation technologies;
- maintaining an option to construct a new, longer runway between the existing 10/28 parallel runways, potentially crossing Beaufighter Avenue;

- making new, improved bases available to tenants currently occupying ageing premises, to facilitate future growth and expansion of their businesses; and
- replacing or rejuvenating ageing premises.

2.2.2 New business development

AAC will seek to attract new business to the airport that will complement the existing aviation uses on the site and be compatible with State and BCC planning for the Archerfield area.

Potential new uses that could take advantage of the airport's unique location and facilities include:

- manufacturing industries (specialised fabrication and engineering, servicing and repair, refinishing, etc.);
- industries associated with waste reduction and materials recycling;
- research and development (equipment testing, prototype development and evaluation, emerging technologies associated with Advanced Air Mobility etc.);
- transport and logistics enterprises (distribution centres, container services, bulk handling, warehousing, fleet management, servicing etc.);
- education and training for aeronautical and transport related sectors (flying schools, vehicle driver training and assessment, etc.);
- facilities for conferences and events;
- retailing of the type currently conducted in the vicinity of the airport, and retail outlets that serve the growing needs of the airport community;
- recreation and leisure, including aeronautical, entertainment and other land based recreation activities;
- office and administration uses;
- accommodation for flying training students, tourism and visitor support services;
- aeromedical and emergency services operations and training; and
- fixed base operations.

The Master Plan identifies a range of opportunities for the expansion of existing businesses, and the introduction of new business to the airport.

2.2.3 Implementation strategies

AAC will undertake the proposed developments in response to demand triggers and/or timeframes described in Chapter 18.

AAC will be proactive in attracting complementary developments, uses and activities to Archerfield to strengthen the viability of the airport in the short to medium term, and secure its long term success.

In conjunction with servicing agencies and relevant development interests on airport and in the district, AAC will develop progressively the infrastructure serving the airport. This will facilitate the continued successful operation of all aspects of the airport enterprise.

The planning and timely delivery of the required infrastructure will involve a commitment from a variety of organisations, including BCC and the State Government. AAC will work with these agencies to realise the vision.

All initiatives will be underpinned by AAC's philosophy of pragmatic commercial management.

2.3 OVERVIEW OF ACHIEVEMENTS 1998-2022

Over the period 1998-2022, AAC has implemented significant projects foreshadowed in the successive airport master plans.

These initiatives have contributed to the realisation of AAC's vision for the airport. Key achievements over the planning period include:

Table 1: Summary of achievements 1998-2022 (AMP)

Activity	Date
Aviation infrastructure	
Repairs and reseal of aircraft parking area adjacent to Gate 1.	1999
Repairs and reseal of Taxiways Alpha 1-9, Alpha to Bravo, and Bravo 2 to 5.	2001
Repair and reseal to shoulders of Taxiway Alpha 1-5.	2002
Installation of a triple interceptor to treat water from the aircraft washdown bay, adjacent to taxiways Hotel and Juliet. The washdown bay has been signed to encourage its use.	2004
The second wash down bay (at the eastern end of Taxiway Bravo) was decommissioned in 2004. The works were removed as part of Project AIM Stage 3 in 2022.	2004
Repairs to Apron Hotel tie down area.	2004
Reprofiling and resurfacing of Runway 28L/10R with a high quality hot bitumen cement seal, and overlay of Taxiways Alpha 1 to 5.	2005
Reconstruction of the airport turbine pad.	
Repairs to northern taxiways and Taxiway Juliet.	2006
Installation of new security fencing, automated gates, optical fibre cabling and CCTV around the perimeter of the airside area.	2007
Reconstruction of Taxiway Juliet.	2008
Reseal of 28R run up bay.	2008
Repair and reseal of Taxiway Echo, Taxiway Alpha 7 and the engine test pad.	2009
Reconstruction of apron drainage (west) near Hangar 113.	2010
Construction of a new stormwater drain running along Taxiway Hotel adjacent to the terminal building.	2011
Repairs and reseal of Taxiways Alpha 8 to 9.	2013

Activity	Date
Installation of Movement Area Guidance signs beside the major runways and taxiways to assist trainee pilots conduct ground operations.	2013
Profiling and asphalt overlay of Taxiway Juliet (concrete section).	2014
Reseal of Central Helipad.	2015
Replacement and installation of a new lighting control system with future capacity for Runway, Taxiway and Apron LED and approach lights.	2015
Crack sealing of concrete joints outside Hangar 6.	2015
Reconstruction of apron drainage (east) near Hangar 113.	2016
Implementation of Project AIM, including reconstruction, strengthening and extension of the main runway (10L/28R) and related taxiways, improvements to drainage to the south of the main runway, relocation of fill material to the west of runway 10R/28L, relocation of the Airport Lighting Equipment Room (ALER) from the terminal building to a new purpose-built portable building adjacent to the Fuel Farm; commissioning of a new backup generator for essential power to the runway/taxiway lighting system and ALER, extension of the Jet Turbine parking area and adjacent run up bay; and installation of upgraded lighting and navigation aids to cater for up to Code C aircraft, ,.	2021
Implementation of subsequent stages of Project AIM; including reconstruction, widening and strengthening of taxiway Bravo to Code B standard; reconstruction and upgrading of the Eastern Apron to facilitate up to Code C aircraft parking; installation of apron lighting for night time operations; and reconstruction, strengthening and widening of Taxiway Hotel to cater for Code C aircraft south of the Terminal Building.	2022
Maintenance	
Ongoing monitoring, repairs and maintenance works completed throughout the aviation infrastructure network, as part of AACs cyclical maintenance program.	Ongoing
Complementary development	
Construction of a new hangar and headquarters for QGAir (previously known as EMQ) on Wirraway Avenue.	2003
Development of new corporate hangars on Wirraway Avenue.	2006
Construction of Site 235 hangar complex.	2006
Development of a new warehouse, office and hardstand on Beaufighter Avenue by AAC.	2008
Repair and seal Access A at the 500 sites.	2008
Refurbishment by AAC of the top floor of the Airport Administration and Terminal building, which is now the headquarters for AAC, reinstating it once again as a key operational feature of the airport, and an historic landmark.	2009
Construction of a new purpose-built office and aviation parts storage facility for Aviall/Boeing in the Beatty Precinct (Building 111).	2012
Relocation of the high pressure gas transmission pipeline to the verge adjacent to Transition-Estate in preparation for works along Boundary Road.	2012
Civil works for Transition Estate including earthworks, relocation underground of existing overhead powerlines and gas mains along Boundary Rd, construction of entry statement walls, pylon signage, diplomat fencing, installation of drainage and Gross Pollutant Trap and construction of stormwater detention basins 3, 4, and filtration basin 5.	2013
Purchase and refurbishment of the two-storey building 9 in the Archerfield Square part of the Beatty Precinct, transforming it into the airport's first aviation student accommodation facility.	2014

Activity	Date
Refurbishment of Hangar 6 for LifeFlight helicopter maintenance including a new domed roof, internal offices, refurbished windows and painting internally and externally.	2015
Refurbishment of Hangar 5, including a new domed roof, refurbished windows and drain along the southern side for Archerfield Jet Base's Fixed Base Operations (FBO).	2016
Conversion of site 676 from an office and warehouse, to a hangar and aviation facility, including two helicopter parking bays.	2017/18
Civil works for Transition Estate including construction of the Boundary Rd/Transition Drive intersection and associated turn lanes and median strips along Boundary Road, street lighting and landscaping along Boundary Road, and the initial section of Transition Drive running to the west,	2017
Civil and electrical works to establish Ashover Circuit and create a series of sites in the Ashover Precinct	2019
NBN infrastructure installation completed at Archerfield Airport	2019
Demolition of Air BP site 121, and removal of a 55Kl underground storage tank.	2020
Civil works for Transition Estate including: benching of sites; construction, lighting and landscaping of Transition Drive and Logistics Drive and associated temporary cul-de-sacs; stormwater drainage; HV pad mount transformer and electrical conduit installation; pressurised sewer system installation and connection to Wirraway Avenue; comms and NBN conduit installation; and construction of a centralised fire tanks (700Kl) and pumps system to cater for the majority of tenants in Transition Estate.	2021
Construction of a new Hangar 4 complex for a long-standing airport tenant involved in flying training, charter, engineering and maintenance.	2021
Demolition of ageing hangars in the Beatty Precinct to facilitate the Eastern Apron upgrade	2021
Facilitating the upgrade and renewal of Hangar 3 by Tisdall Aviation Group, to provide modern facilities whilst conserving identified heritage values.	2021
Refurbishment of the Air Archer café	2021
Construction of a new 4,500m^2 logistics warehouse and office on site 581 in Transition Estate	2022
Construction of a new hangar and related office and warehouse on sites 13 and 14 (adjacent to Apron Hotel), for an aviation tenant.	2022
Environmental management system	
Preparation of new airport *Environmental Management Procedures* (EMPs).	2003
AAC maintains a site register that records the environmental condition of the airport, including identification and management of contaminated sites.	Ongoing
Continued implementation and review of AAC's Environmental Management Procedures and tenant Environment Management Plans.	Ongoing
Flora and fauna	
Fire Ant control undertaken by helicopter and motorcycle broadcasting.	2001 onwards
Creation of a conservation zone in the south west part of the airport, adjacent to Oxley Creek to provide a permanent buffer.	2009
Weed control and revegetation works in the conservation zone adjacent to Oxley Creek (in conjunction with BCC)	2018 onwards
Facilitating mosquito surveillance program by QLD Health	Ongoing

Activity	Date
Groundwater	
The annual groundwater monitoring program by AAC has continued, with progressive updating and enhancement of the sampling wells, and ongoing review of findings.	Ongoing
Hazardous materials and waste management	
AAC has maintained since 2003 an up to date register of asbestos (ACM) in AAC buildings on the airport. Buildings have been added to the register as they have come into AAC ownership.	2003 onwards
A management plan and risk assessment was added to the asbestos register.	2006
The register was subject to a full review, and updated in 2017, and subsequently in 2022.	Ongoing
AAC has included in its tenant inspections consideration of materials storage, handling, waste management, and disposal.	Ongoing
Significant quantities of ACM have been removed from developments as part of demolition activities at: 004, 021, 025, 105, 110, 013, 014 and 219-A in addition to the Internal demolition and removal of all ACM from hangar 003 and the removal of ACM windbreaks located north west and south east of site 020.	Ongoing
Ongoing annual re-inspection and maintenance of low-density ACM board.	Ongoing
Heritage	
AAC has supported the restoration works by Friends of God's Acre, including with donation of funds and provision of maintenance services over the past 24 years.	1998 onwards
AAC restored the Shell building.	2001
The initial *Cultural heritage assessment and management plan* for the airport was completed.	2001
AAC purchased in 2000 and refurbished the 2nd floor of the neglected Airport Administration and Terminal building and relocated its administration offices from building 20 to the upper floors of the building.	2009
Brisbane Regional Commendation awards for both Heritage and Interior Architecture for refurbishment of the middle floor of the Airport Terminal building.	2015
Refurbishment of the ground floor public areas, and painting and waterproofing of the exterior of the Airport Administration and Terminal building.	2015
Preparation of a Heritage Management Plan for the airport, and incorporation of the findings and recommendations into the current master plan and environment strategy.	2022
Establishment of the Airport Heritage Room, in the Administration and Terminal Building	2022
Infrastructure	
Electricity supply upgraded to better cater for existing users, and new projects on the airport.	
Installation of new Fire Pump Station to service the Corporate Hangars.	2012
Installation of new 300mm water main to cater for the Corporate Hangar fire pump station and service future tenants in Transition estate.	2012
Installation of new fire hydrants, opposite Building 9, adjacent to the main carpark, opposite the Airport Administration and Terminal building, and adjacent to the carpark beside the Shell building.	2015

Activity	Date
Installation of an 86kW solar electricity generation system on Building 111 in the Beatty Precinct, providing renewable energy.	2020
Construction of a new stormwater detention basin in the Ashover Precinct, adjacent to Balham Road, to manage the flows discharged northward from the airport.	2021
Installation and commissioning of fire services tanks in Transition Estate, to cater for future development in the estate, and aviation developments in the Wirraway Precinct.	2022
Installation of a new pad mounted high voltage transformer and low voltage distribution for Transition Estate	2022
Noise	
The former QES (now QGAir) helipad and the second helipad previously located in the central part of the Beaufighter precinct (near the Control Tower) were decommissioned. The new helicopter landing pad is located near Wirraway Avenue, which is at least 1.2km away from the nearest residential properties on the south side of Mortimer Road and more than 1.4 km from the nearest house to the south-west (on the other side of the Oxley Creek/Blunder Creek valley). Previously one of the former helipads was 150 m from the nearest house.	2003
Noise emissions from tenancies on airport are managed in accordance with the EMPs and any site environmental management plan in place for their operation.	Ongoing
Implementation of Archerfield's *Fly Neighbourly* Program.	2015 onwards
Roads and car parking	
Wirraway and Beaufighter Avenues were reconstructed and extended and stormwater drains and underground piping were installed to cater for surface water runoff.	2000
Barton Street was created, linking Beatty Road to Balham Road across the north of the airport. The land was gifted by AAC to BCC with the agreement of the Commonwealth.	2007
The long-term carpark in the northern part of the Beatty Precinct was constructed.	2007
Qantas Avenue, Ditchmen Avenue and Lores Bonney Drive were resurfaced.	2008-9
Street lights installed on Lores Bonney Drive, Beaufighter Avenue and Wirraway Avenue.	2008
Extension of Beaufighter Avenue for approximately 100m to the east.	2012
Expansion of car park area outside Hangar 6 for LifeFlight.	2015
New power and telecommunications infrastructure installed, and High Pressure Gas Transmission Pipeline in Boundary Road relocated in preparation for the construction of the initial stage of Transition Drive, in the Transition Estate.	2015
Construction of the initial stage of Transition Estate, including a new intersection at Boundary Road, and installation of street lighting along Boundary Road and in the new intersection.	2017
Construction of Ashover Circuit, through the Ashover Precinct.	2020
Construction of Transition Drive and Logistics Drive and associated temporary cul-de-sacs and street lighting, and associated utility services.	2021
Soil contamination	
The underground storage tanks at the Shell Building were decommissioned and the site remediated. These works followed on from the closure and	1998

Activity	Date
remediation of the former Airport Rescue and Fire Training Area (1994) and the former battery recycling site (1997).	
Underground fuel tanks at the BP Truckstop have been replaced by BP and remediation undertaken (with ongoing monitoring in place). The requirements in the management plan were met in 2019/20, and BP is now in a monitoring and maintenance phase.	2006
Underground storage tanks removed and soil remediation undertaken for sites 108 and 109 completed	2018
Soil testing for environmental condition completed for all new developments	Ongoing
Surface water management	
The former open drainage line through the Beaufighter, Boundary, Runway and Beatty precincts (which was subject to significant scouring) has been piped, and silt traps and dissipation structures installed to moderate peak flows and manage water quality prior to discharge to Oxley Creek.	2001
A significant new stormwater detention basin was constructed in the Beaufighter precinct, treating stormwater prior to its discharge to the Oxley Creek.	2001
A sedimentation basin was incorporated in the Alex Fraser Group facility on Beaufighter Avenue to treat runoff from the stockpile areas prior to discharge to the main drainage system on airport. Water is recycled for dust suppression and irrigation purposes.	2001
The open drain running north-west from the Runway precinct, under the 04/22 runways to Boundary Road was upgraded with the piping of the section near the runways, and the creation of new basins 3, 4 and 5 in the Boundary precinct (adjacent to Transition Drive and Boundary Road). This modulates peak flows, and treats water quality entering the drainage system through Rocklea, which ultimately discharges to Oxley Creek approximately 2 km downstream of the airport.	2008
Stormwater tanks provided for the new corporate hangars and EMQ premises on Wirraway Avenue, and the new warehouse constructed by AAC on Beaufighter Avenue to retain stormwater for use on site, and assist with reducing peak discharge volumes to Oxley Creek.	2007-8
Basins 3,4 and 5 constructed (in Transition Estate), to cater for runoff from Transition Estate and the central part of the airport.	2014
Construction of headwall north of Site 205 to assist managing stormwater flows along Qantas Ave.	2015
A new detention basin constructed adjacent to Balham Road in the northern part of the Ashover precinct, to manage stormwater before it is discharged off airport.	2020
A new stormwater swale constructed adjacent Ashover Road in the southern part of the Ashover Precinct, to manage stormwater before it is discharged off airport.	2020
A new stormwater swale running between Taxiway Alpha and Runway 10L/28R was created as part of the Project AIM works, to facilitate better drainage away from the main runway	2020
Small rock landscaping has been introduced to localised sections of open drains to address minor soil erosion.	Ongoing
The annual surface water monitoring program by AAC has continued, with progressive updating and enhancement of the scope of sampling, and ongoing review of findings.	Ongoing

Activity	Date
Sustainable use of natural resources and energy	
The airport has secured a number of businesses that recycle materials and equipment for reuse in construction and manufacturing. These include Veolia Environmental Services, and Alex Fraser Group, which has a concrete recycling operation in the Beaufighter/Mortimer Precinct. These operations promote the reuse of resources, and reduce the energy required to produce construction materials.	1998 onwards
Rainwater tanks have been installed by AAC for the corporate hangar development and QGAir premises on Wirraway Avenue, and the warehouse and office on Beaufighter Avenue.	2007-8
Efficient water fittings have been installed in AAC buildings, including the refurbished Airport Terminal.	2008
Water meters have been upgraded to improve monitoring of consumption.	2008
AAC developed a *Water Efficiency Management Plan* (WEMP) in accordance with Queensland Water Commission requirements, in consultation with tenants and Brisbane Water. Efficiency measures were implemented progressively.	2008
AAC implemented energy efficient air conditioning, lighting, and specified low VOC paint and sustainable floor coverings for its refurbishment of the Airport Terminal.	2009
Installation of rainwater tank for new Boeing/Aviall facility	2012
Installation of movement activated lights in the public area and toilets of the Airport Terminal building	2015
Installation of a 86kW solar electricity generation system on Building 111 in the Beatty Precinct.	2020
Installation of a 5KL slimline rainwater tank for the new Hangar 4 facility	2021
Replacement of all runway and taxiway lights with LEDs as part of the Project AIM works	2021
Installation of a 35KL rainwater tank as part of the new site 581 warehouse facility	2022
Provision for the installation of a 7.5KL rainwater tank as part of the new hangar 013 development.	2022
Other key achievements	
AAC's Airport Operations Manager, Donald Foy was chosen from a field of 40 nominees to be named Australian Airports Employee of the Year by the Australian Airports Association – Australia's peak industry body representing airport operators.	2012
Brisbane Regional Commendation awards for both Heritage and Interior Architecture for refurbishment of the middle floor of the Airport Terminal building.	2015
Australian Metro Airport of the Year Award by the Australian Airports Association – Australia's peak industry body representing airport operators.	2021

3 Regional context

This chapter describes the strategic context of the airport; and highlights the factors that influence its role and function as part of the national aviation network, and as a significant land use and transport hub in South East Queensland.

3.1 AIRPORT LOCATION

The airport is located close to the heart of Brisbane, and is approximately 11 kilometres south-west of the Brisbane City Centre.

The airport is also in close proximity to major hospitals, Griffith University, sporting fields and technology centres.

It is in one of the larger, mainly industrial areas of Brisbane, at the south—west gateway to the City.

The location of Archerfield in a regional context is shown in Figure 1 *Airport location*. The airport and its surroundings are shown in Figure 3 *Airport context*. Surrounding land use is shown in Figure 10 *Airport land use context*.

3.2 ROLE AND FUNCTION RELATIVE TO OTHER SOUTH EAST QUEENSLAND AIRPORTS

The airfields within approximately 100 km of Archerfield Airport are shown in Figure 1 *Airport location*.

Archerfield is a strategic resource of irreplaceable value to greater Queensland.

As a reliever of the congestion of incompatible aircraft operations at Brisbane, and to a lesser extent at Gold Coast and Sunshine Coast airports, it plays a vital role in the integrated operation of aviation within the region.

Experience shows that Archerfield rarely receives aircraft originally destined for Brisbane, Gold Coast or Sunshine Coast airports, and when it does, the aircraft are not larger than a 20 seat commuter plane.

As Brisbane's metropolitan airport, Archerfield ensures that smaller aircraft traffic is reduced at Brisbane Airport. This complementary role allows Brisbane Airport to utilise to maximum efficiency its airspace for larger aircraft involved in domestic and international travel thereby improving on time arrivals and departures.

Archerfield
Brisbane's Metropolitan Airport

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 3 **Airport context** DRAFT September 2022

PlannedFX
Planning Environment Strategy Design

3.2.1 Brisbane Airport

Brisbane Airport is the capital city and main airport for the region. It is located on the north—eastern side of Brisbane, and is 14 kilometres from the Brisbane City Centre.

The airport operates as a hub for interstate, intrastate and international airline routes. The airport is a significant gateway to South East Queensland and is also a major business centre, consistent with its vision as being both a 'city airport' and an 'airport city'. It is also the Australian base for Virgin Airlines with their head office at Bowen Hills. Brisbane Airport is primarily driven by tourism as a destination for South East Queensland and attracts increasing international markets.

Archerfield is vital to the efficient operation of Brisbane Airport and is an essential component to the Brisbane aviation basin. This complementary role allows Brisbane Airport to reduce congestion and ensure better performance for scheduled domestic and international travel and freight.

Brisbane Airport has recently commenced use of a new 3,300m runway constructed parallel and to the west of the original main runway.

3.2.2 Gold Coast Airport

This airport is located at Coolangatta on the Gold Coast, approximately 80 kilometres south of Archerfield. It caters for domestic services and low cost carrier international passenger and commuter services.

Gold Coast Airport has recently implemented a new Instrument Landing System (ILS) to provide guidance to pilots when landing in low visibility weather conditions, reducing flight delays and diversions including at peak tourism times. The Airport is also in the process of completing Project LIFT, which includes terminal expansion, additional aircraft parking stands and a consolidated ground transport facility.

3.2.3 Sunshine Coast Airport

Sunshine Coast Airport is located near Maroochydore some 107 kilometres north of Archerfield and is the gateway for holiday destinations. It currently carries significant commuter traffic between Brisbane Airport and the Sunshine Coast and interstate providing connections to domestic trunk services and to a lesser extent international services.

The airport has recently completed construction of a 2,450m Code E second runway to enable direct flights to more destinations across Australia, Asia and the Western Pacific.

3.2.4 RAAF Base Amberley

Amberley is a Commonwealth Defence facility for the RAAF located approximately 30 kilometres south-west of Archerfield. It is the Air Force's

largest base, employing more than 5000 people and can accommodate and provide services for the rapid expansion of air power capability.

3.2.5 Wellcamp (Brisbane West) Airport

Wellcamp is located approximately 15km west of Toowoomba, 130km west of Brisbane City Centre, and 120km from Archerfield.

The airport caters for RPT services to regional Queensland and interstate (Cairns, Sydney and Melbourne), general aviation to a lesser degree and domestic and international freight with Code F aircraft.

3.2.6 Small airports to the north and north-west of Archerfield

Small airports servicing recreational and general aviation activity are located at Redcliffe (41km north of Archerfield), Watts Bridge (75km north-west), Caboolture (55km north), and Caloundra (85km north).

Redcliffe, Caboolture and Caloundra airports are owned and operated by their local councils. Watts Bridge is privately owned and operated and its focus is on recreational and sports aviation.

3.2.7 Small airports to the west and south-west of Archerfield

Toowoomba and Warwick airports, and Boonah and Southport airfields service recreational and general aviation activity.

3.3 STRATEGIC INFLUENCES

The current and future form, role and operation of Archerfield Airport are shaped by:

- the overall objective that the airport provides a key aviation service as part of the network of metropolitan airports across Australia;
- demand in aviation services and growth opportunities for expansion outside of capital city airports;
- State policies for aviation; road, sea and air transport; the development of communities in Queensland; and for land use and development (in SEQ in particular);
- its location 11km from Brisbane City Centre, and strategic position in the South West Industrial Corridor Regional Economic Cluster; which is home to employment, business and industrial activities of regional significance;
- regional and local planning policies, strategies and controls;
- the site conditions, opportunities and constraints;
- the history of the development and use of the airport (landside and airside), and current occupation/leases of airport land;

- any constraints arising from surrounding land use, or environmental conditions;
- changes arising from the environment, including the influence of climate change on the site and the airport operation; and
- market opportunities, in aviation, and in land use and development including emerging possibilities for growth in various aviation services, and development of new enterprises that will contribute to Archerfield being a strategically significant airport with a sustainable future.

The following describes the relevant provisions of state, regional and local planning policies and strategies, and highlights the implications these have for the airport now and into the future.

3.4 QUEENSLAND STATE GOVERNMENT

3.4.1 Aviation and aerospace

In addition to the airport–related provisions in State Planning Policy, the Queensland Government has adopted the following strategies and plans relevant to aviation, emerging opportunities in autonomous flight, aerospace and other technologies:

- *Tourism and Events Queensland's Aviation Framework 2018-2025*;
- *Queensland Drones Strategy* (2018); and
- *Queensland Aerospace 10 year Roadmap and Action Plan* (edition 2 updated April 2022).

The Queensland government recognises the critical role of airports in supporting Queensland's economic growth, linking Queensland industries to workforces and national and international supply chains, markets and customers; the development and connection of communities (including in regional and remote areas); and the key role that airports play in supporting the operation of emergency and other services.

The Government in 2022 released an updated *Queensland Aerospace 10 Year Roadmap and Action Plan 2018-2028* which has the following vision:

> *By 2028, the Queensland aerospace industry will be recognised as the leading centre in Australia and South-East Asia for aerospace innovation in training; niche manufacturing; maintenance, repair and overhaul (MRO); and uncrewed aerial systems (UAS) applications for military and civil markets.*

The key strategies for the next 10 years are:

> *Grow Queensland's aerospace industry and create high-value, knowledge-based jobs*
>
> *Enhance Queensland's level of industry capability to access new national and global supply chain opportunities and international markets*
>
> *Promote Queensland as a preferred destination for aerospace capability, servicing both national and global markets*

3.4.2 State Planning Policy (2017) and related state interest guideline (2021)

The *State Planning Policy 2017* (SPP) and related guideline includes provisions that seek to protect airports and aviation facilities. Archerfield is identified as a 'strategic airport' under the SPP.

The SPP has the following statement of the State interest in strategic airports and aviation facilities:

> *The operation of strategic airports and aviation facilities is protected, and the growth and development of Queensland's aviation industry is supported.*

The SPP describes the importance of airports as follows:

> *Strategic airports and aviation facilities play a key role in facilitating economic growth in Queensland. All sectors of the Queensland economy including tourism, trade, logistics, commercial business and extractive industry rely on the efficient movement of people and freight through strategic airports. The continued growth and development of Queensland's aviation industry is also dependent on access to strategic airports.*
>
> *Strategic airports are also a vital part of Queensland's passenger transport infrastructure network, ensuring communities can access employment and recreation opportunities, and vital services such as health and welfare.*
>
> *.....*
>
> *The strategic airports and aviation facilities to which the SPP applies are essential elements of the national and state air transport network and the national defence system. Ensuring development does not impact on the safe and efficient operation of these facilities will support continued growth of the state's economy, regional communities and national defence.*

The SPP requires that planning schemes must integrate the State interest as follows

> *(1) Strategic airports and aviation facilities are identified, including the associated Australian Noise Exposure Forecast (ANEF) contours, obstacle limitation surfaces or height restriction zones, public safety areas, lighting area buffers, light restriction zones, wildlife hazard buffer zones, and building restricted areas.*
>
> *(2) The safety, efficiency and operational integrity of strategic airports are protected. Development and associated activities:*
>
> *(a) do not create incompatible intrusions, or compromise aircraft safety, in operational airspace*
>
> *(b) avoid increasing risk to public safety in a public safety area*
>
> *(c) are compatible with forecast levels of aircraft noise within the 20 ANEF contour or greater [as defined by Australian Standard 2021–2015: Acoustics—Aircraft noise intrusion—Building siting and construction (AS 2021), adopted 12 February 2015] and mitigate adverse impacts of aircraft noise.*
>
> *(3) Development complements the role of a strategic airport as an economic, freight and logistics hub, and enhances the economic opportunities that are available in proximity to a strategic airport.*

(4) Aviation facilities are protected by avoiding development and associated activities within building restricted areas that may affect the functioning of the aviation facilities.

(5) Key transport corridors (passenger and freight) linking strategic airports to the broader transport network are identified and protected.

The policy applies to land in the vicinity of Archerfield Airport and in particular:

- the operational airspace (including as shown in the OLS/PANS-OPS);
- land in the vicinity of the aviation facilities that are located on and off airport;
- within the area defined by the 20 ANEF; and
- within public safety areas defined at the ends of each main runway.

The policy does not however apply to the airport itself (which is Commonwealth land), or to aviation facilities off the airport.

The policy is applied in relation to:

- assessment of development applications;
- making or amending of planning schemes; and
- designation of land for community infrastructure.

Planning schemes are required to show the airport location, and include an Airport Environs Overlay that shows the following (where known):

- operational airspace (OLS/PANS-OPS);
- lighting area buffer zone, including lighting intensity zones;
- wildlife hazard buffer zone;
- building restricted areas for aviation facilities (communication, navigation or surveillance), protecting against physical obstructions, competing radio transmissions or significant electrical/electromagnetic emissions;
- public safety areas; and
- ANEF contours.

The policy seeks to ensure that planning schemes and development approvals for land around airports protect airport efficiency and viability, avoid limitations to aircraft operations, protect development (and occupiers) from adverse effects of airport operations, and protect public safety.

Chapter 9 of the Master Plan includes details of the operational airspace, the lighting area buffer zone and lighting intensity zones, the wildlife hazard buffer zones, guidance for assessment of windshear and turbulence, public safety areas, and ANEF contours.

The policy requires that planning schemes have regard to the approved ANEF for each airport. To ensure that the latest noise forecast is taken into account in planning decisions for land in proximity to the airport, the ANEF contours

currently in the City Plan will need to be updated to show the endorsed 20 year ANEF that has been prepared for this Master Plan.

The policy guideline also seeks to ensure that planning schemes show key transport infrastructure and corridors (including key freight routes) linking a strategic airport to the broader transport network, and protect these from development which would compromise the function of the transport route.

The State Planning Minister needs to be satisfied that planning scheme changes and development approval decisions reflect this policy.

3.4.3 South East Queensland Regional Plan 2017

From a regional perspective, the *South East Queensland Regional Plan (2017)* (SEQRP, also known as ShapingSEQ) provides the principles and priority actions to protect and enhance the region's environmental, social and economic assets to the year 2041.

SEQRP is the Queensland Government's plan to manage growth and protect the region's lifestyle and environment. It has been prepared in consultation with the Commonwealth, and Local Governments in the region (including BCC).

The vision for the region is a future that is sustainable, affordable, prosperous, liveable and resilient to climate change. This is expressed in five themes: *Grow*, *Prosper*, *Connect*, *Sustain* and *Live*.

The plan provides the framework for managing growth, land use and development in the region. It responds to issues such as continued high population growth, traffic congestion, climate change and employment generation. The plan balances population growth with the need to protect the lifestyle that residents of South East Queensland value and enjoy.

From the perspective of Archerfield Airport, the regional plan includes important guidance on such matters as the preferred location of urban growth in the SEQ region, optimising the use of existing infrastructure, ensuring efficient freight services, and coordinated air and sea transport, and ensuring that key infrastructure including Archerfield Airport is protected.

Growth areas

Urban development will be confined within a defined footprint which will contain urban growth and promote a higher density urban form, separated by areas of non urban land.

The regional plan identifies the need to cater for 188,200 additional dwellings in the Brisbane metropolitan sub region by the year 2041. 110,600 will be in new growth areas, and the balance of 77,600 will be in infill development within the current urban boundary.

The majority of this additional growth will be focused on regional activity centres outside the Brisbane City Centre, however the plan also identifies opportunities for additional infill development.

Outside the Brisbane City Centre, the plan identifies two major growth corridors south-west from Goodna (about 10km west of Archerfield) to Ipswich and beyond, and south-east through Logan.

In the south-west, approximately 111,700 new dwellings will be required by the year 2041, with the Ipswich CBD strategically located to function as the principal administrative, cultural and community centre. The growth area will be supported by employment at Springfield, Ripley, Ebenezer-Willowbank, Swanbank, New Chum, Bundamba, Wulkuraka industrial area, Carole Park, the RAAF Base Amberley, and the Amberley aerospace and defence support centre.

The south-eastern corridor is located to the south of Archerfield Airport in Logan City. It is between the existing urban area of Logan and the southern boundary of Logan City. This growth corridor is adjacent to existing urban services, the Mount Lindesay Highway and the Brisbane to Sydney rail corridor. It is expected to cater for regionally significant levels of residential and employment growth, in a series of communities linked by a subregional public transport network and roads to Greater Logan, Brisbane, the Gold Coast and Ipswich. The plan estimates that 89,900 additional dwellings will be required by 2041.

These corridors will make use of significant areas of available land and reduce development pressure on the coast. New development in these areas is expected to incorporate significant new employment precincts.

Archerfield Airport is well placed to accommodate the aviation requirements for these growing areas, and the transport, services and other business needs that will be generated.

Employment

The plan seeks a diversified regional economy that retains local jobs and builds on regional and subregional competitive advantages and specialisations.

It also seeks to provide sufficient land for business and industry to enable diversified, broad-based, future economic and employment growth across the region.

It identifies Regional Economic Clusters (RECs) to support a globally competitive economy.

RECs are described in ShapingSEQ as:

> *ShapingSEQ realises that when it comes to economic activity, the whole is greater than the sum of the parts – that is, when industries and businesses co-locate and are well-connected, they increase their productivity and capacity to compete nationally and globally.*
>
> *These geographic concentrations of interconnected businesses, suppliers and associated institutions result in greater economic activity and are significant economic drivers.*
>
> *In ShapingSEQ, these areas are defined as Regional Economic Clusters (RECs). These areas are likely to involve higher-value and 'outward looking' industries and jobs, and as such, present enormous opportunities for the SEQ economy (P 50)*

Archerfield is in the South West Industrial Corridor REC.

ShapingSEQ highlights the importance of strategically located land in areas with good motorway, regional arterial, airport or rail access. This is a description that fits comfortably with Archerfield Airport and the surrounding employment precinct. It says that this land should be secured for business and industry serving the wider region, or importing and exporting goods and services outside South-East Queensland.

The South West Industrial Corridor is identified in chapter 3 of the plan as a regional economic cluster (REC), supported by significant state and national transport infrastructure. The characteristics of the REC are summarised as:

> *It contains the most significant industrial cluster in SEQ. It operates as a receiving and dispatch location for much of SEQ's land-based freight. The function of this REC varies from a very heavy industrial focus supporting priority sectors of manufacturing, mining services and transport and logistics at its expanding western boundary, to health and tertiary education oriented sectors towards its eastern boundary. Maximising the capacity of the existing rail network, improving internal mobility and prioritising the movement of freight will enhance the functioning of this REC. There may also be potential for synergies to emerge with the Pacific Motorway REC.*

Archerfield, Acacia Ridge and Rocklea are within a '*Major enterprise and industrial area*' in the REC. ShapingSEQ highlights that these areas:

- accommodate medium- and high-impact industries and other employment uses associated with, or with access to, state transport infrastructure;
- are major drivers of economic growth; and
- are either significant in size or have the potential to expand to provide for industry and business activity clusters of regional and state significance.

The plan includes the following strategies that are relevant to Archerfield (and the surrounding employment area):

> *Plan for the intensification and/or expansion of RECs to enhance regional economic growth and activity….*
>
> *Identify and protect core components within RECs (Table 4) and their enabling infrastructure from encroachment by incompatible land uses.*
>
> *Facilitate synergies between core components within RECs.*
>
> *Invest in economic enabling infrastructure that support RECs, including the port and airports, intermodal terminals, public transport, freight linkages, and data and energy.*
>
> *Ensure that planning frameworks provide sufficient flexibility to respond to the dynamic and evolving nature of RECs, and support growth and investment in their core components.* (page 52 of ShapingSEQ)

The following strategies apply to land in *Major enterprise and industrial areas* (Page 53):

> *Protect major enterprise and industrial areas, including associated connections to freight, intermodal, and supply chain networks that form part of the strategic transport system, from encroachment by incompatible land uses …*

Enable the intensification and expansion of major enterprise and industrial areas, where appropriate, to improve their capacity and functionality.

Encourage synergies between major enterprise and industrial areas and other economic uses, including regional activity centres and knowledge and technology precincts.

Plan for new major enterprise and industrial areas that are appropriately located near existing or planned freight and supply chain networks, including intermodal terminals, where they can accommodate regionally or state significant agglomerations of industry and business activity.

Accommodate a mix of commercial uses in major enterprise and industrial areas to give workers and enterprises an appropriate level of access to shops, amenities and facilities to reduce trips out of the area without compromising their role and function.

The strategies for domestic and international tourism are:

Build upon the region's international brand to promote tourism opportunities that will enhance economic, environmental, social and cultural benefits.

Plan for socially and environmentally sustainable tourism and recreational activities in rural areas.

Facilitate tourism opportunities by enhancing enabling infrastructure and services, particularly airports, major roads and rail, and digital technology.

Infrastructure

Supporting infrastructure will be developed progressively, in accordance with the *State Infrastructure Strategy*, (2022). With the adoption of the 2022 State strategy, a new regional infrastructure plan is being developed for South East Queensland. This is anticipated to be completed in 2024, replacing the *South-East Queensland Infrastructure Plan and Program* (SEQIPP).

The following summarises key elements of the Strategy and the SEQIPP relevant to Archerfield.

The Strategy focuses on the following themes: renewable energy superpower, building a Brisbane 2032 Olympic and Paralympic games legacy, connecting the regions, creating livable communities, and driving infrastructure performance.

Renewable energy generation, storage and use is a priority for a sustainable future.

The 2032 Olympic and Paralympic games will provide a catalyst for upgrading the transport system in South East Queensland, including the traditional elements of roads, cycleways, rail, bus and water transport; and the new and emerging areas of on-demand transport, cooperative and automated vehicles, and mobility as a service.

AAC anticipates that in the coming years the airport will play an important role as a home for advanced air mobility and for facilitation and development of new and emerging transport technologies that complement the traditional networks. This will reinforce the long standing role of the airport as a transport and

logistics hub; and a place for research and development, engineering, and services for both aviation and non aviation purposes.

SEQIPP identifies plans for further upgrading of the Ipswich motorway (which passes Archerfield), and providing additional capacity for the Ipswich railway line.

The Strategy seeks to build on the benefits that are anticipated from the Cross River Rail project which is now in the construction phase, Brisbane Metro bus network enhancements, and the Gold Coast light rail.

The Cross River Rail project comprises a 10.2 kilometre rail line from Dutton Park to Bowen Hills, and will include new underground stations at Boggo Road, Woolloongabba, Albert Street, Roma Street and an upgraded station at Exhibition. It will also be integrated with new bus services at key points in the network, and road network improvements. When complete, the project will provide additional rail capacity between Salisbury and Wooloowin, enabling significant improvements to south east Queensland's regional rail network and enhancing rail and other public transport access to the South West Industrial Gateway.

Transport and freight

The transport component of the State strategy prioritises investment in maintaining and strengthening the existing transport infrastructure networks (with growth to service increasing demand, and resilience to address climate change); implementation of Cross River Rail and integration with an improved bus network; and embraces the possibilities of emerging technologies and new service models to meet growth in service demand.

It recognises that innovations such as on-demand transport, cooperative and automated vehicles and Mobility as a Service can enhance the state's established modes and help it embrace new ways of transporting people and goods. Digitisation of infrastructure and utilisation of smart transport systems are also identified as ways to enhance the delivery, management and operations of the transport network.

The SEQIPP seeks to enhance South East Queensland's position as the major national and international freight logistics centre servicing the Australian east coast.

It recognises that there will be rapid growth in freight movements in South East Queensland with expanding import and export activities in the Australia TradeCoast area (including Brisbane Airport and Port of Brisbane). It notes that the ability to easily move freight into and around South East Queensland will be essential for economic growth.

The rail freight initiatives (in part 12.5 of the plan) include expanding the capacity of the Acacia Ridge rail terminal, and increasing rail capacity through the metropolitan network to the Port of Brisbane. The Acacia Ridge rail terminal is approximately 1.6 km to the east of Archerfield Airport.

The initiatives for coordinated air and sea transport in part 12.6 of the plan seek to provide efficient air and sea transport to service both freight and passenger needs in South-East Queensland.

The policies that underpin it include:

- supporting development of regional airports as significant economic and social links for regional communities;
- providing transport infrastructure to support the primary role of regional air and sea ports; and
- protecting and enhancing the freight routes to the Australia TradeCoast.

The plan recognises the important role that airports play in the economic and social fabric of South-East Queensland, and that increasingly the airports are a focus for a range of employment and land use activities.

South East Queensland Principal Cycle Network Plan

The State government in 2016 published a plan showing the existing and desired future principal cycle network in South East Queensland.

Principal routes form the spine connecting local cycle networks. They link residential areas to major trip attractors such as public transport nodes, universities, schools, shopping and commercial centres, industrial areas, and regional recreational facilities.

At the regional scale, they provide key connections between activity centres or towns.

The Plan shows the most important routes and known missing links for cycling within the region. These are represented as 'desire lines', that indicate generally the connections that are sought to encourage safe and efficient movement of cyclists. The routes are therefore indicative only, and guide further planning and design that will determine the precise route and design of cycle facilities.

Council has further refined this network in the *Bicycle Network Overlay Map* in the City Plan.

The existing and future principal routes within the roads in the vicinity of the airport are shown in Master Plan Figure 17 *Ground transport plan* and in the relevant Precinct Structure Plans (PSPs).

3.4.4 Consistency with the State plans and policies

The Queensland Government is committed to the continued operation and growth of Archerfield Airport. It has identified the airport as being of State significance and recognises that it is an important part of the aviation/transport infrastructure of South East Queensland.

The State Planning Policy seeks to protect the continued operation of the airport. It encourages a cooperative approach between airport operators, all

levels of government and other relevant stakeholders. It recognises the need to balance airport activities with surrounding land use, taking into account both local safety and amenity issues, and the safety and operational requirements of the airport operator.

Principles underpinning the State agenda include:

- BCC is expected to consult with Archerfield Airport Corporation, airline operators, adjacent local authorities, other government agencies and the community when considering planning scheme provisions for land adjacent to Archerfield Airport;
- any strategic plans, planning schemes or amendments, or development approvals relating to land around Archerfield Airport should provide for adequate control over land use and development to protect the ongoing operation of the airport. These should take into account issues such as height control and noise so that the present and future operational requirements of the airport and the safety and amenity of the community are not compromised;
- Council is expected to safeguard through its strategic planning and implementation of land use and development controls, sites for future aeronautical facilities based on an assessment of future needs and roles;
- Council is expected to provide for aviation-related industries and services to locate on land adjoining airports. In the case of Archerfield, past planning initiatives by Council have ensured that there are many opportunities for industry and related activities to establish around the airport.
- As was foreshadowed by the Commonwealth and the FAC prior to privatisation, the industrially zoned land in the Acacia Ridge/Rocklea/ Archerfield industrial precinct is now largely developed (or otherwise committed). The airport is a substantial landholding, and offers a range of opportunities for non-aeronautical land on the airport to be developed progressively for purposes that complement the aviation activities at Archerfield, and those in the South West Industrial Gateway;
- BCC and neighbouring councils are also expected to take into account Archerfield's operational requirements, including obstacle clearances, safety, protection from light emissions, protection from wind turbulence (from buildings, structures, and emissions from facilities), management of wildlife, and provision of appropriate buffers from noise when considering planning applications (for rezoning, land use, development or subdivision); and
- Local authorities are required under SPP to ensure that the planning scheme includes appropriate provisions to ensure that any adverse effects of aerodrome operations on adjacent residents or other sensitive uses are minimised.

The Master Plan is consistent with the State and regional planning framework.

The Master Plan:

- provides for the sustainable future of the airport as a base for aviation, with an emphasis on flying training, corporate, charter, emergency rescue, aeromedical, Advanced Air Mobility and emerging technologies, RPT and related aviation activities; supported by a range of complementary land uses;
- will add essential economic stimulus to the airport business;
- provides a strategic framework for the timely and efficient development of airport infrastructure, yet retains the flexibility to respond to future developments in aviation that will emerge in the volatile marketplace over the 20 year planning horizon;
- promotes an integrated approach to airside and non-airside land use planning;
- includes information about the operational requirements and effects of the airport, including details concerning airspace protection, public safety areas and anti-aircraft noise management, to assist Council with the responsible management of surrounding land use;
- has full regard to conservation of the natural and built environment; and protection of soil, air and water quality (in conjunction with the AES);
- facilitates environmental awareness by all who conduct business on the airport (through the AES and related procedures);
- sets out the airport protection requirements, including the prescribed airspace, restricted light zones, and forecast noise mapping, to ensure that landholders and authorities proposing or undertaking off airport development can avoid encroachment of activities and development in the airport vicinity that could impact on airport operations; and
- will ensure environmental accountability for actions on site, through the Environmental Management Procedures, Environmental Management Plans and regular reviews and reporting to the Commonwealth Government.

This Master Plan identifies the planned airside facility requirements for Archerfield. It confirms that there is no immediate requirement to expand the aeronautical facilities beyond the current airport boundaries. It also sets out the ongoing role and function of Archerfield as a major general aviation airport in a metropolitan, state and national context, and a significant hub for transport, industrial and related commercial enterprises serving the south east region of Queensland for the long term.

The Master Plan guides the staged upgrading of aviation infrastructure and the release and development (and redevelopment) of non-aeronautical land on the airport for a range of purposes that complement the aviation activities at Archerfield, and the role it plays in the South West Industrial Gateway

AAC is committed to maintaining a good working relationship with the Queensland Government, to ensure that there is a full appreciation of all relevant issues, and a coordinated approach is taken on matters of common interest.

AAC will continue to work cooperatively with State Government in applying the latest relevant Queensland State Planning Policy on planning for aerodromes and other aeronautical facilities, and associated guidelines, where these are generally consistent with the principles and concepts underpinning the Master Plan.

3.5 BRISBANE CITY PLAN AND LOCAL PLANS

The Brisbane City Plan 2014 provides a performance based planning scheme for the City, and is prepared under the Queensland *Planning Act 2016*.

3.5.1 Structure of the City Plan

The City Plan adopts the relevant Queensland Planning Provisions, including all of the State Planning Policy. It describes the strategic framework for Brisbane, identifies priority infrastructure, zones, overlays and development codes.

The *Strategic framework* sets the policy direction for the planning scheme. It states the vision for the City and broad policy, and sets the parameters for general development policy.

The policy intent is described under five themes being:

- Brisbane's globally competitive economy;
- Brisbane's outstanding lifestyle;
- Brisbane's clean and green leading environmental performance;
- Brisbane's highly effective transport and infrastructure; and
- Brisbane's CityShape.

It identifies for each theme, the strategic outcomes sought.

The effective operation of airports and the importance of major transport infrastructure to economic activity are reflected in City Plan's *Strategic Framework*.

The theme 'Brisbane's globally competitive economy' includes the following specific outcomes:

> ***SO4*** *The Brisbane Airport, Port of Brisbane and Archerfield Airport are key locations of economic activity and provide key access points supporting the city's economy.*

This outcome is supported by the following land use strategies:

> ***L4*** *Planning for the air and sea ports is undertaken by respective entities to enable these locations to:*
>
> *a) be key centres for economic activity related to the functions of these locations;*

b) complement major economic activity in the city;

c) integrate with the city's transport network; and

d) develop and operate safely and efficiently.

and:

***SO5** Brisbane's industrial areas have a high degree of connectivity which is protected and enhanced.*

which is supported by the following land use strategies:

***L5.1** Development optimises the use and efficiency of freight routes and they are protected from encroachment by sensitive land uses*

***L5.2** Development optimises and integrates with the use of airspace of the Brisbane and Archerfield airports and limits the intensification of sensitive land uses in proximity to existing and future runway approaches.*

Archerfield is located within the South-West Industrial Gateway (SWIG), which is identified as a Major Industrial Area and is one of the SEQ region's main freight gateways. The airport's strategic role in the City and the region is recognised with the following specific outcome under the Brisbane's CityShape theme:

***SO12** Archerfield Airport's long-term role is enhanced by development.*

supported by the following land use strategy:

***L12** Development enhances the functioning of Archerfield Airport.*

The gateway role is being enhanced by the modernisation and growth of Archerfield Airport, and the delivery of inland rail to the Acacia Ridge Intermodal Terminal.

AAC has in recent years made a significant investment in the modernisation of aviation and related infrastructure, and in new and upgraded facilities to cater for a diverse range of aviation and complementary activities. This investment is facilitating current and new aviation operations including corporate aviation, flying training, regular passenger flights, charter, freight, aeromedical and emergency services, Advanced Air Mobility and emerging technologies; supported by a range of allied businesses including student accommodation for flying schools, aircraft engineering, maintenance, research and development, and related services.

The long-term investment by BCC and other stakeholders in the Oxley Creek Transformation project will enhance ecological and open space values in the SWIG and will improve the interface between the creek corridor and the urban uses in the SWIG.

The *Airport Environs Overlay* in City Plan ensures that new development is consistent with this land use strategy.

The *Local Government Infrastructure Plan* (LGIP) integrates land use planning and infrastructure planning, with the objective of ensuring that trunk infrastructure is planned and provided in an efficient and orderly manner.

The requirement for the approval of specific development and use is set out in the *tables of assessment*. The outcomes sought for development and use is described in the *zones*, *overlays*, and applicable *codes*.

Neighbourhood Plans provide a local vision for an area. They identify and address local issues and detail the desired character for the area.

3.5.2 Implications for Archerfield

The provisions of the Brisbane City Plan do not apply to the airport land. Instead, the Commonwealth through the Airports Act ensures that planning decisions on the airport are guided by the Master Plan, which includes a framework for land use and development.

The land use and development aspects of the Master Plan have regard to the City Plan, as well as other State, regional and local provisions. AAC is responsible for including relevant land use and development provisions in its master plan, and for implementing these once the master plan is approved by the Minister.

Key aspects of the City Plan of relevance to the Master Plan are summarised below.

Land use

The airport is positioned to cater for research, development and operation of emerging technologies in aviation and engineering; and strengthening its key role in facilitating the distribution of high value and time critical freight across the country.

Archerfield Airport also offers substantial opportunities for development of new industrial and distribution/logistics, technology, engineering and service facilities on serviced land, accessible via the established trunk road network. These uses are being realised progressively with greenfields and infill developments in a variety of precincts at Archerfield.

The majority of the airport is designated SP5 *Special purpose (Airport)* in the Brisbane City Plan.

This zoning recognises that the airport is a special mix of activities and development which does not conform to a single land use classification (such as 'industrial' or 'business'), and requires flexibility to allow the airport to develop and evolve as its business and operational needs change.

The section of the airport at the southern end of Beatty Road (on the north-east corner of Beatty Road and Mortimer Road) is designated *'Low Impact Industry'*, and allows for industry and related uses that are compatible with the industrial land along the east side of Beatty Road, the neighbouring residential area on the south side of Mortimer Road (adjacent to the south-east corner of the airport), and the public open space to the east.

The land to the south-west of the airport, that forms the wedge between Oxley Creek and Blunder Creek is an open space corridor, that extends south from the Brisbane River, widening towards the southern outskirts of the urban area of Brisbane. A conservation zone applies to the creek corridor adjacent to the airport, and this zoning has been adopted for the creekside land on the airport.

All other land abutting the airport is designated for industrial purposes, consistent with its current use. The surrounding land use zoning is shown in Figure 10 *Airport land use context*.

The Brisbane City Plan identifies the South-West Industrial Gateway, Northern Industrial Area, and the Australia TradeCoast as the three major industrial areas for Brisbane (in addition to industry in Strategic Inner City Industrial Areas). The South-West Industrial Gateway includes Archerfield, Acacia Ridge and the developing areas of Wacol and Darra.

BCC has in recent years made provision for expansion of the South-West Industrial Gateway at Lower Oxley Creek (to the south of the airport).

In 2013, it adopted the Lower Oxley Creek South neighbourhood plan which applies to an area commencing 4km south-east of the airport. It provides for industrial development in locations where land use conflict can be avoided. In 2016 BCC adopted the Lower Oxley Creek North neighbourhood plan which provides for low and medium impact industry in an area commencing 2.5km south of the airport.

Multi purpose centres (which include retailing, office, community facilities and other compatible activities) in the Acacia Ridge/Archerfield areas include:

- the Elizabeth Street Shopping Centre (at the intersection with Beaudesert Road, approximately 2 km from the airport)
- the Acacia Market Place Shopping Centre (on the east side of Beaudesert Road, approximately 1.2 km from the airport).

There is also a bulky goods complex 1km west of the airport on Ipswich Road. This includes Harvey Norman, Bunnings, JB Hi, Fi, Super Amart, R.T. Edwards, The Good Guys, Officeworks, and other similar retail outlets.

Local, smaller convenience centres in proximity to the airport include the shops on the south-west corner of Mortimer and Beaudesert Roads; the corner of Granard and Beatty Roads; and at Boundary Road, Coopers Plains (at the railway station).

There are no convenience or multi-purpose retail facilities within walking distance of most of the airport.

Transport

The City Plan includes a road hierarchy overlay map. The road network serving Archerfield is categorised as follows:

Motorways which include Ipswich Road, to the north west of the airport, Logan Motorway (further afield to the south) and South East Freeway (to the north east of the airport).

Ipswich Motorway, Granard/Riawena Road and the Gateway Motorway are National Highways under the management of the Queensland Department of Transport and Main Roads (DTMR) and provide a strategic link to the Port of Brisbane. Their strategic importance to south-east Queensland is also highlighted in the *South East Queensland Regional Plan 2017*.

Arterial roads provide intra-city connections between the major designations within Brisbane and surrounding areas including the principal regional activity centres and major employment areas. These carry 20,000+ vehicles per day and in the vicinity of the airport are:

- Granard/Riawena Road;
- Beaudesert Road;
- Boundary Road, east of Beaudesert Road;
- Blunder Road;
- Inala Avenue/Learoyd Road.

Suburban roads, which connect arterial roads through and around suburbs constitute a lower order of road to the arterial routes, and carry 10,000 to 20,000 vehicles per day, include:

- Boundary Road, between Beatty Road and Beaudesert Road;
- Boundary Road, on the west side of the airport;
- Mortimer Road, between Beatty and Beaudesert Roads;
- Kerry Road;
- Barton Street;
- Balham Road, between Barton Street and Ashover Road;
- Ashover Road; and
- Beatty Road.

District roads which carry through traffic between suburbs and provide access between minor roads, local centres and suburban and arterial roads include:

- Mortimer Road/Lombank Street west of Beatty Road, and
- The north-south section of Balham Road (from the intersection with Barton Street).

With respect to freight movement in the vicinity of the airport, the road hierarchy map identifies the following 'primary freight routes' (direct road connections for non-standard vehicles between regionally significant industrial areas and inter-regional destinations):

- Ipswich Motorway,

- Granard Road, and
- Beaudesert Road;

and the following roads that are 'primary freight access' routes (connecting primary freight routes and freight dependant development):

- Boundary Road (east and west of the airport),
- Ashover Road,
- Balham Road,
- Barton Street,
- Beatty Road (north of Mortimer Road),
- Kerry Road, and
- Mortimer Road.

Council is pursuing an integrated approach to transport, including addressing road network requirements, provision of improved public transport (including public transport interchanges), increasing the proportion of cycling and pedestrian trips (by encouraging the provision of bikeways and pedestrian ways linked to centres and public transport), and management of car parking.

It seeks also to protect Archerfield Airport and other major strategic transport infrastructure from incompatible development and land use, and to ensure that Brisbane's industrial areas have a high degree of connectivity for people and freight (including by road, air, rail, and sea).

The City Plan includes guidance for the development of three major Queensland Government projects:

- the Intermodal freight terminal (rail and road) at Acacia Ridge (1.6km east along Kerry Road);
- the Postle Street logistics sub precinct which is envisaged as an extension to the Intermodal Freight Terminal as an industry/warehousing precinct; and
- the Technical and Trades Training (SkillsTech) Campus.

Pedestrian and cycle network

Existing and potential cycle routes are shown in in the *Bicycle Network Overlay Map* in the City Plan.

These are intended to facilitate access to retail and commercial services, public transport, education and recreation facilities.

The main routes are along Ipswich Road, Granard Road, and Beaudesert Road. Secondary cycle routes are shown along Beatty Road, Mortimer Road (east of Beatty Road), Boundary Road, Barton Street/Balham Road, and Ashover Road.

The overlay map shows also a 'potential' route through the south-west corner of the airport, near Oxley Creek. AAC has considered this proposal and found

that it is not feasible for a number of reasons. This is addressed in section 10.4.

Heritage

The City Plan encourages the conservation of heritage places and heritage precincts to retain their significance for the benefit of present and future communities.

Council has a city-wide heritage register, and a *Heritage Overlay* that applies to heritage places. The Overlay identifies the airport site (apart from the land on the east side of Beatty Road) as a 'local heritage place'.

However, the Commonwealth retains jurisdiction to decide heritage matters on airports, and this is administered under the Airports Act and regulations, and the *Environment Protection and Biodiversity Conservation* (EPBC) Act. This has been done to facilitate the regeneration of airport infrastructure. Under this system, God's Acre Cemetery and the Airport Administration and Terminal Building are identified as places of historic significance.

Prior to preparing this Master Plan, AAC commissioned heritage specialists to undertake an independent assessment of the heritage values of the airport, and develop a heritage management plan. This work was foreshadowed in the Airport Environment Strategy, and the findings have been incorporated into the 2022 Master Plan and Environment Strategy. More information about heritage management is provided in section 16.2 of the AES.

Environment

The City Plan identifies a network of waterway corridors and wetlands.

The principal elements of relevance to the Master Plan are the main diagonal drainage system that runs south-east to north-west through the middle of the airport, and the Oxley Creek open space system that abuts the airport to the south west.

AAC recognises that the Oxley/Blunder Creek system is a regionally important open space and fauna habitat and has included in the Master Plan an open space buffer on airport land adjacent to the creek. The boundaries of the buffer area were determined in consultation with the Commonwealth departments of Infrastructure and Transport (now DITRDCA); and Sustainability, Environment, Water, Population and Communities (DSEWPC – now Climate Change, Energy, the Environment and Water) during the preparation of the 2010 version of the Airport Master Plan and Environment Strategy, and have been maintained in the master plans and environment strategies that have been approved since then.

The land is designated as an 'open space buffer' in Figure 2 *Master Plan vision*, and zoned 'Conservation' in Figure 19 *Airport land use zoning*. The cleared land in the buffer area will continue to be used for grazing. The area will also continue to accommodate important stormwater management works including

the major detention basin. This will provide an appropriate long term interface between airport activities and the Oxley Creek open space corridor.

3.5.3 Airport environs overlay and code

The City Plan includes an *Airport Environs Overlay* and related code.

The purpose of the Airport Environs overlay code is to:

> *Implement the policy direction in the Strategic framework, in particular:*
>
> - *Theme 1: Brisbane's globally competitive economy and Element 1.2 – Brisbane's industrial economy;*
> - *Theme 5: Brisbane's CityShape and Element 5.1 – Brisbane's City Centre and Element 5.2 – Brisbane's Major Industry Areas.*
>
> *Provide for the assessment of the suitability of development in the Airport environs overlay.*

The outcomes sought are:

> *(a) Development protects the safety and functioning of operational airspace of the Brisbane Archerfield and Amberley airports.*
>
> *(b) Development protects the functioning of aviation facilities from incompatible land uses, buildings, structures and works.*
>
> *(c) Development for a sensitive use within the vicinity of the Brisbane and Archerfield airports is appropriately located to prevent exposure to very high levels of aircraft noise and designed to adequately attenuate expected aircraft noise to protect the health and wellbeing of occupants.*
>
> *(d) Development ensures that operational airspace of the Brisbane, Archerfield and Amberley airports is not put at risk from light sources or wildlife interference generated by development.*
>
> *(e) Development minimises potential hazards to the safety and functioning of airport operations resulting from emissions from smoke, dust or any other airborne particulate or the creation of air turbulence.*
>
> *(f) Development does not materially increase the number of people or the storage and handling of dangerous goods or combustible liquids within public safety areas.*
>
> *(g) Development minimises the potential hazard to safety of airport operators resulting from reflection of sunlight, and other potential threat of interference to pilot vision.*
>
> *(h) Development avoids increased risks to public safety near airport runways.*

The code includes assessment criteria that if satisfied will ensure consistency with the State Planning Policy, airspace protection, ANEF contours, lighting restrictions, limitations on reflectivity of materials, public safety areas and other requirements.

Under State Planning Policy, public safety areas can be defined for land that is at the end of runways at Archerfield Airport, and all other strategic airports in Queensland. Within the defined public safety area (PSA) new development and storage of hazardous materials are restricted, to protect the safety of people

and property on the ground in the event of an aircraft incident during landing or take-off.

The PSA requirements apply only to new development, or material changes of use. Existing development and use is not subject to a PSA, provided any safety requirements that were applied when the development was approved continue to be followed.

The public safety area for Archerfield is shown in Figure 2 *Master Plan vision*, and in Figure 14 (2042 ANEF) and the relevant PSPs. It applies to the 10L/28R runway, and follows the dimensions in the SPP and NASF guidelines,

The current Australian Noise Exposure Forecast (ANEF) mapping in the City Plan reflects the ANEF endorsed previously for the airport for the purpose of determining the limitations of aircraft noise on land use and buildings. The ANEF has been reviewed for this Master Plan (as required by the Airports Act) and the current endorsed ANEF for Archerfield (to the year 2042) is shown in Figure 14. Consistent with normal practice the overlay mapping in the State Planning Policy Interactive Mapping System and Brisbane City Plan will need to be updated to show the current endorsed ANEF.

Depending on the location of the land and the location and characteristics of proposed land use, new developments or material changes in use on land external to the airport may be required to incorporate noise attenuation measures to prevent adverse impacts from aircraft noise in accordance with *AS2021 Acoustics—Aircraft Intrusion—Building Siting and Construction*. AAC will continue to provide advice to landholders and BCC on the application of the ANEF to specific sites, or proposals for changes in use or development.

The 6km radius lighting assessment area and the restricted light zones that have been applied to the areas around the airport, on the alignment of the main runways are generally consistent with the lighting assessment area and restricted light zones shown in Figure 13. Restricted light zones have also been shown in the City Plan for the 04/22 runway complex, however AAC would support these being removed, as the secondary runways are not intended to be used at night.

Wildlife buffer zones shown in Figure 13 have been prepared in accordance with Guideline C in the *National Airports Safeguarding Framework*. The buffer zones identify wildlife management requirements for existing and proposed uses, to minimise the risk of bird or other flying wildlife strike. The risk of terrestrial wildlife to aviation operations on the airport is managed by maintaining perimeter fencing to the airside of the airfield, and undertaking ongoing surveillance to identify and address any wildlife within the operational area.

The NASF guideline includes advice on acceptable land uses (and management of these) in three zones: 0-3km, 3-8km, and 8-13km from the runways.

The risks of wildlife strike are highest within the first 3km of each runway, and this zone is subject to the most stringent land use requirements to minimise

risks from existing and proposed land use. The NASF guidelines include advice on appropriate land use, and requirements for wildlife management measures to be implemented for specific uses. AAC supports the consistent application of these guidelines to mitigate the hazard to pilots in the Archerfield airspace.

AAC supports the inclusion of the relevant airport safeguarding provisions in the City Plan (and the planning provisions for Logan City and Ipswich City, with respect to wildlife management requirements), and will continue to work with local and state government to ensure that wildlife related hazards are appropriately managed and all other relevant airport safeguarding requirements are implemented.

3.5.4 Acacia Ridge-Archerfield Neighbourhood Plan

The *Acacia Ridge - Archerfield Neighbourhood Plan* describes the area as being:

> *....comprised of a number of distinctive established areas of industrial uses and residential communities. The industrial uses include a variety of manufacturing, transport, light aircraft and commercial airport operations and technical and trades training employment opportunities of regional significance. Established residential areas consist of households with a strong emphasis on affordable homes, accessible parks and a strong community character.*

It describes the airport as:

> *Archerfield Airport provides a focus for light aircraft and commercial aircraft activities*

The plan acknowledges the ongoing operation of Archerfield Airport and related aviation activities and services.

It highlights that the airport is within an industrial and transport services corridor of regional significance. Future industrial development that has a nexus with and supports the function of the airport and surrounding industrial/transport services corridor is supported.

It recognises also that the airport is privately operated under an agreement with the Commonwealth Government and the site is regulated by Federal legislation.

The provisions relevant to the airport are summarised below.

Industry

With respect to industry, the plan notes that this area supports a major industrial and freight transport node of citywide and regional significance that provides a broad range of industrial and transport employment.

It supports future industrial development that supports the function of the airport and has a nexus with the surrounding industrial/transport services corridor.

The plan acknowledges the need to provide appropriate buffers between industrial and more sensitive uses (such as residential).

This is of particular relevance to the south-east corner of the airport, where there are existing houses on Mortimer Road, opposite the airport industrial

areas and the vacant airport land that is on the north east corner of Mortimer Road and Beatty Road.

Activity centres

The plan highlights two suburban activity centres near the airport. These are:

- a convenience centre on the east side of Beaudesert Road between Kerry Road and Mortimer Road (approximately 1.2 km from the airport); and
- the higher order centre developed around the intersection of Elizabeth Street and Beaudesert Road, approximately 2 km to the south-east of the airport.

There are no activity centres shown in the areas immediately adjacent to the airport, including the employment areas to the north (to Granard Road) or to the north-west and west (to Ipswich Road).

Given the distance separating the airport from these centres, and the plans for growth in employment and visitors to the airport (and to the surrounding employment areas), there is scope for some retail facilities on the airport to cater for day to day needs of the airport, and the adjacent employment and residential areas.

Oxley Creek

The City Plan highlights the importance of Oxley Creek as a regional open space and habitat corridor.

This is addressed in the designation in the Master Plan (and the AES) of a buffer zone along Oxley Creek, the stormwater management measures that have been implemented by AAC in recent years, and the ongoing environmental management initiatives that are included in the AES and EMPs.

3.6 STRATEGIC STRENGTHS OF ARCHERFIELD AIRPORT

3.6.1 Aviation

- Archerfield is soundly positioned as the Brisbane metropolitan airport hub for flying training, corporate aviation, charter, aeromedical, emergency rescue and related services, specialised freight, air taxi, Advanced Air Mobility and emerging technologies, and privately operated aircraft in South East Queensland;
- the range of aviation uses at Archerfield complement those at Brisbane Airport;
- the scale and quality of airside facilities and the opportunities for expansion provide the flexibility to accommodate a range of aviation and aerospace activities for government and private sectors;
- it has long established airspace protection measures in place to ensure that the operation is not constrained by surrounding land use or development (including measures to maintain obstacle clearances, protect

the airport from adverse light impacts, and clearly indicate potential noise impacts);

- the metropolitan location attracts aircraft operators and their clients, pilots, instructors and trainees, and aviation business operators; due to the central location, the amenities, and access to high quality aviation facilities;
- there are a number of opportunities to develop more accommodation for trainee pilots on the airport site, further strengthening the attractiveness of the airport to interstate and overseas students;
- Griffith University is linked both traditionally and by proximity. Undergraduate and postgraduate aviation courses, like the Bachelor of Aviation, are offered at the nearby Nathan campus;
- its proximity to the Brisbane CBD hospitals and other facilities, and excellent road access makes it an attractive base for aeromedical and emergency services;
- it is the home of established aviation businesses and organisations which all contribute to the richness of the airport community;
- the airport has unique characteristics that make it an appropriate base for niche RPT services which may not require access to, or may not be welcomed at, the major airports in the region. It is in a convenient location close to the Brisbane CBD, and to the substantial existing enterprises in the South West Industrial Gateway;
- it is on the 'inboard' side of the Western and South Western growth corridors of Brisbane, which will accommodate the planned growth of Brisbane over the next 20 or more years. It is positioned to service the air transport needs of a growing residential population, as well as the transport and business needs of the range of enterprises that are being sought in these areas;
- the airport is uniquely placed to cater for the needs of Advanced Air Mobility and emerging technologies, including research and development and service delivery; and
- AAC is committed to driving growth in sustainable aviation activity at Archerfield, and to attracting compatible activities that will underpin this.

3.6.2 Sustainability

- The potential environmental impacts of the airport are well managed, in accordance with the AES;
- The airport is addressing sustainability aspects in new development, and in its own projects that include refurbishment and adaptive reuse of historic buildings, and development of new facilities;
- The airport can be accessed by public transport, and BCC has in place plans to further improve this through enhancement of the cycling and pedestrian network throughout the Acacia Ridge/Archerfield area, and

links to Coopers Plains railway station, which in turn connects to greater Brisbane; and

- The airport is close to significant open space areas, including the Oxley Creek corridor (to the south) and the main district scale open space on Mortimer Road, that serves the Archerfield area.

4 Economic significance

4.1 ECONOMIC ROLE AND POTENTIAL OF ARCHERFIELD AIRPORT

Archerfield is a strategic airport serving South East Queensland.

It serves as the base for corporate and private flying, a number of pilot training schools; engineering, technology and maintenance providers; charter flight companies; government and emergency services (including QGAir, Polair and LifeFlight), Royal Queensland Aero Club, Archerfield Jet Base (FBO), and a range of supporting businesses.

The airport is a significant transport infrastructure asset for Brisbane and South East Queensland. It provides economic benefits to the state and regional economy, including:

- providing key economic infrastructure to enable other industries;
- reducing the pressure of General Aviation on RPT airports, allowing for more efficient and safe passenger management;
- providing vital community aviation services such as aeromedical, rescue and emergency services helping to facilitate better patient outcomes;
- creating aviation jobs to sustain a skilled workforce for industry;
- facilitating efficient trade of goods and logistics;
- supporting economic development through efficient intermodal transport; and
- supporting regional and offshore resource development through freight logistics and fly-in, fly-out workforces.

The airport has an important role as a transport hub that facilitates regional and remote development.

Archerfield is an airport of strategic significance to the state's economic growth.

It plays a critical role in industry development, and in the resources, tourism, construction and agriculture sectors in particular.

It has a current and future role in industry development of aviation and aerospace, at the forefront of training and skills delivery, and its location in close proximity to industrial precincts with the potential to attract businesses and aviation links to industries that require air services.

Businesses at Archerfield Airport fulfil significant maintenance, repair and overhaul (MRO) functions. This sector provides an important contribution to the state economy, and also to exports.

The *Queensland Aerospace 10-Year Roadmap* discussion paper released by the State government in 2016 stated that over 30% of Australian aircraft manufacturing and repair businesses are in Queensland. In 2014–15 aerospace generated approximately $1.3 billion of revenue and contributed around $600 million to the Queensland economy. At that time, the sector provided over 4500 direct jobs in aircraft manufacturing and repair services. It indirectly supports many more across the state.

The State government in its 2022 edition of the *Queensland Aerospace 10 Year Roadmap and Action Plan 2018-2028* reinforces the importance of the aerospace industry with the following vision:

> *By 2028, the Queensland aerospace industry will be recognised as the leading centre in Australia and South-East Asia for aerospace innovation in training; niche manufacturing; maintenance, repair and overhaul (MRO); and uncrewed aerial systems (UAS) applications for military and civil markets.*

and the following key strategies for the next 10 years

> *Grow Queensland's aerospace industry and create high-value, knowledge-based jobs*
>
> *Enhance Queensland's level of industry capability to access new national and global supply chain opportunities and international markets*
>
> *Promote Queensland as a preferred destination for aerospace capability, servicing both national and global markets*

As discussed in section 3.5, the Brisbane City Plan recognises that Archerfield Airport (and Brisbane Airport and Port of Brisbane) is a key location of economic activity and provides key access points supporting the city's economy.

The land use strategies that support this are for Archerfield Airport to:

- be a key centre for economic activity related to the functions of its location;
- complement major economic activity in the city;
- integrate with the city's transport network; and
- develop and operate safely and efficiently.

Air training is expected to grow as a share of industry revenue and strengthen the contribution of airports with a focus on training. Archerfield Airport is a key player in the economic growth of Queensland and provides opportunities to attract innovation, technology, education, training and specialist aviation and aerospace services.

4.1.1 Airport enterprises

The airport currently accommodates 166 businesses employing hundreds of people.

The flying training activities cater for both domestic and international flying students.

The international flying students are estimated to contribute approximately $3.5M per annum in export earnings for the state, and for Australia.

There are also many external businesses that provide services to the enterprises based on the airport, and to the people working or visiting Archerfield.

4.1.2 Investment as a catalyst for growth

AAC has not only transformed the airport business from operating at a loss, it has also made significant capital investments totalling $63m in the airport since privatisation in 1998. These investments have improved aviation infrastructure, attracted new enterprises to the airport, and strengthened its role as Brisbane's metropolitan airport.

The experience at metropolitan airports around Australia is that this investment leads to growth in on-airport employment, and increased indirect employment.

The Australian Airports Association, in its report *Securing the future of Australia's Metropolitan Airports* (November 2014) summarised the amount of capital investment made by the ALCs of metropolitan airports since privatisation. The report also provided on-airport employment figures as follows:

- Archerfield Airport-$38m, and 668 staff in aeronautical businesses (total staff in non aeronautical not available)
- Bankstown /Camden Airport-$37m, and 2070 on-airport staff
- Essendon Airport- $200m, and 4200 on-airport staff
- Jandakot Airport- $251m, and 1950 on-airport staff
- Moorabbin Airport- $250m, and 3300 on-airport staff
- Parafield Airport-$21m, and 850 on-airport staff.

4.1.3 South-West Industrial Gateway

In conjunction with the preparation by AAC of the 2011 Master Plan, BCC undertook an analysis of the role of Archerfield as part of this strategic industrial area of Brisbane.

The analysis found that the airport is a key asset to the South-West Industrial Gateway. It complements the freight connections at the Acacia Ridge rail freight terminal and the expected growth of industrial activity in this part of Brisbane.

The Gateway area overall is considered by BCC to be a strategically important area for future industry serving the needs of Brisbane and the region, and is identified as one of three 'major industrial areas' in the City. Further industrial

development in the Gateway is complementary to the other two major industrial area, being Australia TradeCoast, and the Northern Industrial Area.

The strategic role of the airport as part of this industrial area is assessed by BCC as being complimentary to the aviation activities at Archerfield.

BCC has advised that the airport is well placed to cater for freight and short haul business travel services that would be attractive to existing enterprises in the Acacia Ridge/Archerfield/Rocklea area, and investors looking for strategic industrial locations in Brisbane.

The airport therefore has the potential to contribute to Brisbane's long-term economic growth and development by increasing the attractiveness of the City to domestic and overseas enterprises looking to invest in Brisbane, and by providing services and facilities that are complementary to economic activity in the metropolitan area and the broader South-East Queensland region.

4.2 ECONOMIC SIGNIFICANCE AND CONTRIBUTIONS

An assessment of the economic significance and economic contributions of Archerfield Airport was undertaken for AAC by Norling Consulting in 2017.

The assessment included an appraisal of the strategic role and function of the airport, research into the existing operations and enterprises at Archerfield, and an assessment of the ultimate development potential of the airport, as provided for in the 2017-37 Master Plan.

The report *Archerfield Airport – Economic Significance and Economic Contributions* found that:

Current employment

It estimated a total of 450 Full Time Equivalent (FTE) people working directly within the Archerfield Airport tenancies. While the majority of jobs were dispersed across many small businesses, larger employers included the flying training schools, Lifeflight, Pickles Auctions and QGAir.

Training/Flying Schools

Archerfield Airport plays an important role with several flight training centres for students training to be pilots for both recreation and commercial purposes. Approximately 400 students utilise the training facilities (2017).

Contribution to Gross Regional Product (GRP) and Gross State Product (GSP)

It was estimated that AAC tenants generated a total of $154.2 million in annual turnover/revenue in the 2015/16 financial year.

With respect to the value added component, businesses located at the airport contribute to the economy by deriving revenue that pays wages and salaries, derives net profit and is not spent directly with other businesses. These

components of annual turnover are considered to be value added economic contributions. The total estimate for all tenancies is $62.5 million (2017).

In 2015/16, Queensland had a GSP of $316 billion. Greater Brisbane's GRP was estimated at $145 billion. The South West Industrial Gateway's GRP was estimated at $9 billion.

The economic contributions of Archerfield Airport businesses represent a small component of GRP, equating to 0.04% of Greater Brisbane's GRP and 0.7% of the South West Industrial Gateway's GRP.

Future potential

To estimate the potential economic contributions of the airport at capacity; employee, student and turnover estimates were made for all of the underutilised and vacant land and estimates for currently vacant tenancies to achieve a 100% occupancy rate. Future estimates were made based on the land use and precinct within which sites were located.

This assessment concluded:

- The number of FTE workers could increase from 450 (2017) to approximately 1,900 FTEs.
- The number of students could increase from 400 (2017) to 600 students.
- Total revenues could more than double from $154 million to $438 million.
- Total value added contributions could increase significantly from $62 million (2017) to reach the order of $227 million.

Other economic contributions would include:

- Construction costs, with $340 million (2017) in development construction required to implement in full the approved Master Plan. This is a one off economic value that will be derived by the community progressively over the implementation period.
- Employment generation during construction, with the on-site construction workforce for the estimated $340 million in development construction estimated at 1,150 person years (FTE).

5 Aviation activity and forecasts

5.1 AVIATION ACTIVITY AT ARCHERFIELD

Archerfield caters for all types of general aviation fixed and rotary wing aircraft operations including:

- flying training;
- charter, for passengers and freight;
- aerial work;
- aeromedical;
- emergency rescue;
- corporate and business aviation;
- private and business flying;
- recreational and sports aviation; and
- emergency services flying.

Flying activity is supported by a range of established on-airport businesses which provide:

- fuel supply services;
- student accommodation and training;
- aircraft maintenance (civil, emergency services, and military);
- non destructive testing and shot peening;
- research and development, including prototyping and testing for existing and emerging technologies;
- hangarage;
- warehousing;
- aircraft, components and materials sales;
- aircraft painting and refurbishment;
- communications;
- insurance services;
- fixed base operator services;
- facilities for clubs and organisations;
- office based services; and

- food and other retailing.

5.2 AIRCRAFT MOVEMENTS

Aircraft movements have been adopted throughout the developed world as one of a number of key indicators of the utilisation of aviation facilities when the usual criterion of passenger numbers can't readily be applied.

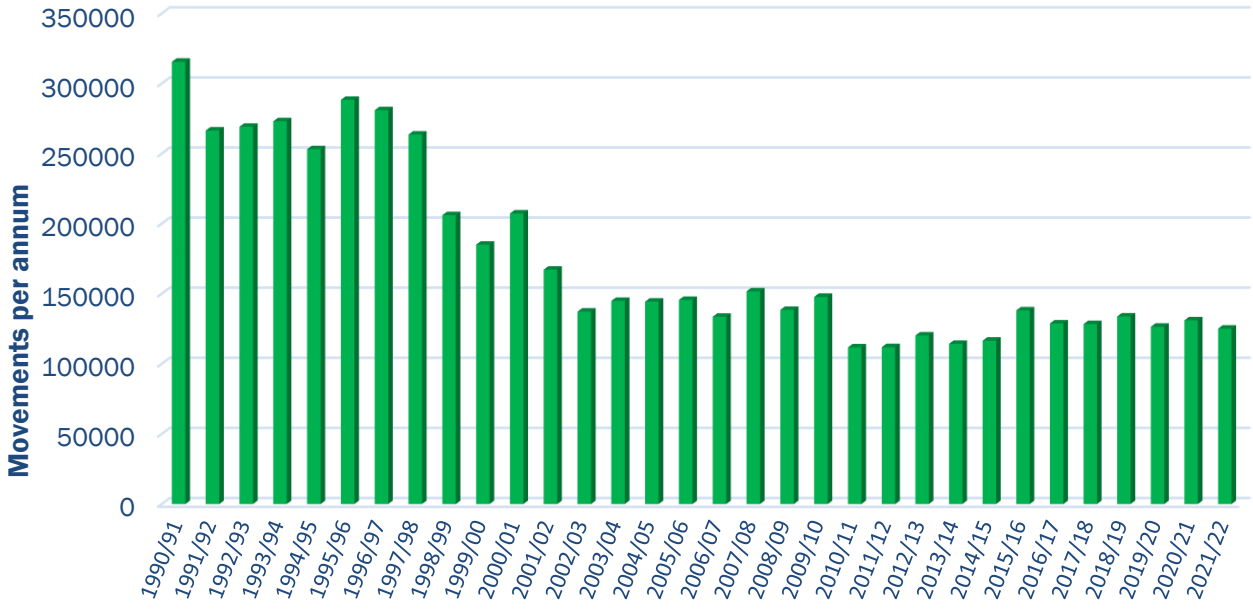
Aircraft movement figures alone are fairly limited in their usefulness for airport master planning. Aggregated annual figures do not show changes in the composition of the aircraft fleet over the years, or changes in the type or purposes of flights. Indeed, until the introduction of Location Specific Pricing for full stop landings at Archerfield in 1998, there was no need or incentive to verify any of the data.

An independent analysis of official movement figures after the advent of Location Specific Pricing found that they consistently exceeded recorded movements by significant margins, so comparisons of pre-privatisation and post privatisation figures need to be conducted with circumspection.

At the time of privatisation (19th June, 1998), there were 226 aircraft recorded on the field. In February 2016 there were 288, so with that in mind as a moderator, there is still value to be gleaned from the records that are available.

Airport records show that in the late 1980's through to 1991 the annual aircraft movements at Archerfield peaked at over 300,000.

The annual rate fluctuated between 250,000 and 300,000 flights per annum during the 1990s, and has ranged between 111,000 and 151,000 over the period 2005 to 2019. The following graph shows total movements for each year over the past 32 years (to 2022, from AAC and tower data).



Annual 24 hour aircraft movements, 1990-2022

In 2002, AAC started recording aircraft movements on a 24-hour basis. Prior to then, movement data was only collected during tower hours.

To assist with comparing the data, the 1991-2001 tower counts have been adjusted by adding 10.4% to produce the estimated 24-hour count for each year over the period 1990 to 2002. This percentage increase is the average difference between 24 hour movements and the tower records since 2002.

Factors that have impacted on flight numbers at Archerfield since 1990 have included:

- the Asian economic crisis in 1997;
- the introduction of location specific pricing for Tower services by Airservices Australia (AsA) in 1998, coinciding with privatisation;
- airport privatisation in 1998, and the necessity for Airports Act airports to recover costs for services provided and to comply with more comprehensive and ongoing requirements for airport planning, environmental management, and community consultation;
- the Global Financial Crisis in 2008-9;
- the Mobil Avtur fuel contamination event in early 2000 resulting in the grounding of 1000's of piston engine aircraft across eastern Australia;
- terrorism and related security concerns in the aviation industry following the September 2001 attacks in the USA;
- the increasing use of simulators for pilot training;
- the quite remarkable growth of an interconnected network of low cost carrier services throughout the nation;
- the increase in recreational aircraft and licensing costs, resulting in the relocation of some aircraft to country airports with lower cost bases;
- volatility in the value of the Australian dollar (which has impacted on the attractiveness of Australia as a location for training of overseas pilots);
- the COVID19 pandemic; and
- changes in the types of aircraft flying at Archerfield.

Since the 2017 Master Plan was approved, the unpredictability of annual flight numbers has continued.

Annual fixed wing movements reduced by approximately 40,000 from 2009/10 to 2010/11 (following the Global Financial Crisis), and then remained relatively steady (in a range of 100,000 to 109,000/annum) to 2014/15. Fixed wing movements strengthened considerably in 2015/16 with a total of approximately 125,000. In the six years since then, the annual movements have been in the range of 108-118,000.

Over the same period, helicopter movements have increased from an average of around 4000-5000 movements per year to around 18,200 per annum by 2020/21, and then 16,400 in 2021/22. The overall trend to increased helicopter movements reflects an increase in operations by QGAir, Polair, LifeFlight, and in training activities at Archerfield.

Table 2: Aircraft movements

Year	Fixed wing	Helicopter	Other	Tower hours	AAC 24 hour
1990/91	248,997	36,694	136	285,827	316,000
1991/92	217,394	23,943	52	241,389	266,000
1992/93	213,404	29,842	567	243,813	269,000
1993/94	231,172	15,553	657	247,382	273,000
1994/95	217,249	10,652	1,399	229,300	253,000
1995/96	241,585	18,778	805	261,168	288,000
1996/97	233,080	20,702	712	254,494	281,000
1997/98	218,862	18,862	1,044	238,768	264,000
1998/99	159,615	26,355	682	186,652	206,000
1999/00	147,682	19,566	336	167,584	185,000
2000/01	176,928	9,960	840	187,728	207,000
2001/02	147,360	3,358	724	151,442	167,000
2002/03	126,348	3,376	548	130,272	137,276
2003/04	119,660	2,748	552	122,960	144,942
2004/05	140,888	3,528		128,777	144,416
2005/06	141,548	4,060		127,403	145,608
2006/07	127,976	5,640		119,465	133,616
2007/08	147,018	4,687		135,502	151,705
2008/09	134,991	3,490		119,276	138,481
2009/10	142,718	5,062		125,137	147,780
2010/11	102,952	8,810		95,250	111,762
2011/12	100,863	11,035		97,832	111,898
2012/13	108,690	11,534		101,425	120,224
2013/14	101,323	12,934		95,362	114,257
2014/15	103,190	13,364		100,485	116,554
2015/16	125,133	13,004		120,311	138,137
2016/17	116,908	11,940		112,581	128,848
2017/18	113,849	14,512		110,796	128,361
2018/19	118,522	15,250		117,932	133,772
2019/20	109,977	16,478		109,684	126,455
2020/21	112,802	18,237		115,152	131,039
2021/22	108,631	16,464		109,754	125,095

NOTE: The 'AAC 24 hour' movements for the period 1991-2001 (shaded light green) are estimated and are provided for illustrative purposes only. The 'tower hours' and 'AAC 24 hour' movements from 2002 onwards (shaded blue) are from AAC records.

The constrained global financial conditions prevailing from mid 2007 to early 2009 affected aviation worldwide. It constricted discretionary spending, particularly on travel and leisure activities.

Although Australia fared well in a global context, the reduced availability of capital impacted on business investment, for both existing and new enterprises during that time, and this was reflected in limited investment in aviation, and non-aviation developments.

More recently, the COVID pandemic and associated travel restrictions have impacted some aspects of flying activity, however the outlook for growth remains sound, particularly in the key aviation areas that Archerfield serves, and the emerging opportunities arising from innovations in aviation and in the delivery of transport services.

5.3 FORECAST AIRCRAFT MOVEMENTS

The significant variation in flight numbers over the past 32 years shows how difficult it is to forecast future activity at Archerfield (or any other general aviation airport).

The overall trend of movement figures at Archerfield was downward during 1990-2000, levelled off during 2000-2020, and has shown a moderate increase overall in the period 2010-2022.

The flight numbers continue to fluctuate on a year by year basis, however the variation has occurred over a narrower range over the past 20 years.

The flying activity trends are sensitive to domestic conditions, and changes in the global, national and regional aviation industry.

Many of the factors influencing the activity levels are unpredictable, and it is conceivable that over the 20 year master planning period, there will be a resurgence in flight numbers.

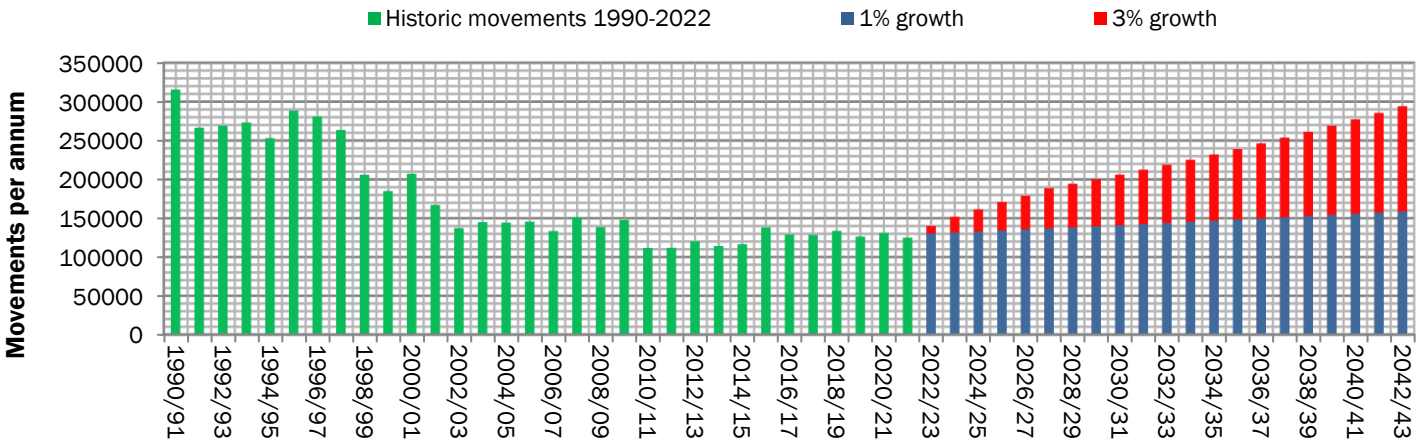
The airport is a rare and irreplaceable resource. The Master Plan seeks to preserve its capacity to cater for growth and the evolution of aviation over the next 20 years and beyond.

Archerfield is in the midst of a modernisation phase, with significant improvements being made to aviation infrastructure, facilities and buildings to meet current and emerging needs.

The Project AIM works, and the planned realignment of the secondary runway complex will improve the efficient use of aviation land, better cater for flying activity, and provide opportunities for a wider range of aviation uses and enterprises that support them to operate at Archerfield.

The anticipated strong growth in movements to 2042, whilst unlikely to exceed the levels experienced in the early to mid 1990s, will be facilitated by the recent upgrading of the main runway and primary taxiways, and upgrading of the Eastern Apron. Archerfield is also anticipated to attract additional aviation

activity; from innovations in Advanced Air Mobility and related aviation services and application of emerging technologies. To ensure that future potential remains protected, AAC has developed two growth scenarios as illustrated below.



Forecast annual aircraft movements, 2022-2042

Data from 1990 to 2022 is shown in green. A low growth scenario for the period 2022-2042 (at an annual rate of 1%) is shown in blue, and a higher growth scenario (at 3% overall) is shown in red.

For master planning purposes, the higher growth rate has been adopted for the assessment of any external effects of aviation activity. This is particularly relevant to the assessment of the potential noise exposure from aircraft in flight over the 20 year planning period.

5.3.1 Influences

Some of the significant variables that could influence the forecast for aircraft movements for the airport are:

- global and regional economic conditions;
- changes to Government regulations for the licensing of aircraft and operators;
- the pricing policy of Airservices Australia for control tower services at Archerfield;
- investment by existing flying schools in expansion and upgrading of their training fleet, and in other equipment including simulators;
- the strength of the flying training market, and the attractiveness of Archerfield to overseas students;

- the attractiveness of Archerfield for emerging air taxi and other aviation services, and as an interchange for other forms of on demand transport;
- research and development;
- the application of emerging aviation technologies;
- the attractiveness of Archerfield for helicopter flying training, and for other helicopter uses;
- growth in aeromedical and emergency services operations at Archerfield; and
- other regional, local and community airports may wish to compete for the general aviation business that currently exists at Archerfield Airport.

AAC is committed to facilitating the continued success of the airport for the long term.

It has in place a number of strategies to strengthen the aviation business, attract appropriate airport users, and foster complementary uses of the airport where these will positively contribute to the improved viability of the airport.

In 2014, AAC invested over $4M in the airport's first ever student accommodation complex. Located in a prime location on the airport on Grenier Drive, Building 9 accommodates up to 40 aviation students with motel style rooms on the top floor and a commercial kitchen, dining and lounge rooms, and four offices/training rooms on the ground floor.

The complex also includes a purpose-built viewing platform offering 360 degree views of the surrounding airspace to facilitate student's situational awareness and familiarity with radio procedures. Implementation of this initiative will assist with realising AAC's vision for the ongoing development of the airport into a world-class aviation facility.

AAC has also installed Movement Area Guidance signs beside the major runways and taxiways to assist trainee pilots conduct ground operations and plans to enhance the existing grass runways by relocating the complex away from low lying and flood-prone areas.

AAC and its tenants have invested heavily in a mix of new and refurbished facilities, including Hangars 3, 4, 5, 6 and 13; and refurbishment and adaptive reuse of the historic Airport Administration and Terminal building, which is now reinstated as the headquarters for airport management and other administrative functions, operates as a terminal, and is home to the airport History Room.

AAC, has also recently invested more than $20M in implementing Project AIM Stages 1-3, a major commitment to modernising the aviation infrastructure at Archerfield.

The works have included reconstruction and lengthening of the main 10L/28R runway, new drainage, provision of new runway lighting and new Precision Approach Path Indicator lights, upgrading the associated primary taxiways and

installation of additional taxiway stubs to fit the upgraded runway, and reconstruction and upgrading of the Eastern Apron, and associated aircraft parking and lighting.

These works will cater for a wider range of aircraft (up to Code C), improve aircraft parking facilities, improve the efficient operation of the runway complex, and provide opportunities for further aviation development including in the Wirraway, Beatty and Mortimer precincts.

5.4 AIR FREIGHT

With its metropolitan location, positioned amidst a substantial and growing industrial area (and one of the largest in Brisbane), the airport is well placed to provide specialised air freight.

Accessible to the main road links to Brisbane and interstate, and the rail freight terminus at Acacia Ridge, the airport also has the potential to act as a transport interchange for land and air freight.

AAC, in consultation with BCC has identified an opportunity for growth in freight that services the needs of remote regional areas, including the mining industry. These customers require rapid response from expert technicians and a quick supply of replacement parts for plant and machinery breakdowns.

The *2042 ANEF* has allowed for 80 freight movements per week in recognition of this and other similar uses.

The Master Plan also provides the opportunity for the progressive development of freight and supporting uses, including sites with direct airside access, in a number of the development precincts on the airport.

5.5 REGULAR PUBLIC TRANSPORT

In the early days of Archerfield Airport, it was Brisbane's main regular public transport (RPT) airport. With the establishment of Brisbane Airport in its current location, the role of Archerfield as a RPT facilitator was phased out.

Over the past 23 years a number of operators have proposed bringing RPT back to Archerfield. Their plans have included linking capital city secondary airports.

In line with previous master plans, the 2022 Master Plan continues to make provision for the introduction of RPT services. It is anticipated that aircraft capable of carrying up to 80 passengers could operate from the airport.

In line with the 2011 and 2017 Master Plans, the *2042 ANEF* (Figure 14) allows for up to 12 arrivals and 12 departures a day, or around 9000 movements per year, by Dash 8-Q400, Embraer 170 or similar aircraft.

If RPT is to occur at Archerfield, all RPT arrivals and departures will be confined to the main runway.

Passenger numbers for a RPT service could be around 400,000 to 500,000 per annum. This would represent less than 3% of the total airport flying activity, but would contribute significantly to the aviation services provided at Archerfield.

Consultation with affected stakeholders, including through means such as the Community Aviation Consultation Group, would occur prior to the introduction of any RPT services operating with aircraft larger than a 40 seat capacity. This consultation would provide an opportunity to address any potential implications including for aircraft noise, ground access and use of surrounding roads, adequate provision for on-airport parking, and any effects on other airport operations.

5.6 CORPORATE AND BUSINESS

At present the airport has a small but significant volume of passenger traffic from charter and corporate operations provided by existing businesses on the airfield.

Passengers are typically construction or mining crews travelling to a remote location, or small teams of executives travelling regionally or interstate. Politicians and VIPs also take advantage of the services provided by the businesses at Archerfield, and the convenient and readily accessible location of the airport.

5.7 AEROMEDICAL AND EMERGENCY SERVICES

In recent years, Archerfield has played an increasing role as the base for aeromedical and emergency services operations and maintenance for Brisbane and the greater region.

This is consistent with the experience of other metropolitan airports that have the capacity to cater for these uses, freeing the major capital city airports to facilitate RPT services carrying large volumes of international and domestic passengers.

Archerfield is well placed to cater for additional growth in aeromedical and emergency services operations and maintenance functions. A variety of opportunities are provided in the Master Plan for further development of these facilities, now and following the realignment of the secondary runways.

5.8 ADVANCED AIR MOBILITY, AND AIR TAXI

Archerfield Airport is positioned to become a base for new and emerging aviation technology (including on demand services); research and development for the associated systems, technology and infrastructure; and education and training.

AAC believes that the utilisation of both Advanced Air Mobility (AAM) and Remote Piloted Aircraft Systems (RPAS) has the potential to significantly

enhance aviation support to South East Queensland, the regions and the national aviation network.

The airport provides a significant opportunity to contribute to the safe and efficient operation of the emerging next wave of transport, while also optimising the sustainable use of resources and minimising the environmental impact of transport operations.

The airport is appropriately located close to the Brisbane CBD, in proximity to established ground transport networks, and is a long-established strategic asset of the South West Industrial Gateway and greater Brisbane.

AAC is committed to working proactively with potential operators, and with both CASA and Airservices Australia to ensure the safe introduction of this technology

5.9 IMPLICATIONS FOR THE MASTER PLAN

The Master Plan preserves the opportunity for RPT traffic and growth in air freight, aeromedical and emergency services, Advanced Air Mobility and emerging technologies, and corporate and business air operations.

Building on the major works completed for Project AIM, it includes measures for the progressive upgrading of taxiways, aprons and related facilities if justified by a commitment by a viable RPT operator or other significant aviation user, along with a desire for such services by the community.

The Master Plan gives also the flexibility for a RPT operator to run the service from the existing terminal building, or potentially from a new purpose built terminal facility and car parking area.

New facilities could be developed in the Wirraway Precinct adjacent to (and on the north side of) the main 10L/28R runway, following the realignment of the secondary grass runway complex which would open up additional land for aviation related developments alongside it; or from the Airport Administration and Terminal Building (or other facilities in the locality), or in a new facility adjacent to the recently upgraded Eastern Apron, in the Beatty Precinct.

These options are shown in the *Master Plan Vision* (Figure 2), the *Beatty Precinct Structure Plan* (Figure 20) and the *Boundary and Wirraway Precinct Structure Plan* (Figure 24).

The *20 year ANEF* and the N70 plans include provision for RPT traffic and freight, and for the realignment of the secondary runway complex.

It should be noted that the types of aircraft used for RPT services and freight will not use the secondary grass runways, so will not contribute to the forecasted noise exposure from the secondary grass runway complex, either in their current location, or when they are realigned.

The Master Plan provides a range of opportunities for AAM and RPAS, including potential sites for operations, for research and development, and for training.

In addition, AAC will identify potential opportunities for research and investment in further new emerging technology, with the objective of establishing a Centre of Aviation Innovation.

6 Aviation facilities

6.1 EXISTING AVIATION FACILITIES

The existing airport layout is shown in Figure 3 *Airport context* and Figure 4 *Existing airport layout.*

6.1.1 Runways

Archerfield Airport has two sets of parallel runways. The 10/28 parallel runways (aligned approximately east-west) and full-length parallel taxiways have sealed pavements. Runway 10L/28R and the supporting taxiway are equipped with pilot activated lighting.

The secondary direction 04/22 parallel runways (aligned approximately north-east/south-west) and taxiways are unsealed except for the runway thresholds.

The runway facilities are summarised as follows:

- runway 10L/28R is sealed, 1727 m long, 30 m wide and has a Pavement Classification Number (PCN) greater than 14, Pilot Activated Lighting and Precision Approach Path Indicator (PAPI) lights;
- runway 10R/28L has an unrated pavement, 1100 m long and 30 m wide, the central 18 m of which is sealed, with 6 m of gravel on either side;
- runway 04L/22R has an unrated natural surface, 1245 m long and 30 m wide; and
- runway 04R/22L has an unrated natural surface, 1100 m long and 30 m wide.

Runway thresholds are displaced as follows:

- 10L by 150 m;
- 28R by 227 m; and
- 22R by 290 m.

With the recent completion of stages 1 and 2 of Project AIM, aircraft with an Aircraft Classification Number (ACN) greater than 14 can operate on runway 10L/28R and the associated Taxiway Bravo subject to a pavement concession from AAC. The Eastern Apron, on completion of the upgrading currently underway will be suitable for these aircraft.

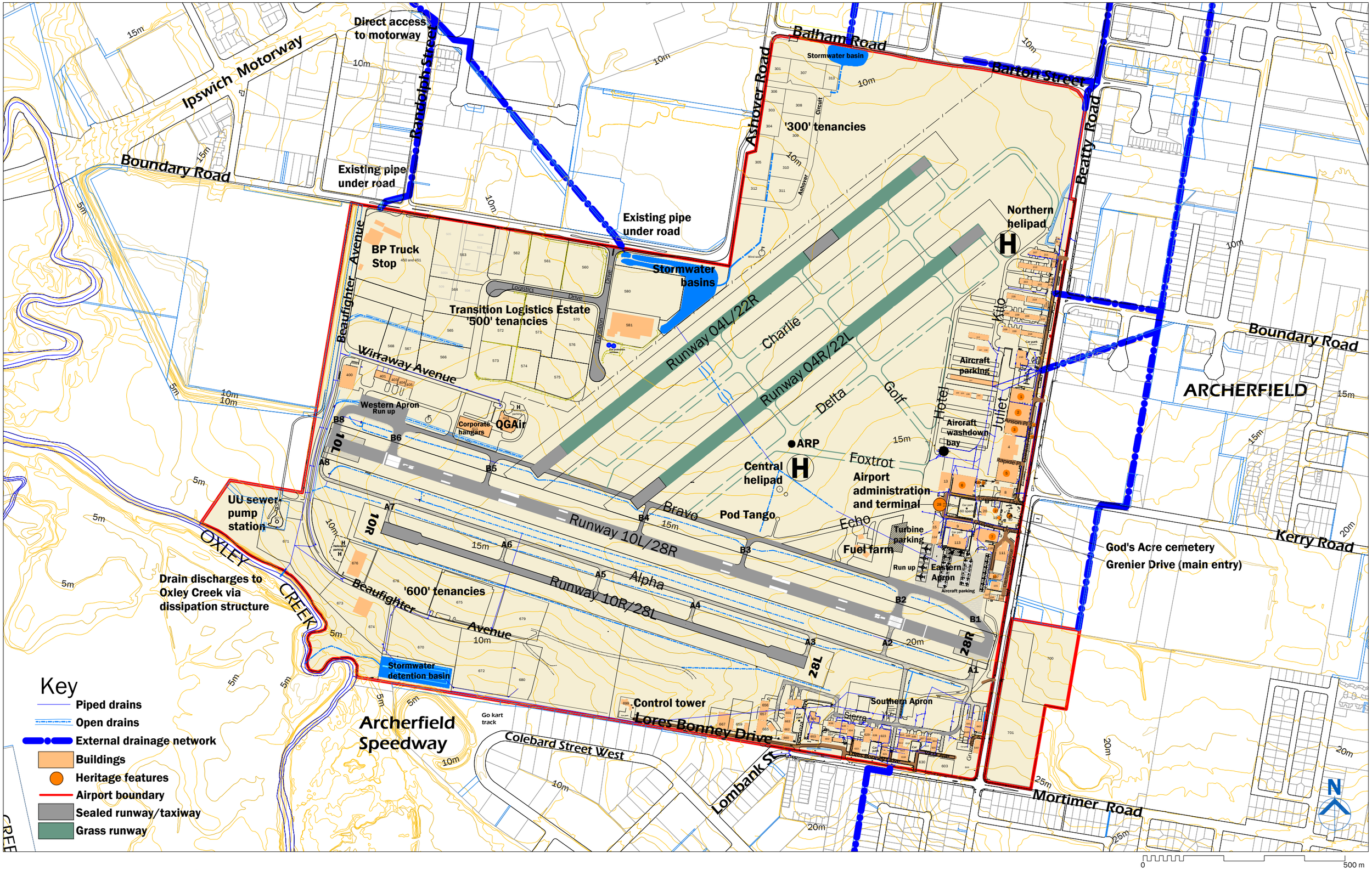


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Figure 4 **Existing airport layout** **DRAFT September 2022**

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Due to their location in the low lying part of the airport, the natural surface 04/22 runways, particularly the central section of 04L/22R become wet and affected by heavy rainfalls, thereby rendering them unserviceable more than 25% of the time.

This is particularly evident for the 04L/22R runway which has steep grades at its southern end and its central section sits in one of the lowest areas of the airport.

AAC is seeking to address this issue with the proposed replacement of the 04/22 runways, with a realigned secondary runway system that caters throughout the year for aircraft requiring cross wind facilities.

6.1.2 Primary taxiways

Parallel taxiways serve each runway and there are connecting taxiways to other parts of the airfield. The taxiway network is shown in Figure 4.

The key dimensions and Code rating of the primary taxiway system are set out in the table below.

Table 3: Primary taxiways

	Length (m)	Width (m)	Code
Alpha	1,670	7.5	A
Bravo (B1, B2, B6 and B8)	645	15	C
Bravo (B3, B4 and B5)	920	10.5	B
Charlie	1,275	10.5	B
Delta	1,105	10.5	B
Hotel (between the Terminal and Eastern Apron)	80	15	C
Juliet	305	7.5	A

6.1.3 Run up bays

Run up bays for the 10/28 runways are provided on the north side of Taxiway Bravo (in the vicinity of the thresholds to 10L and 28R) and on the west side of Taxiway Sierra (near Hangar 643).

Run up bays are also provided at each end of the secondary runways, and are accessed from Taxiways Charlie and Delta.

6.1.4 Aprons

There are four main apron areas on the airport.

The Eastern apron, located adjacent to Taxiway Bravo, at the eastern end of the 10L/28R runway has an area of approximately 2.1 ha. When the Project AIM stage 3 reconstruction and upgrading works are completed in 2023, the apron

will be illuminated for night use, sealed and linemarked with parking for 56 aircraft.

Apron Hotel, adjacent to the Airport Administration and Terminal Building has an area of 1.4 ha and has an asphalt sealed surface. It has 34 aircraft tie down parking positions provided with steel cable supports, two with chain supports and two without supports.

Apron Juliet (Northern Apron) is 7,000 m^2 in area and is of concrete construction with an asphalt sealed surface in places. There are 67 grass aircraft tie down positions adjacent to Apron Juliet and 17 aircraft parking positions on asphalt/concrete along Juliet with 7 of these provided with steel cable supports and three with chain supports.

The Western Apron is located on the north side of Taxiway Bravo near 10L.

In the southern part of the airport, there is also a grassed apron area adjacent to Taxiway Sierra.

6.1.5 Aircraft parking

Aircraft parking with tie downs is currently available for just over 200 fixed wing aircraft. These parking areas include spaces with sealed pavement, and grass areas, and aero ports. General visitor parking is provided to the west of Taxiway Hotel, between Echo and Foxtrot.

A designated turbine parking area is provided adjacent to Taxiway Hotel, south of Taxiway Echo.

6.1.6 Helicopter facilities

There are two helipads on the airport. The central helipad is located south of Taxiway Foxtrot and the northern helipad is located adjacent to the north eastern end of Runway 04R/22L.

QGAir has its own helicopter facility on Wirraway Avenue, and LifeFlight has two parking bays located south of 10R/28L at site 676 (in the Beaufighter precinct). Other parking areas for helicopters exist throughout the airport.

6.1.7 Engine run-up locations

Helicopters are directed to pod Tango for run-up.

Jet engine testing is only allowed at the run-up bays to Runway 10L.

In dry weather truck based dynamic engine testbeds are directed to pod Tango, and in wet weather to the threshold of Runway 04R (via Taxiway Bravo).

6.1.8 Visual and navigational aids

Runway 10L/28R is equipped with pilot activated, medium intensity runway lighting, Runway Threshold Indicator Lights (RTILs), Precision Approach Path Indicator lights and an illuminated wind indicator.

In May 2016, AsA decommissioned the Non-Directional Beacon (NDB) previously located on land adjacent to the airport at the corner of Beatty and Kerry Roads. The NDB was part of a national network of 180. It previously operated as an aid for Archerfield and the outer locator for Brisbane Airport instrument landing system (ILS) approach.

Following the decommissioning of the NDB, AsA introduced a new Visual Segment Surface (VSS) for Instrument procedures and RNAV-$Z_{(GNSS)}$ approach procedure for runway 10L. These procedures complement the pre-existing approach and departure procedures for runway 28R.

6.2 AIRCRAFT CHARACTERISTICS

6.2.1 Based Aircraft

There are on average around 230 aircraft based on the airport. The number can vary and in early 2016 the total number reached 288.

Currently the type of aircraft that use the airport ranges from the small Cessna 152 to Citation X craft. In the future it is expected that aircraft ranging from Jabiru to the ATR 72-600 and even the Embraer Commuter aircraft and Advanced Air Mobility and other emerging technologies could operate out of Archerfield.

Over the coming years, it is also anticipated that the aircraft fleet at Archerfield will be modernised progressively by users.

It is expected that, consistent with trends around the world, as newer models replace old aircraft there will be an improvement in reduced operating noise and fuel consumption.

6.3 AIR TRAFFIC MANAGEMENT

6.3.1 Airservices Australia

Air Traffic Control (ATC) services are currently provided from Archerfield Control Tower from 7 am to 5 pm daily.

Tower operation allows for maximum usage of the runways, and its continuation is a key issue for the sustained success and growth of general aviation activity at Archerfield, and flying training in particular.

6.3.2 General Aviation Airport Procedures to Class D

On 3rd July 2010 Archerfield Airport transitioned to Class D Airspace. Prior to this, the airport operated under GAAP since the early 1980's. A number of minor changes were associated with this transition including the requirement for pilots to seek ATC approval before entering the manoeuvring area.

Fixed wing aircraft approach and departure paths are shown in Figures 5 and 6. Helicopter approach and departure paths are shown in Figures 7 and 8. Training circuits are shown in Figure 9.

6.3.3 Common Traffic Advisory Frequency

Outside of ATC hours Common Traffic Advisory Frequency (CTAF) procedures apply which allow only one runway to be active.

6.3.4 Future changes to Brisbane airspace

A number of potential changes to Brisbane airspace are under consideration by CASA and AsA to meet evolving operational requirements, taking into account significant projects including the recently opened new parallel runway at Brisbane Airport, the ILS at Gold Coast Airport, the new 13/31 runway at Sunshine Coast Airport; and changes to the number and types of aircraft at RAAF Base Amberley and Wellcamp Airport.

AAC has been involved in a number of discussions with AsA and CASA regarding airspace design. AAC seeks to ensure the airspace surrounding Archerfield is not inadvertently contracted to such an extent that future expansion opportunities for Archerfield to cater for larger aircraft, and to assist Brisbane Airport as a reliever for some of their smaller aircraft, is lost.

With this in mind, AAC anticipates that in the coming years there may be refinements including:

- the existing RNAV-$Z_{(GNSS)}$ missed approach to runway 28R could be optimised to reduce the potential conflict with other traffic from Brisbane Airport by re-directing aircraft to the south;
- the Category C RNAV-$Z_{(GNSS)}$ for runway 10L may be complemented with the redesign of the existing RNAV-$Z_{(GNSS)}$ for runway 28R to also cater for category C aircraft;
- circling areas for category C aircraft may be realigned;
- Standard Terminal Arrival Routes (STARs) may be introduced, that connect to applicable initial approach fixes of each RNAV-$Z_{(GNSS)}$ procedure and enable progressive clearance along a pre-planned path with appropriate lateral/vertical separation from other aircraft; and
- the existing Standard Instrument Departures (SIDs) may be reproduced to enable progressive clearance along a pre-planned path with appropriate lateral/vertical separation from other aircraft so that Instrument Flight

Rules aircraft wishing to depart Archerfield outside ATC tower hours will be able to do so without waiting for a clearance from Brisbane ATC.

6.4 AIRPORT CERTIFICATION AND STANDARDS

Archerfield Airport is a Certified aerodrome, having met the relevant CASA requirements in April 2013.

It has a long history operating as an RPT airport and is currently available for use by aircraft used in RPT or charter operations.

Aviation facilities have generally been provided to meet the standards required for Code 3A aircraft, which cater for aircraft with a reference field length between 1200 and 1800 m, a wingspan of up to 15 m and an outer main gear wheel span up to 4.5 m.

Aircraft up to Code 3C standard, such as the Douglas DC-3, have operated at the airport in the past providing passenger and freight services. With the completion of Project AIM, the 10L/28R runway, primary taxiways and Eastern Apron are all suitable for Code 3C operations, with aircraft having a wingspan of 29m.

This Master Plan preserves capacity for additional taxiway upgrading should the need arise in the future.

6.5 AIRPORT SECURITY

AAC has undertaken a risk assessment and developed and implemented a Transport Security Program (TSP) for the airport in accordance with the *Aviation Transport Security Act 2004.*

A number of security measures have been put in place including:

- 1.8 m high chainwire fencing topped with 3-strand barbed wire surrounding the entire airside area;
- 11 high security pedestrian gates;
- 4 high security automatic vehicle gates;
- closed circuit television (CCTV) day/night security cameras;
- optical fibre cabling;
- intelligent mobile phone pin code retrieval system; and
- monitoring by security personnel.

On 10th March 2005, Archerfield Airport was gazetted as a security controlled airport. Following amendments to the aviation security regulations that came into effect in December 2020, Archerfield was no longer included as a Security Controlled Airport. However, it continues to operate with the security measures in place.

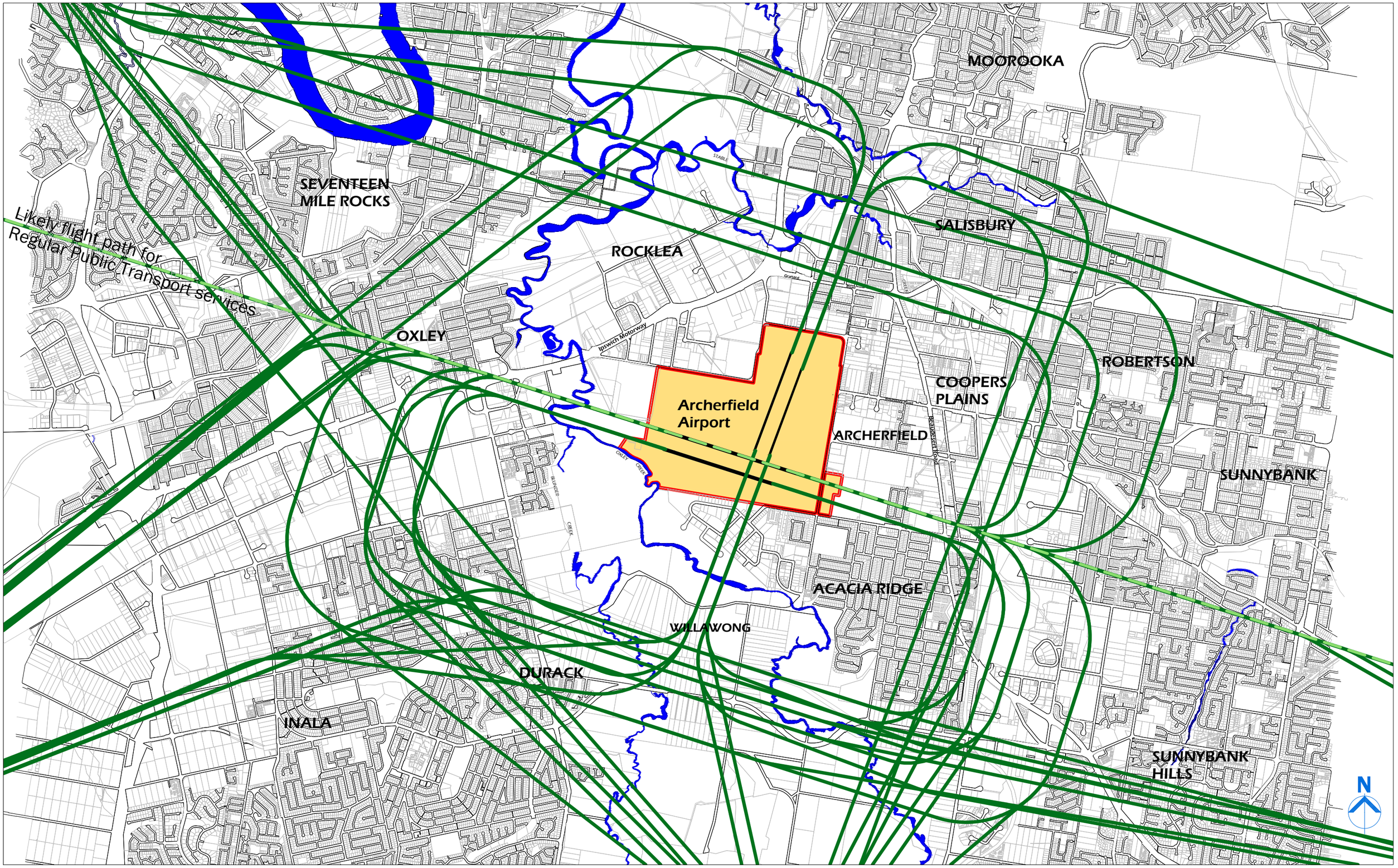

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Figure 5 **Fixed wing approach flight paths**

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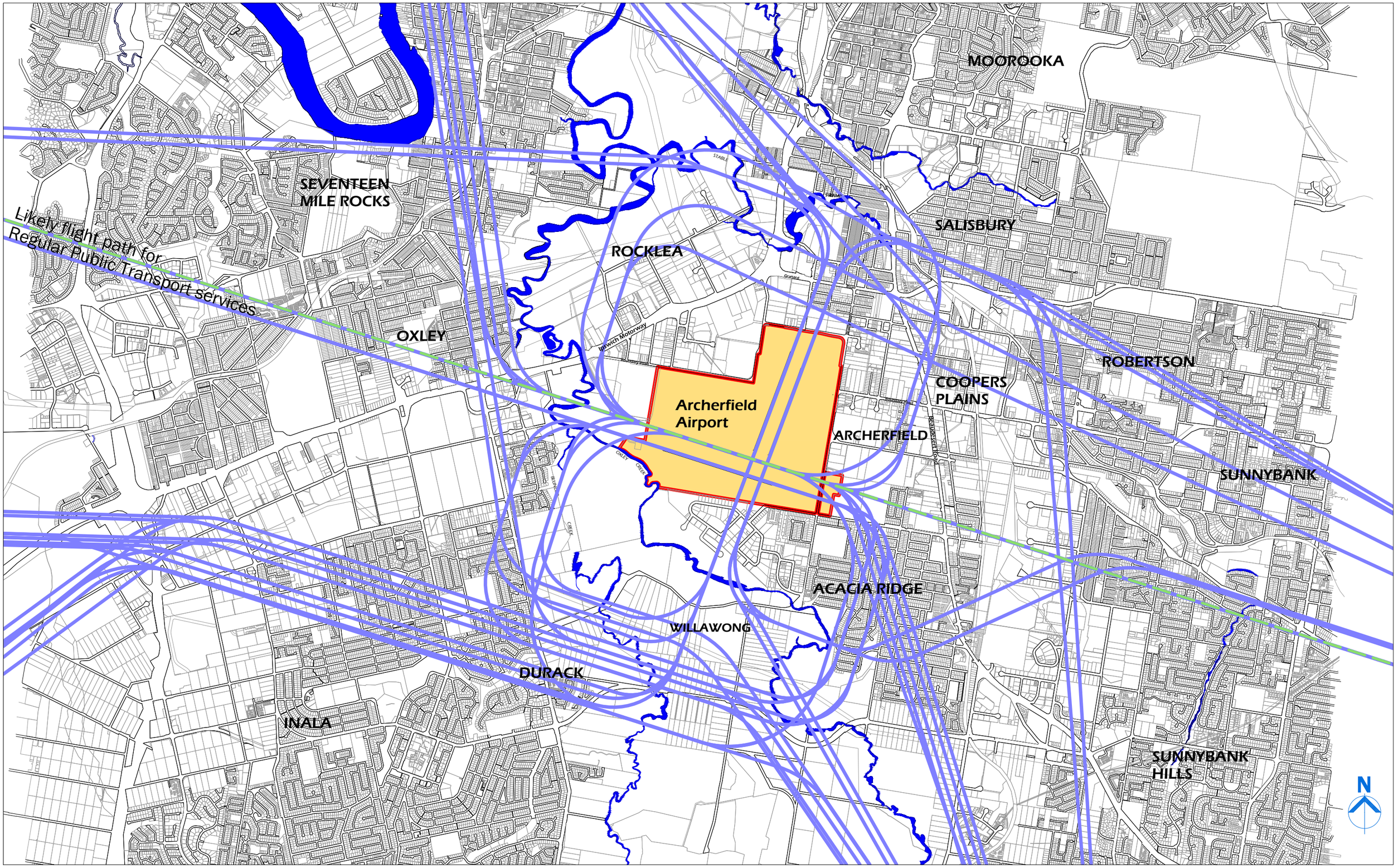

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Figure 6 **Fixed wing departure flight paths**

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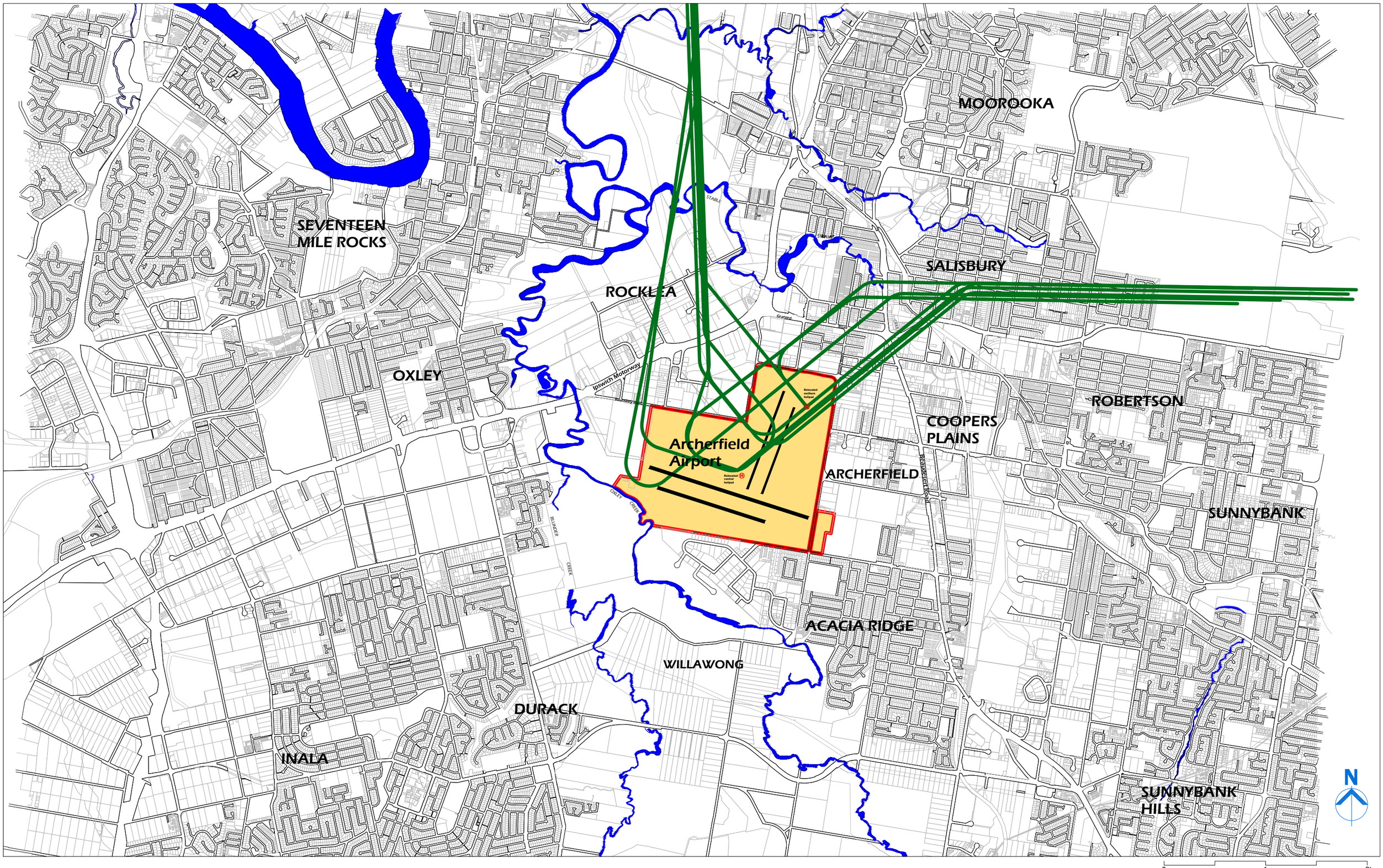

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Figure 7 **Helicopter approach flight paths**

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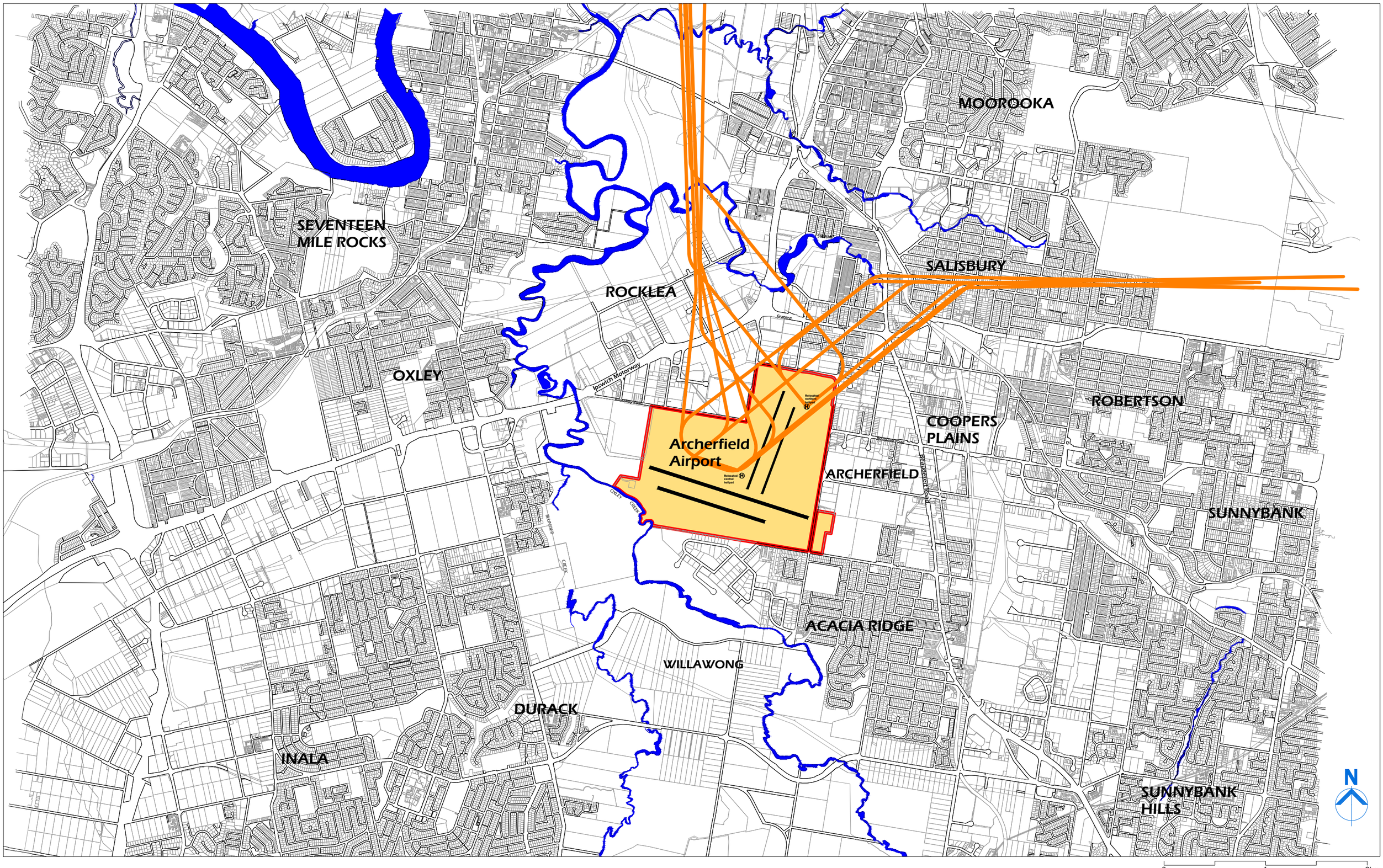

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Figure 8 **Helicopter departure flight paths**

PlannedFX Planning Environment Strategy Design

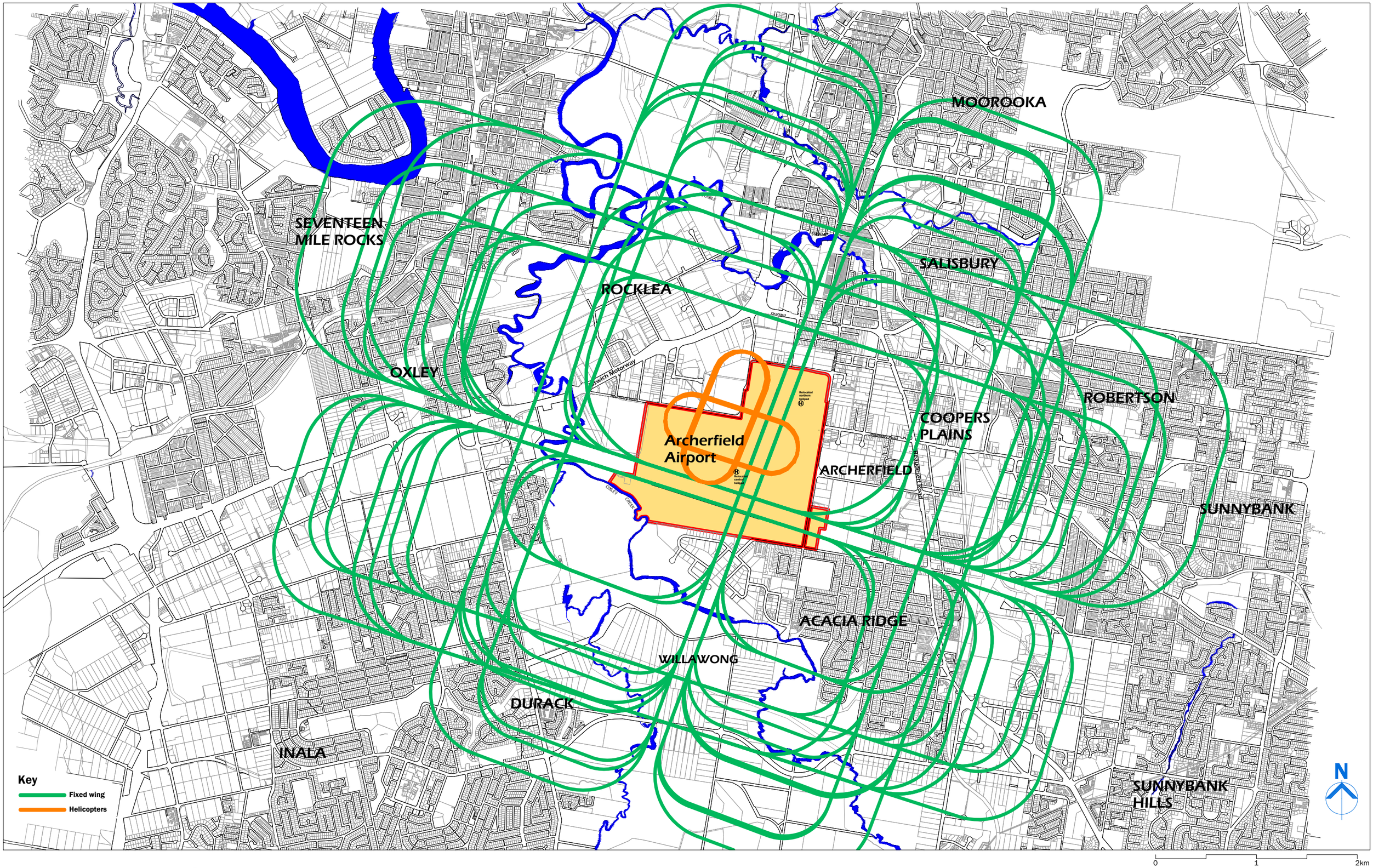

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Figure 9 **Training circuits**

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7 Aviation development

7.1 PROGRESSIVE IMPROVEMENTS

The Master Plan provides for the progressive development of the aviation facilities at the airport, consistent with the vision for the airport.

The vision for this is summarised in Figure 2.

Building on the significant aviation infrastructure modernisation works implemented by stages 1-3 of Project AIM which included:

- reconstructing, lengthening and strengthening the main 10L/28R runway and incorporating modern runway and taxiway lighting, navigation aids (RTILs and PAPI) and Runway End Safety Areas to cater for larger aircraft and potential niche RPT operations or other significant aviation users;
- upgrading the associated primary taxiways, to facilitate efficient airport operations including by larger aircraft; and
- upgrading the Eastern Apron, the Jet Turbine parking area and Hotel, to provide more aircraft parking, adjacent to the main runway complex;

a series of additional improvement projects has been identified. Each project will support one or more initiatives that will strengthen the capacity of the airport to serve the changing needs of Brisbane and the growing SEQ region.

Proposed aviation infrastructure development includes:

- realigning the secondary grass parallel runways to avail approximately 500m of land immediately adjacent to the north side of the main runway for high-end aviation uses, and more than 2 ha of aviation land in the area between Taxiways Juliet and Hotel for further aviation developments, and at the same time to improve overall runway usability, particularly for flying training;
- augmenting the taxiway system to maximise runway capacity and efficient ground movement of aircraft;
- strengthening and expanding apron facilities to cater for increased aircraft numbers, and potentially heavier aircraft;
- investigating the feasibility of relocating facilities such as the fuel farm and control tower, if, because of their locations, they constrain future aviation development or their relocation would improve airport operations;
- upgrading visual and navigation aids to provide an improved flying training environment;

- consolidating helicopter activity so as to improve safety by separating rotary from fixed wing operations;
- identifying locations for terminal and apron facilities for potential niche RPT operations or other significant aviation users (shown as 'future aviation capacity' in the *Master Plan vision* and in the Precinct Structure Plans);
- expanding opportunities for facilities for aeromedical and emergency services, including for operations and maintenance;
- maintaining an option to construct a new longer runway between the existing 10/28 parallel runways, potentially crossing Beaufighter Avenue; and
- making new, improved facilities available to tenants currently occupying ageing premises and/or allowing them to expand their businesses.

These initiatives are shown in Figure 2 *Master Plan vision.*

The timing of specific projects is dependent on the need being demonstrated and further investigations and design. The triggers for the main projects are set out in Chapter 18 *Implementation*, and will be monitored by AAC on an ongoing basis.

The detailed design and any approvals required for a specific project will be resolved in accordance with the processes described in Chapter 18, and the relevant provisions of the AES. In a number of cases, the proposals will be subject to approval by the Minister of a Major Development Plan.

7.2 SECONDARY GRASS RUNWAYS

The secondary grass runway complex caters for a minority of cross wind limited, light aircraft when prevailing wind conditions prevent their safe use of the main runways.

Analysis of wind conditions shows that a secondary runway alignment is required for approximately 12% of the time, during daylight hours only by these aircraft. However, the existing grass runways have historically been closed for approximately 27% of the time due to rain.

The susceptibility of the runways to being rain affected has implications for the light aircraft usage of the airport and for the flying schools in particular. There are times when the schools are unable to fly due to the combined effects of unfavourable wind and waterlogging or scouring of the grass runways.

In combination with providing more efficient aviation services, AAC has identified this as a significant issue, impacting on the sustainable growth of flying activity and access to the main runway complex.

The limitation of the existing runways has been highlighted by a succession of rain and flood events in the Oxley Creek. During the flood peak in January 2011, a portion of runway 04L/22R (to 9.25m AHD) was submerged.

In conjunction with the 2011 flood, prolonged periods of heavy rain from 2010 to 2012 caused significant erosion and degradation of the grass runways complex. Continued rain prevented reconstruction works throughout this period, rendering the grass runways and taxiways unserviceable for all but two weeks between December 2010 and September 2012. In effect this quarantined approximately 60 hectares, or nearly one-quarter, of the airport's total land mass for almost two years.

AAC has investigated various options for improving the usability of the secondary grass runways and to decrease the likelihood of their closure following heavy downpours.

The preferred solution, developed in consultation with stakeholders including the flying schools, CASA and AsA during the process of preparing the 2012 Master Plan, is to improve runway usability by moving the grass runways out of the low lying flood prone areas and realigning the secondary runway complex to better cater for local wind conditions. This strategy was included in the 2012 and 2017 master plans, and has been carried forward into this master plan.

The realigned and improved runway complex should provide an increase in overall runway usability of 3.1 percentage points (to 99.43% or an additional 11.3 days per annum) for light aircraft.

Due to the high degree of variance across their longitudinal surfaces, the existing grass runways do not conform with current ICAO standards. The proposed realignment to a bearing of 01/19 (to be designated 18/36 to avoid confusion with the new parallel runway at Brisbane Airport) will improve their usability, bring them up to current standards, move them away from low lying areas, decrease the likelihood of heavy rainfall induced degradation and reduce the effects of crosswinds.

Additionally, the realignment will increase the amount of land usable for high end aviation purposes in the prime aviation areas along the north side of the main runway and Taxiway Bravo; and along the east side of the secondary runway complex, in the Beatty Precinct.

The plans show that with the realignment, approximately 500m of usable land adjacent to (and fronting) the north side of the main runway will be released for high-end aviation uses, capitalising on direct access to the airport's most valuable asset. This will create efficiencies for operators in terms of reduced taxiing times, reduced fuel usage and subsequently reduced emissions.

The realigned runways will also be a catalyst for the development of new aviation facilities between Taxiways Hotel and Juliet in the Beatty Precinct, and the more efficient use of land along the east side of the runway complex, for aircraft parking.

Furthermore, it will create opportunities for complementary industrial, commercial and service uses in the Ashover and Barton precincts to offset the costs required to improve drainage in this area and relocate the grass runway complex, and strengthen the economic activity on the airport. An ongoing return

from this area of land, which is currently underutilized, will provide additional capital required to improve existing facilities and to ensure the growth of the airport into the future.

Following realignment, the secondary runway complex will continue to only be used by light aircraft, and only during daylight hours. If RPT aircraft are to once again operate at the airport, they will be confined to the main sealed (10/28) runway only.

The proposed realignment of the secondary grass runways will be further examined when a Major Development Plan (MDP) is prepared for this project.

The MDP process will include additional investigations and design, and further consultation with potentially affected stakeholders.

More information about the benefits associated with the realignment can be found in Chapter 17.

7.3 LONGER TERM PROJECTS

The Master Plan also foreshadows the longer term option for a new runway aligned parallel to the existing main runway, to cater for larger aircraft should the need arise in the future.

This would replace a similar runway that was in place earlier in the airport's history, and may potentially extend west over Beaufighter Avenue which is an AAC road located on airport land.

Any new or extended runway will be confined to land under the control of AAC.

The opportunity for an extension further to the west onto BCC owned land exists, however this would only be possible if all three levels of Government, AAC and the community determined it appropriate and feasible.

Before any new runway could be constructed, the project would be subject to approval under the Airports Act. A Major Development Plan would have to be prepared and be approved by the Minister. Detailed plans and assessments would be required, and the plans would be subject to consultation with a range of stakeholders, including BCC.

8 Airport land use

8.1 LAND USE CONTEXT

8.1.1 Existing conditions

The airport site has an area of approximately 257.7 hectares.

It is an important part of the Archerfield/Rocklea/Acacia Ridge area, and is located in an industrial and transport services corridor of regional significance.

Surrounding land use is shown in the *Airport context* drawing (Figure 3) and the *Current airport land use context* plan (Figure 10). Existing conditions on the airport are shown in Figure 4.

The majority of land use around the airport is industrial or commercial.

Industrial areas are located to the north, north—west, east and south of the site. Along the northern and western boundary is a general and heavy industrial area that runs parallel with the Ipswich Motorway. Industrial estates are also adjacent to the eastern boundary of the airport, along Beatty Road.

The industrial estate of Archerfield is adjacent to the southern boundary. This area also houses a speedway and extends to the open space along the Oxley Creek.

The main residential areas in the vicinity of the airport are Acacia Ridge, located to the south-east of the airport, across Mortimer Road and further east beyond Beatty Road; and the residential area of Durack, to the south of Oxley Creek.

The residential suburb of Salisbury is located to the north east of the airport, beyond the industrial area. Some of the dwellings in Salisbury are located on a hillside facing the airport and are under the flight paths for the existing secondary grass Runways 04L and 04R. The closest dwellings are about 1km from the north-east corner of the airport.

To the west and south are the Oxley Creek and associated floodplains. This, in conjunction with the nearby Blunder Creek forms part of a regional habitat link and waterway running through the south—west urban area of Brisbane, to the Brisbane River. Also in this area are the Queensland Urban Utilities (UU) Sewer Pumping Station, and the Woolsheds located on Boundary Road.

ROCKLEA
Industry/employment

SALISBURY
Residential

Rail link to Brisbane, Port of Brisbane, and Brisbane Airport via Air Train

Existing drainage outfall from airport through industrial area to Oxley Creek

Existing drainage outfall from airport through industrial area to Stable Swamp Creek

East-west road link

Existing drainage outfall from airport through industrial area to Stable Swamp Creek

ARCHERFIELD
Industry/employment

Bulky goods retailing

Open space

Oxley Ridge estate

Medium density housing

Existing drainage outfalls from airport to Oxley Creek

Open space and land extensive uses

Remnant vegetation in floodplain of Oxley and Blunder Creeks

Forest Place retirement village

Sand extraction

Archerfield Speedway

Stormwater detention basin

Control tower

Open space

Existing drainage outfall from airport to Oxley Creek

ACACIA RIDGE
Residential

Acacia Ridge intermodal freight terminal

National Rail link to Sydney

Land use

- Low impact industry
- General industry
- Heavy industry
- Residential
- Community use
- Convenience centre
- Rural area
- Parkland
- Conservation
- Sport and recreation

0 500 m

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Figure 10 **Airport land use context**

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The area between the Oxley and Blunder Creeks is an important sand resource, and there is active sand extraction underway on the south side of Oxley Creek, on Bowhill Road approximately 800 metres from Mortimer Road (to the south of the airport).

The airport has been operating in this location since the 1930's and has been well protected by the aviation, land use, transport and economic development policies, strategies and controls administered by Queensland State Government, and Brisbane City Council.

The airport forms part of the national network of airports in Australia, and the importance of its continued operation is recognised in the *National Airports Safeguarding Framework*, which is implemented with the support of local, State and Federal government across Australia. More information is provided in Section 9 of the master plan.

8.1.2 Pre-existing leases, licences and easements

When Archerfield Airport Corporation became the airport-lessee company for Archerfield Airport in 1998, it assumed certain pre-existing obligations under various leases and easements.

While some of those pre-existing interests have now expired, others remain. In particular, Archerfield Airport Corporation notes that there are pre-existing interests in the form of leases with some general aviation and other tenants at the airport; statutory authorities; and easements for other utilities and works.

The easements include those related to the UU sewer pump station adjacent to Oxley Creek; and an easement for an earthen flood protection bund constructed along the west side of Beaufighter Avenue as part of the woolshed development on the neighbouring land (off airport).

With the development of Transition – Archerfield Logistics Estate (Transition Estate), an easement has been provided on Transition Drive to facilitate electricity supply to this part of the airport by Energex.

With regard to other pre-existing interests at the airport, AAC will for the remainder of their term or earlier termination, and subject to their terms, comply with them to the extent it is legally obliged to do so.

8.2 AVIATION DEVELOPMENT

The airport currently has 169 sites, of which 120 are developed with structures. 72 are hangar and aero port sites (most being able to accommodate multiple aircraft).

The facilities are mainly used as aircraft hangars and workshops. Facilities also include flying schools, the recently renovated historic Airport Administration and Terminal building, and the control tower which is located mid way along the southern boundary (off Lores Bonney Drive).

There are over 166 aviation and non-aviation businesses on site employing hundreds of people.

9 Airport protection

9.1 BACKGROUND

The Commonwealth *National Airports Safeguarding Framework* provides guidance for planning and development decisions that could affect aviation operations.

The framework was developed by the National Airports Safeguarding Advisory Group (NASAG), comprising Commonwealth, State and Territory Government planning and transport representatives, the Australian Government Department of Defence, the Civil Aviation Safety Authority (CASA), Airservices Australia and the Australian Local Government Association (ALGA).

The framework applies to all airports in Australia, and land around airports. The framework promotes a consistent approach to assessing and managing land use and development in the vicinity of all airports.

The framework was adopted by the relevant Ministers in 2012 and now comprises a set of principles for airport safeguarding, and guidelines. It is being implemented by all levels of government.

There are seven principles;

> *Principle 1. The safety, efficiency and operational integrity of airports should be protected by all governments, recognising their economic, defence and social significance.*
>
> *Principle 2. Airports, governments and local communities should share responsibility to ensure that airport planning is integrated with local and regional planning.*
>
> *Principle 3. Governments at all levels should align land use planning and building requirements in the vicinity of airports.*
>
> *Principle 4. Land use planning processes should balance and protect both airport/aviation operations and community safety and amenity expectations.*
>
> *Principle 5. Governments will protect operational airspace around airports in the interests of both aviation and community safety.*
>
> *Principle 6. Strategic and statutory planning frameworks should address aircraft noise by applying a comprehensive suite of noise measures.*
>
> *Principle 7. Airports should work with governments to provide comprehensive and understandable information to local communities on their operations concerning noise impacts and airspace requirements.*

The principles acknowledge the importance of airports to national, state, territory and local economies, transport networks and social capital.

The framework includes guidelines on managing:

- aircraft noise (including application of the ANEF);
- building-generated windshear and turbulence;
- wildlife strike risk;
- wind turbine risk, as physical obstacles to air navigation (not directly applicable to Archerfield);
- pilot lighting distraction;
- protected airspace intrusion (interpretation and application of OLS/PANS-OPS to prevent intrusions by for example trees, buildings, poles, signs, or other structures);
- protection of aviation facilities – communication, navigation and surveillance (not applicable);
- protection of strategically important helicopter landing sites (not applicable to Archerfield as the helicopter landing sites are within the airport land); and
- Public Safety Areas.

The Commonwealth requires the adoption of the Australian Noise Exposure Forecast (ANEF) system for determining land use compatibility around Australian airports.

In addition, the maximum height of obstacles allowed in proximity to each airport is defined in the prescribed airspace for the airport.

9.2 PRESCRIBED AIRSPACE

Prescribed airspace is defined under the *Airports (Protection of Airspace) Regulations* as airspace above any part of either the *Obstacle Limitation Surfaces* (OLS) or the *Procedures for Air Navigation Services—Operations* (PANS-OPS) surfaces, whichever part represents the lower airspace, for any airport.

Figure 11 shows the current OLS/PANS-OPS for the airport. Figure 12 shows the OLS/PANS-OPS for the airport once the secondary runway complex has been realigned.

For the continued safe operation of the airport surrounding development must comply with the height maxima specified in the OLS/PANS-OPS.

Any existing incursions into the OLS/PANS-OPS, are documented in appropriate publications for pilots.

Brisbane City Plan 2014 includes in the Airport Environs Overlay mapping of the OLS/PANS-OPS, and other provisions for airport safeguarding as set out in the State Planning Policy.

RWY 28R
Standard Instrument Departure

RWY 10L RNAV

RWY 10L
Code 3 NPA
RL 202.3m AHD

Cat C aircraft circling area RL 227m AHD

Cat A/B aircraft circling area RL 187m AHD

RWY 28R RNAV
RL 141.4m AHD

RWY 10L
Standard Instrument
Departure

Conical Surface

Reference elevation
datum 14.0m

Inner Horizontal Surface
RL 59m AHD

59m

134m

RWY 28R
Code 3 NPA
RL 208.6m AHD

N

0 5 10km

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Figure 11 **Current OLS/PANS-OPS surfaces**

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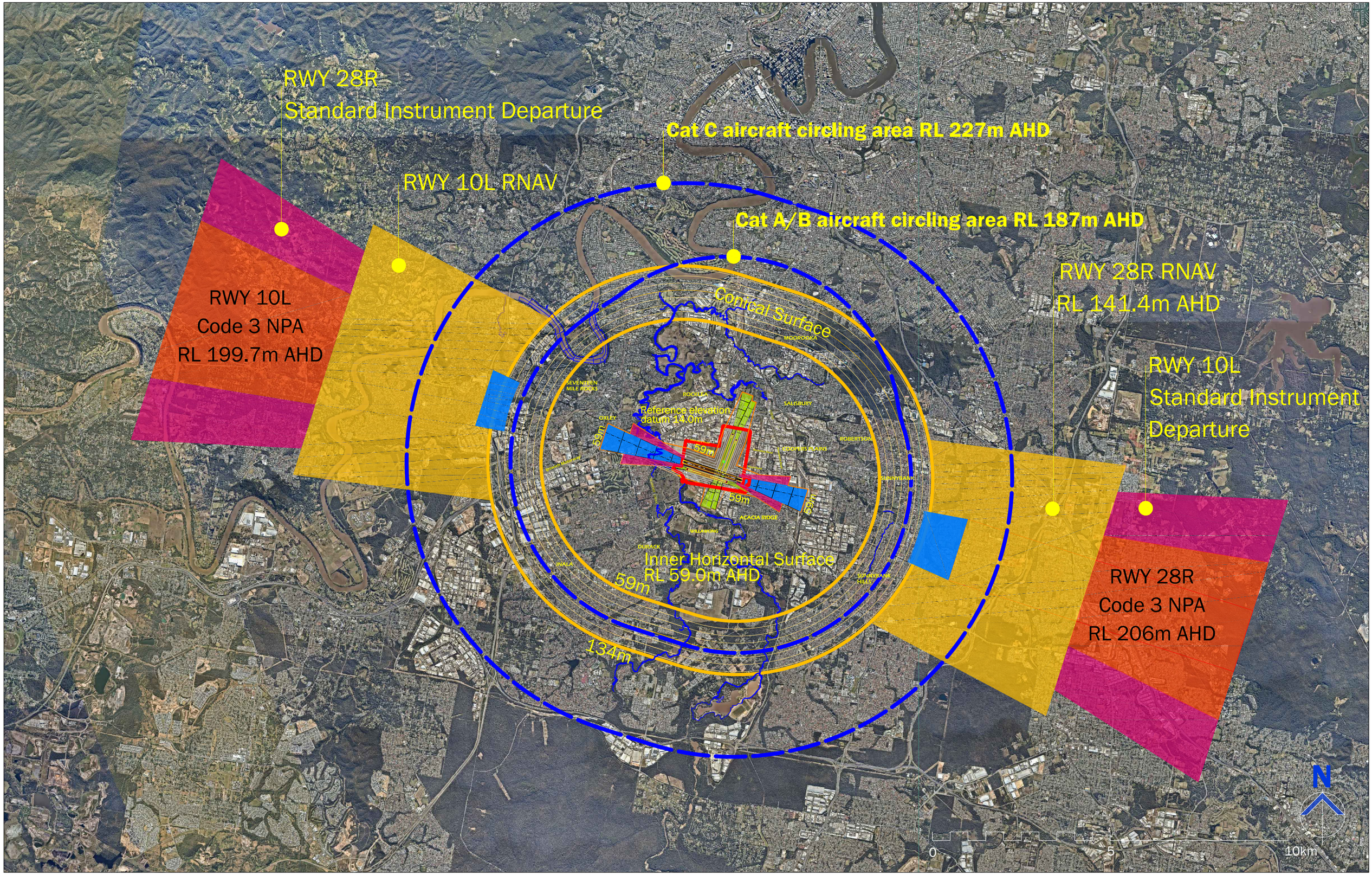

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Figure 12 **Future OLS/PANS-OPS surfaces**

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Future requirements

Protection of airspace from unacceptable intrusions is of fundamental concern to AAC.

Accordingly, AAC will continue to work closely with BCC and the State Government to:

- identify any intrusions into the airport airspace;
- ensure that the planning controls relevant to areas around the airport contain sufficient safeguards; and
- ensure that the design, construction and operation of any future developments does not compromise safe and efficient airspace and aviation operations.

AAC will continue to provide to these agencies and to the proponent of any proposal advice on airport operational aspects, design and development requirements to ensure that all future development complies with these requirements.

Where intrusions into airspace are identified, AAC will work with the relevant authorities and landholders to confirm the airspace protection requirements and the actions that will be taken to rectify any incursion.

BCC is required under State Planning Policy to ensure that current airspace protection requirements are reflected in the planning scheme, and that any requirements specified in the planning scheme are enforced. Should there be any change to the airspace AAC will advise BCC.

9.3 RESTRICTED LIGHT ZONES

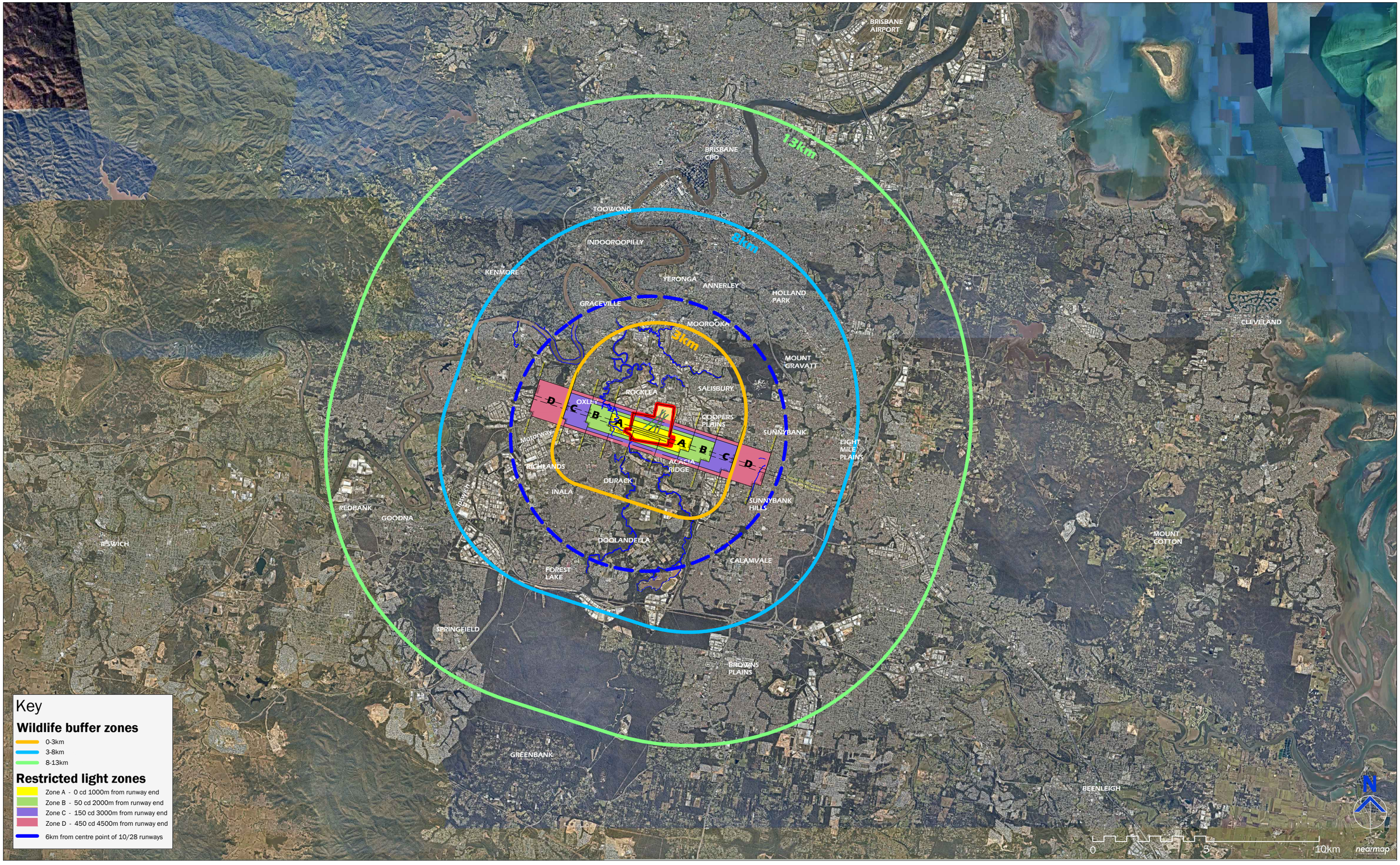
Pilots rely on aeronautical ground lights, such as runway lights and approach lights to guide their safe landing during inclement weather and outside daylight hours.

It is important that other lighting in the vicinity of airports is specified, installed and maintained so it does not distract pilots, or confuse them.

Guideline E in the *National Airports Safeguarding Framework - Managing the risk of distractions to pilots from lighting in the vicinity of airports* aims to minimise the potential hazard to aircraft operations from lighting systems by protecting pilots from being dazzled or distracted by lights, or being confused by light patterns that look similar to approach or runway lighting.

Significant new lighting on land surrounding the airport has the potential to conflict with aeronautical ground lights, and requires detailed assessment and approval. Potential light sources include security lighting, illuminated signs, construction lighting, street and motorway lights and illuminated sports fields.

The primary area of concern is within 6km of the centre point of each of the 10/28 runways. This is shown in Figure 13.



Archerfield

Brisbane's Metropolitan Airport

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Figure 13 **Light and wildlife zones** **DRAFT September 2022**

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Within the 6km area, four light control zones have been mapped, extending beyond each end of the 10/28 runways. These are designated 'A', 'B', 'C' and 'D'. For each area, a maximum allowable intensity of light is specified, to ensure that pilots can safely navigate to land on the main runways at Archerfield.

The zones have been mapped consistent with CASA guidelines and NASF Guideline E. All proposals for significant lighting within 6km of the 10/28 runways must be assessed, and advice from CASA may be required to ensure that lighting meets the requirements of the NASF and Civil Aviation Regulations.

The secondary runways do not require specific light intensity controls, as they are not used outside daylight hours.

Additional information about lighting is also contained in the airport environs overlay in the *Brisbane City Plan 2014*; and in relevant Australian Standards including AS4282-2019 *Control of the obtrusive effects of outdoor lighting* and AS 2560.1:2018 *Sports lighting* (general principles), and relevant guides in the series.

Future requirements

AAC will continue to work with BCC, CASA and landholders to minimise the potential hazard to aircraft operations of light emissions in the vicinity of the airport.

9.4 FORECAST NOISE IMPACT—ANEF

Aircraft noise forecasts are an important tool to protect the airport from unreasonable encroachment by incompatible, noise sensitive developments; provide for the ongoing operation of the airport and for future aviation use, and minimise the impact of aircraft noise on existing and future communities.

9.4.1 ANEF mapping for Archerfield

The noise impact of aircraft in flight is illustrated by Australian Noise Exposure Forecast (ANEF) mapping, prepared for the larger metropolitan and regional airports Australia-wide.

The ANEF system is used determine whether proposed use and development in the vicinity of the airport is appropriate from a noise perspective, in accordance with State Planning Policy, the Brisbane City Plan and *Australian Standard AS 2021-2015 Acoustics-Aircraft noise intrusion-Building siting and construction*.

The ANEF for each airport is reviewed and endorsed by Airservices Australia to guide land use planning around airports. The modelling takes into account:

- the intensity, duration, tonal content and spectrum of audible frequencies of the noise of aircraft take offs, landings and flyover;
- the forecast frequency of aircraft types and movements on the various flight paths, including flight paths used for circuit training; and

- the average daily distribution of aircraft arrivals and departures in both day time (7:00am to 7:00pm) and night time (7:00pm to 7:00am).

Forecast noise levels are mapped as a series of contours extending out from the runways. The ANEF contours show land areas that are expected to be exposed to aircraft noise. The higher the ANEF value, the greater the noise exposure expected.

Aircraft noise contours are affected by many factors such as topography, runway geometry, aircraft types, movement numbers, runway utilisation, altitude restrictions, flight track geometry (and subsequent assignment of aircraft to individual flight tracks), and the day/night split in aircraft movements. These factors are taken into account in the noise modelling that is undertaken for an ANEF.

9.4.2 20 year ANEF for Archerfield Airport

For the 2022 Master Plan, AAC prepared a 20 year ANEF for the period to 2042 and this is shown in Figure 14. The ANEF was endorsed by Airservices Australia on 8 August 2022.

The *20 year ANEF* illustrates the noise contours that could be generated by aircraft flights for the 20 year planning period covered by the master plan.

The ANEF has been prepared using the Aviation Environmental Design Tool (AEDT) modelling software, and data that is specific to Archerfield Airport. The AEDT software is provided and maintained by the US Federal Aviation Administration (FAA), and is the industry-standard software for aircraft noise modelling in Australia. Airservices Australia requires that the AEDT is used when preparing an ANEF.

The 2042 ANEF prepared for Archerfield Airport takes into account:

- The elevation of the airport, and the topography of the site and surrounding areas.
- The configuration of the airport's operational airspace.
- The layout and geometry of the airport runways, including the planned realignment of the secondary runways, which is scheduled to be implemented within the next 8 years (and preferably by 2027). The proposed realignment is foreshadowed in the current approved *2017-37 Archerfield Airport Master Plan* (and the 2011-31 master plan).
- Local meteorological conditions, and wind, cloud and rain in particular. These affect the flying performance of aircraft, and which runways are used by them.
- The types of fixed wing aircraft and helicopters using the airport, and the fleet mix (now, and by the end of the 20 year planning period).
- Flight paths, mapped for arriving and departing aircraft and for training, taking into account airspace characteristics and operational requirements. Separate analysis has been undertaken for fixed wing and helicopter

operations, and the findings are incorporated into the ANEF. The flight tracks have been reviewed and confirmed as representative of aircraft operations by the Archerfield Airport air traffic controllers.

- The number of aircraft movements forecast by 2042.
- The times of day that the movements will occur (noting that the secondary runways will not operate at night time), and the frequency of movements on a daily basis. This ensures that the modelling recognises that people are generally more sensitive to aircraft operations at night.

The AEDT model draws upon an extensive database which has details of the operating characteristics of each type of aircraft that will be operating at Archerfield. This includes information about the thrust setting, airspeed and altitude of aircraft when taking off and landing.

Noise impacts are calculated by applying aircraft flight profiles, performance data and noise-power-distance (NPD) curves to the runway configuration and flight tracks specific to the airport.

The ANEF takes into account existing standards, the projected aircraft flight numbers by 2042, the projected movement patterns (including the planned re-alignment of the secondary runways), and the likely aircraft mix over the next 20 years.

The ANEF contours reflect a total of approximately 294,000 aircraft movements per annum at Archerfield by the year 2042 (with approximately 261,000 of these being fixed wing aircraft and just over 33,000 being helicopters).

The airport is currently catering for approximately 125-130,000 flights per annum, and over the course of the next 20 years is expected to handle between 187,000 and 295,000 flights.

The ANEF also assumes that:

- the realignment of the grass runways occurs around the time that the airport is catering for approximately 175,000 movements per annum;
- the central helicopter landing pad will be relocated to the west of the realigned secondary runway complex. It will be more central to the airport and within the Wirraway precinct, which is designated for future aviation development;
- the new secondary runway(s) will be used during the day, and by light aircraft only. No night movements will be associated with these runways;
- the noise emissions from any aircraft flights at night-time (7pm to 7am) are multiplied by a factor of four in the ANEF modelling, in recognition that people are generally more sensitive to aircraft operations at night;
- freight and potential Regular Public Transport (RPT) movements are included in the modelling for the 10/28 runways only (these aircraft will not use the secondary runway complex); and

- the aircraft fleet will progressively be modernised over the next 20 years, and the ANEF reflects the noise emissions from newer aircraft that are currently available.

Under the Airports Act, a new ANEF must be prepared for each new master plan. In the case of Archerfield Airport, this will occur on an eight year cycle. This gives the opportunity for the ANEF to take into account the aviation operations, aircraft characteristics, and technology in use at that time.

Although it is possible that over the next 20 years some aircraft may use alternative propulsion with reduced noise emissions, (for example with electric motors), this has not been factored into the noise modelling for the 2042 ANEF.

The possibility of an additional 10/28 runway has not been included in the 20-year forecast as it is a long-term (> 20 years) preliminary concept only, and it is not possible at this time to be definitive about the likely location or length of any future runway, or the aircraft characteristics and operations that would be accommodated.

Before the concept could progress it would be subject to a range of investigations and consultation with potentially affected people. It would also be subject to additional approvals (including a Major Development Plan, under the Airports Act).

9.5 N70 MODELLING

To assist with interpreting potential noise impacts from aircraft, an 'N70' model has also been prepared. The model is used to create a map of the predicted average number of noise events per day above 70 dB(A) from aircraft flights.

The 70dB(A) level is the industry standard used for assessing noise events that are likely to cause interruptions to conversation or with listening to the radio or the television.

Australian Standard AS2021 *Acoustics—Aircraft noise intrusion—Building siting and construction* specifies 60 dB(A) as the indoor design sound level for normal domestic dwellings. External noise will be reduced by approximately 10 dB(A) by the fabric of a house with open windows.

Typical conversations occur around the 60-65 dB(A) range. Aircraft noise is less likely to be noticeable where background noises are present, for example from domestic air conditioners, nearby traffic, or during winter when windows typically are closed.

The N70 map, in Figure 15 shows the expected frequency of noise events in excess of 70dB(A) in the year 2042. The modelling assumes that by 2042 the secondary runway complex will have been realigned, and the helipads relocated as provided for in the master plan.

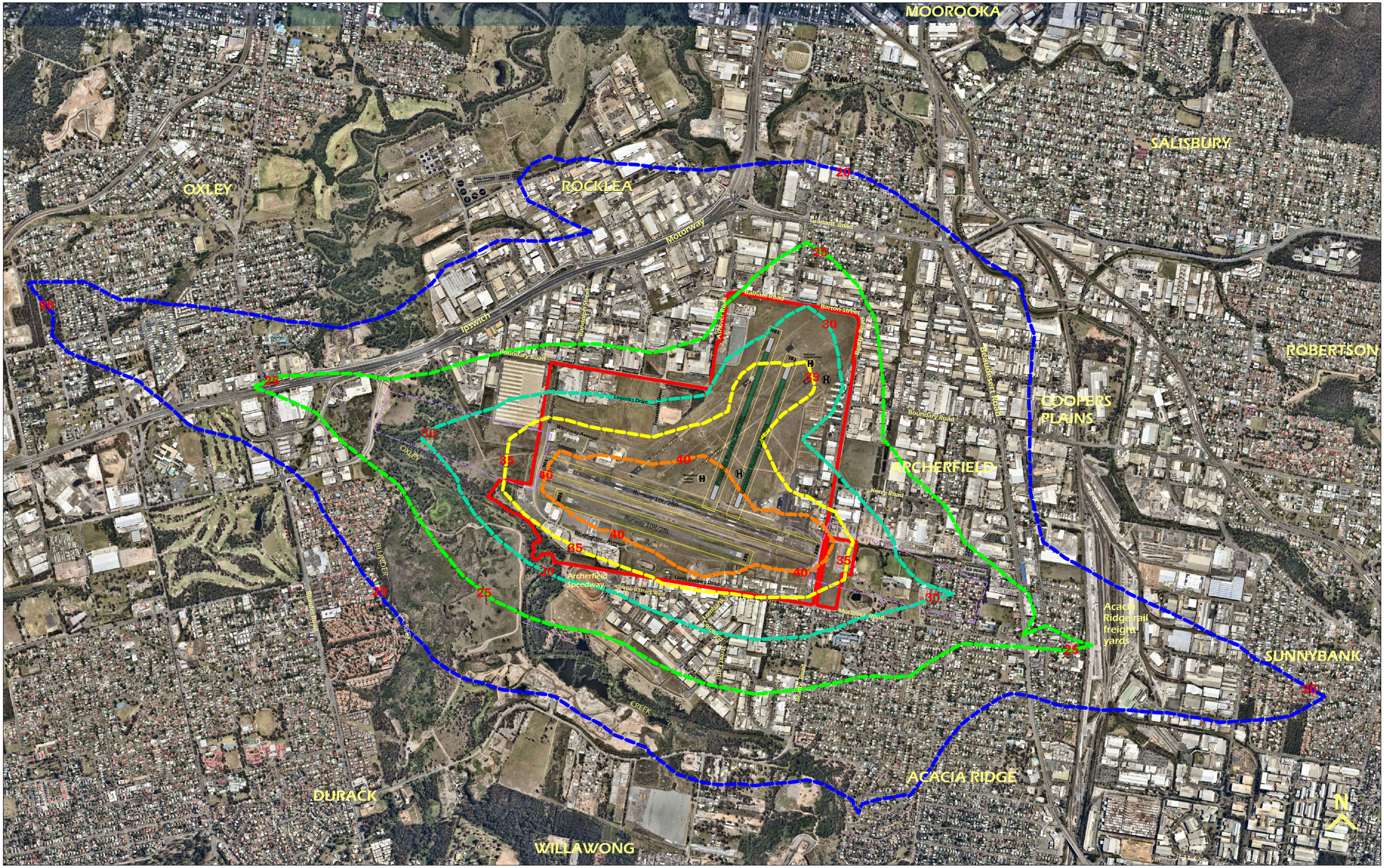

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Figure 14 **20 year ANEF (to 2042)**

Extent of *Public Safety Area* as defined in State Planning Policy

Airport boundary

Archerfield

Brisbane's Metropolitan Airport

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The N70 modelling recognises that people are generally more sensitive to noise at night time.

To ensure that potential impacts are appropriately represented in the mapping, the model applies a four-fold increase when calculating noise levels for any aircraft flights during the period 7pm to 7am.

It is important to note that the secondary runway complex (either in its current alignment, or following the proposed realignment) is not used at night time and therefore does not contribute to night-time noise from aircraft at Archerfield. The secondary runway complex is also not used by larger aircraft, such as for RPT or freight, as these operate only from the main 10/28 runway complex.

The majority of aircraft movements at Archerfield are light aircraft, and most are used in flying training. The training usually includes a series of 'touch and go' take off and landing movements, undertaken in circuits.

9.6 OTHER NOISE SOURCES

Noise from an airport (other than discussed above) may be caused by a number of activities.

Issues that have been addressed in the AES include:

- ground running of aircraft;
- noise from aircraft parked near buildings;
- operation of engine test cells;
- construction operations; and
- road traffic movements.

These may affect the area immediately surrounding the airport.

9.6.1 Management

Current and proposed noise management initiatives and procedures adopted by AAC are discussed in section 16.10.

Initiatives by AAC relating to management of airport noise include:

- implementing the Archerfield 'Fly Neighbourly' program and code of conduct (first implemented in 2015, and updated following a review in 2021);
- educating aircraft operators and pilots through the airport Safety Management System;
- providing residents and other landholders with information and advice about airport activities, and the management of noise impacts on the use or development of their land;
- meeting quarterly with AsA to identify and implement actions to optimise airport operations, including addressing noise management aspects;

MOOROOKA
SALISBURY
OXLEY
ROCKLEA
ROBERTSON
COOPERS PLAINS
ARCHERFIELD
SUNNYBANK
DURACK
ACACIA RIDGE
WILLAWONG
STABLE
SWAMP
CREEK
Motorway
Granard Road
Ipswich
Boundary Road
Balham Road
Barton Street
Ashover Road
Beaudesert Road
Beaufighter Avenue
Wirraway Avenue
Tranation Drive
Runway 04L/22R
Runway 04R/22L
Runway 10L/28R
Runway 10R/28L
Kerry Road
Mortimer Road
Archerfield Speedway
Lores Bonney Drive
Golebard Street West
Gollogly Street East
Brisbane Road
Blunder Road
BLUNDER CREEK
Acacia Ridge rail freight yards
5
10
20
50
N
0
0.5
1
1.5km

Number of flights of 70dB(A) and above in a 24 hour period

NOTE: The secondary runways are only used during daylight hours

- 50 or more flights
- 20-49
- 10-19
- 5-9
- 5 Number of flights per day
- Airport boundary

Archerfield
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Figure 15 **N70 (in 2042)**

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- working with AsA to identify and implement solutions to any noise complaints, where these relate to AAC's areas of direct responsibility as airport operator;
- directing ground running aircraft and testing activities to appropriate locations to minimise potential impact on surrounding areas;
- monitoring and reviewing airport facilities with the view to minimising the noise impact on the community;
- ensuring if a significant issue arises, that appropriate consultation processes are put in place to resolve the issue; and
- working with BCC and relevant government agencies to ensure that structures built near the airport have taken aircraft noise into consideration and that land in proximity to the airport is appropriately zoned, taking into account the aircraft noise patterns that are anticipated around the airport.

9.7 WILDLIFE BUFFER ZONES

Wildlife buffer zones shown in Figure 13 have been prepared in accordance with Guideline C in the *National Airports Safeguarding Framework*.

The buffer zones identify wildlife management requirements for existing and proposed uses, to minimise the risk of bird or other flying wildlife strike.

The risk of terrestrial wildlife to aviation operations on the airport is managed by maintaining perimeter fencing to the airside of the airfield, and undertaking ongoing surveillance to identify and address any wildlife within the operational area.

The NASF guideline includes advice on acceptable land uses (and management of these) in three zones: 0-3km, 3-8km, and 8-13km from the runways. The risks of wildlife strike are highest within the first 3km of each runway, and this zone is subject to the most stringent land use requirements to minimise risks from existing and proposed land use.

The City Plan acknowledges the requirement for wildlife buffers, and includes in the *Airport Environs Overlay* the following provisions:

The performance outcome sought in the designated buffers is: *PO4 Development does not attract birds and bats into operational airspace in significant numbers likely to cause a safety hazard to airport operations.*

The 'acceptable outcomes' for this provision are:

AO4.1 Development within the Bird and bat strike zone sub-categories area ensures that waste is covered and collected so that it is inaccessible to birds and bats.

AO4.2 Development involving landscaping or drainage works, including artificial water bodies located within the distance from airport 0-3km sub-

category, are designed and installed to minimise the potential to attract birds and bats.

The NASF guidelines include advice on appropriate land use, and requirements for wildlife management measures to be implemented for specific uses. AAC supports the consistent application of these guidelines to mitigate the hazard to pilots in the Archerfield airspace.

AAC supports the inclusion of the relevant airport safeguarding provisions in the City Plan (and the planning provisions for Logan City and Ipswich City, with respect to wildlife management requirements), and will continue to work with local and state government to ensure that wildlife related hazards are appropriately managed and all other relevant airport safeguarding requirements are implemented.

9.8 WINDSHEAR AND TURBULENCE

Buildings in proximity to the runways have the potential to cause turbulence or windshear, which can impact on the safe operation of aircraft.

NASF guideline B is referred to by AAC when it evaluates building proposals on the airport, or provides advice to proponents or authorities on proposals in the immediate vicinity.

Buildings that could pose a safety risk are those located within a rectangular 'assessment trigger area' around the end of each runway. These assessment areas, and the extended runway centrelines are shown in Figure 16. The Figure shows also a consolidated boundary that encompasses all of the trigger areas.

Within the defined assessment area, buildings are allowed provided their height is no greater than 1m for each 35m the structure is set back from the runway. The setback is measured as the horizontal distance, perpendicular to the runway centre line. For example, a 10m high building is allowed without further windshear or turbulence assessment if it is set back at least 350m from the runway centre line.

It is possible that there will be structures that penetrate the 1 in 35 surface but do not create an unacceptable risk to aviation safety.

Any proposed buildings that exceed the 1 in 35 ratio may be allowed, subject to further detailed assessment of windshear and turbulence effects.

The building proponent must satisfy the approval authority/decision maker that the building will not create an unacceptable risk to aircraft operations.

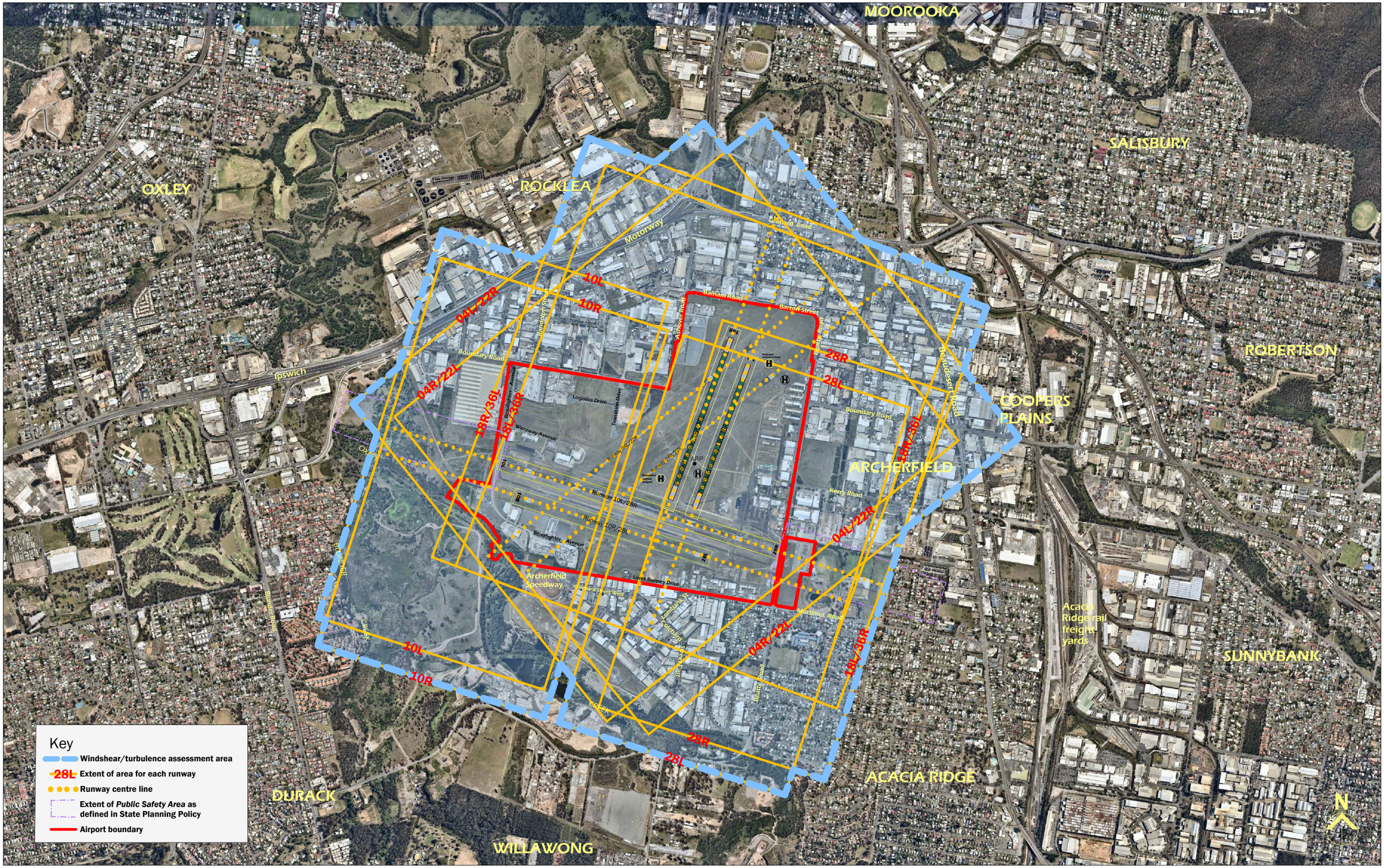

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Figure 16 **Windshear/turbulence assessment area**

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10 Ground transport

10.1 OVERVIEW

The airport is highly accessible to ground transport, including by road and the passenger and goods rail network (Figure 3 *Airport context*).

It is roughly in the middle of a triangle bounded by Beaudesert Road, Granard Road, the Ipswich Motorway and the Oxley Creek.

It is within 500 m of the Ipswich Motorway (to the west and north west) which is part of the national highway network and connects to Brisbane City, and to Ipswich (and ultimately to Sydney and beyond).

The airport is also approximately 1.6 km to the west of the National Rail main rail freight terminus at Acacia Ridge, on the Brisbane to Sydney line. It is also approximately 2.2km from Coopers Plains railway station, which is on the Brisbane - Gold Coast line.

The existing and planned landside transport network within and surrounding the airport is shown in Figure 17 *Ground transport plan*. The plan shows how the access is integrated into the road hierarchy described in the Brisbane City Plan, and the relevant provisions are summarised in section 3.4.2 of this master plan.

10.2 ROAD NETWORK

10.2.1 Regional roads

The regional road system comprises Beaudesert Road (to the east), Granard/Riawena Roads (to the north), and Ipswich Motorway (to the west). These are shown in Figure 3.

Granard Road and Ipswich Motorway are part of the National Highway system. These highway corridors are of national strategic importance and are funded by the Commonwealth Government. Granard Road and Beaudesert Road are designated in the Brisbane City Plan as 'arterial roads', and 'primary freight routes'. The 'arterial roads' provide intra-city connections between the major designations within Brisbane and surrounding areas including the principal regional activity centres and major employment areas. These carry 20,000+ vehicles per day.

ROCKLEA

Ipswich Motorway

Boundary Road

Randolph Street

Commercial and transport related support services (office, fuel, food, repairs etc)

Parking, display, storage

Road access to Barton Precinct

Balham Road

Ashover Road

Road widening investigation area shown hatched

Barton Street

Development oriented to face Barton Street and Beatty Road

Beatty Road

Road widening investigation area (east side of Ashover Rd and south side of Balham Rd)

New intersection at Ashover Rd
(Design is subject to further investigation, and consultation with BCC)

New road to provide access to aviation, industrial, commercial, service and office tenancies

Multi purpose hangars and industrial tenancies

Qantas Avenue extended northward

Road widening investigation area to facilitate BCC Beatty Road corridor project (shown hatched, north of Boundary Road)

Boundary Road extended into airport

Potential secondary cycle route in Beatty Road (as shown in Brisbane City Plan and SEQ Principal Cycle Network Plan)

Potential secondary cycle route in Boundary Road
(as shown in Brisbane City Plan)

Realigned secondary runway complex

18R

18L

Relocated northern helipad

Aircraft parking

Taxiway Hotel extended north

Controlled vehicle access to airside

Proposed Runway 18R/36L

Proposed Runway 18L/36R

Long term car park 56 spaces

Car park 68 spaces

Ground access to new aviation tenancies

Indented parking Qantas Avenue 104 spaces

Bus stop (110, 115)

New road entry to airport created by extending Kerry Road

Bus stop (122)

Kerry Road

Bus stop (122 Inala to Garden City)

Archerfield Square
122 car spaces and taxi drop off/pick up

Bus stop
(110 Inala to City, 115 Calamvale to City)

Indented parking Ditchmen Avenue
21 spaces

New access to Ditchmen Ave from Beatty Road
(Design is subject to further investigation, and consultation with BCC)

Road widening investigation area
(shown hatched, east side of Beatty Road)

Light industry, storage, parking

Mixed use

Bus stop (route 110, 115, 122)

Bus stop (110, 115, 122)

Bus stop

Road

20 spaces

12 spaces

30 spaces

24 spaces

Beaufighter Avenue

BP Truck Stop

2 Potential additional basin

Logistics Drive

Transition Drive

Stormwater treatment facilities

4 5 3

6 Potential additional basin

Industrial sites

Fire protection services

Wirraway Avenue

Future aviation capacity

New access roads for aviation and industry

Potential long term car parking (~800 cars)

Provision made for public transport access to RPT

Futurp aviation capacity

Potential site for RPT / air taxi

Aircraft parking

ARP

Relocated central helipad

Airport Administration and Terminal Building

Taxiway Bravo widened to Code C

Taxiway Alpha

Taxiway Charlie

Taxiway Delta

Taxiway Golf

Taxiway Foxtrot

Taxiway Juliet

Apron Juliet

Fuel farm

Turbine pad

Eastern Apron

Southern Apron

Car park

Runway 10L/28R

Runway 10R/28L

10L

10R

36L

36R

28L

28R

Future aviation capacity (RPT, air taxi etc)

Taxiway Bravo widened to 15m (Code C)

Taxiway Bravo (widened to Code C)

OXLEY CREEK

Buffer to Oxley Creek

Beaufighter Avenue

Stormwater basin 1

Archerfield Speedway

Lores Bonney Drive

Mortimer Road

Lombank St

Potential court off Lores Bonney Drive

Key

- Bus stop
- Car park (existing)
- Car park (proposed)
- Access road (existing)
- Access road (proposed)
- Driveway access
- BCC existing/proposed secondary cycle route (from Brisbane City Plan) incorporated into roads in the vicinity of the airport
- SEQ Principal Cycle Network

The design of new intersections with external roads will be determined in consultation with BCC

Additional aviation capacity on north side of main runways for corporate and specialised aviation (emergency services, RPT, air taxi, freight, etc)

Taxiways widened/upgraded to meet emerging needs

N

0 500 m

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Figure 17 Ground transport plan

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The regional road system provides linkages north to Brisbane via South East Freeway or Gateway Motorway, south east to the Gold Coast via the Pacific Highway or inland to Sydney via Ipswich. The interchange at Randolph Street (approximately 500m to the north of Boundary Road) provides access to the airport from the Ipswich Motorway.

10.2.2 District and local network

From a district and local perspective, the road network has developed around the airport and the natural feature of the Oxley Creek.

The airport has direct access to Barton Street; and Mortimer, Beatty, Balham, Ashover, and Boundary Roads. With the exception of Mortimer Road (which is a 'district road', west of Beatty Road); all of the roads adjacent to the airport are designated as 'suburban roads' in the City Plan. 'Suburban roads' connect arterial roads through and around suburbs, and are a lower order of road to the arterial routes. They typically carry 10,000 to 20,000 vehicles per day. 'District roads' are at the next level in the City Plan hierarchy. They carry through traffic between suburbs and provide access between minor roads, local centres and suburban and arterial roads.

On the east side of the airport, Mortimer Road, Kerry Road and Boundary Road provide additional direct routes east to Beaudesert Road. These roads are also designated as 'suburban roads' in the City Plan.

10.2.3 Freight routes

BCC has in the City Plan identified the following roads as 'primary freight routes':

- Ipswich Motorway,
- Granard Road, and
- Beaudesert Road.

These routes provide direct road connections for non-standard vehicles between regionally significant industrial areas and inter-regional destinations.

With respect to freight movement in the vicinity of the airport, the road hierarchy map in City Plan categorises all of the roads surrounding the airport as serving a primary freight access function, connecting primary freight routes and freight dependant development.

In 2015 Council closed the eastern section of Mortimer Road to use by B-Double trucks. This closure has resulted in the increase of B-Double truck movements along Kerry Road resulting in traffic delays at the intersection of Kerry Road and Beatty Road.

10.2.4 Network traffic volumes and distribution

Table 4 shows two-way traffic volumes on the road network in the vicinity of the airport.

The right-hand column summarises 24 hour traffic volumes from the State Department of Transport and Main Roads (DTMR) and BCC counts (as listed). The DTMR counts represent average weekday traffic for the 2020 year. The BCC counts are taken on a mid week day in May, 2021. Data from 2005 (BCC 24 hr counts) and 2010 and 2015 (DTMR Annual Average Daily Traffic, and also DTMR 12 hour counts taken from 6am to 6pm) are also shown.

Table 4: Two-way traffic volumes on surrounding road network

	Total vehicles (both directions)				
Location	**2005 (BCC 24hr)**	**2010 (DTMR 24hr)**	**2015 (DTMR 24hr)**	**2015 (DTMR 12hr)**	**2020-21 (24hr weekday)**
Beaudesert Road (at Mortimer Road)	29,638	31,014	35,140	29,548	33,095 (DTMR 2020)
Beaudesert Road north of Boundary Road		42,864	42,609		39,759 (DTMR 2020)
Granard Road (at Beaudesert Road)	36,599	42,185	40,439	36,585	No data
Granard Road (at Balham Road)		42,185	40,439	38,665	44,776 (DTMR 2020)
Ipswich Motorway north of Granard Road		40,796	77,692		83,145 (DTMR 2020)
Ipswich Motorway (south of Granard Road)		55,443	79,808		No data
Ipswich Motorway (at Randolph Street)		71,367	79,808		79,134 (DTMR 2020)
Ipswich Motorway (at Boundary Road Rocklea)		69,982	88,474		95,871 (DTMR 2020)
Beatty Road/Mortimer Road intersection total					22,277 (BCC 2021)
Mortimer Road east of Beatty Road	12,500			8,620	No data
Mortimer Road west of Beatty Road*				5,512	4,615 (BCC 2021)
Beatty Road south of Mortimer Road				10,129	15,430 (BCC 2021)
Beatty Road north of Mortimer Road				15,441	15,772 (BCC 2021)
Beatty/Kerry intersection total					No data
Beatty Road north of Kerry Road				16,558	No data
Kerry Road east of Beatty Road	9,700			5,445	No data

	Total vehicles (both directions)				
Location	2005 (BCC 24hr)	2010 (DTMR 24hr)	2015 (DTMR 24hr)	2015 (DTMR 12hr)	2020-21 (24hr weekday)
Beatty Road/ Boundary Road intersection total					31,149 (BCC 2021)
Beatty Road north of Boundary Road				19,709	29,524
Boundary Road at Beatty Road (east of airport)	8,750			9,197	10,260 + southbound vehicles in Beatty Rd turning east
Beatty Road/Barton Street intersection total					25,401 (BCC 2021)
Beatty Road north of Barton Street				11,274	12,846 (BCC 2021)
Barton Street				10,752	12,691 (BCC 2021)
Balham Road west of Barton Street				8,615	No data
Balham Road north of Barton Street				5,617	No data
Ashover/Boundary Road (west of airport)	4,190				No data

NOTE: * In 2015, BCC closed Mortimer Road east of Beatty Road to B-Double trucks

The counts show continued growth in vehicle movements on the network around the airport. From the available data, Beatty Road, north of Boundary Road is carrying approximately 29,500 vehicles mid week, and 25,400 vehicles are passing through the intersection of Beatty Road and Barton Street.

The traffic split at the intersection of Beatty Road and Barton Street shows that approximately half of the vehicles use Barton Street, and half are passing to the north. At Mortimer Road, the intersection carries a total of approximately 22,200 vehicles per day, and of these, 15,700 are in Beatty Road, north of Mortimer Road.

Land used for the creation of the Barton Street link between Beatty Road and Balham Road was gifted by AAC to BCC with Commonwealth approval. The road link has provided significant improvements to east-west connectivity in the vicinity of the northern part of the airport, with 2021 traffic counts showing in excess of 12,600 vehicle movements on a mid week day.

This project was implemented with the involvement of AAC, BCC, DTMR and the Commonwealth (as owner of the land required for the road).

This has been beneficial to traffic movements through the Archerfield area, particularly in providing some relief to the heavily congested Granard Road. It

has also provided additional options for access to Ipswich Motorway. East-west traffic can now access the motorway at either Randolph Street (to the west of the airport) or at Granard Road (to the north-west).

On the east side of the airport, Beatty Road and the intersections between Mortimer Road and Barton Street are carrying high traffic volumes, and these continue to grow due to factors external to the airport including an increase in urban development to the south and east.

Beatty Road at a number of locations along the airport frontage is currently inadequate and raises concerns about safety and efficiency particularly with regard to access to the airport and other properties along Beatty Road, by cars, commercial vehicles, cyclists and pedestrians.

The recent reconfiguration of the north-east side of the Kerry Road/Beatty Road intersection resulted in immediate detrimental impacts on access to the airport at both the north and south legs of Grenier Drive.

Previously, southbound vehicles on Beatty Road turning east into Kerry Road were accommodated in a 110m+ long slip road, that allowed for turning vehicles to queue without holding up the through traffic on Beatty Road. In addition, the left turn lane entered Kerry Road at a point approximately 70m to the east of the intersection with Beatty Road.

The long slip road has been replaced by a shorter turning lane that enters Kerry Road adjacent to Beatty Road. Vehicle congestion at the Beatty Road/Kerry Road intersection increased, as the southbound vehicles on Beatty Road are being obstructed by those queuing to turn east into Kerry Road. The queuing of vehicles on the southern approach in Beatty Road also increased, and there are now reduced opportunities for vehicles to enter or leave the airport. Of particular concern are the movements for vehicles needing to travel:

- from either leg of Grenier Drive, heading north into Beatty Road and then east into Kerry Road (this is also causing additional queuing within Grenier Drive, as vehicles exiting the airport are delayed by the limited capacity in the northbound lane of Beatty Road);
- from the southern leg of Grenier Drive, heading south (right) into Beatty Road;
- from Kerry Road, south into Beatty Road and then west (right) into the southern leg of Grenier Drive; and
- from Beatty Road southbound and then turning right (west) into Grenier Drive.

In addition, some northbound vehicles on Beatty Road are using the shoulder to pass queues of vehicles turning east into Kerry Road. This manoeuvre brings vehicles close to an electricity pole in the verge, just north of Kerry Road, which provides supply to the Beatty precinct. This pole is also potentially in the path of trucks heading west on Kerry Road and turning northbound into Beatty Road.

AAC is committed to working with BCC to resolve these issues, and to see the upgrading of Beatty Road and the key intersections along it, to better cater for through traffic and ensure that safe and efficient access to the airport is provided at all times.

AAC has for many years advocated for the upgrading of Beatty Road, so the road can more adequately cater for through and passing traffic.

It has had discussions with BCC over the years, and understands that Council is now progressing the design of upgraded intersections at Kerry Road and Boundary Road (east of the airport) and is in the process of developing a design for the widening of Beatty Road.

This design will assist with confirming the land requirements (including any proposed widenings onto airport land), and will allow AAC to progress plans to implement a realigned airport access at Kerry Road, as shown in the current and previous master plans and in BCC's plans provided to AAC over 20 years ago.

BCC has confirmed in the latest Local Government Infrastructure Plan its commitment to the upgrading of Beatty Road and associated intersections, between Mortimer Road and Granard Road.

AAC will continue to work with BCC to see the successful implementation of the upgrade to the road corridor and intersections. To assist with this, the master plan shows the locations where airport land could be available for road widening, and the preferred locations for upgraded and new access to the airport.

10.3 PUBLIC TRANSPORT

10.3.1 Bus services

The airport is served by a number of bus routes including:

- the 110 and 115 cityxpress routes which provides weekday services from Inala (110) and Calamvale (115), through Acacia Ridge, Archerfield, Salisbury, Moorooka, Annerley and central Brisbane (connecting to rail and bus interchanges); with bus stops on Beatty Road adjacent to Gods Acre and on the east side near Kerry Road; and on Mortimer Road, to the east of the airport;
- the 110 cityxpress route which runs between Inala and the City via Archerfield on weekends and public holidays; the 122 service that runs from Inala to Garden City Shopping Centre via Beatty Road, Coopers Plains Train station, QEII Hospital (and close to Griffith University), with bus stops in Kerry Road near the intersection of Beatty Road, and on Mortimer Road, to the east of the airport; and
- the 117 service which runs from Acacia Ridge, along Beaudesert Road to the City.

The bus stops are shown in the *Ground transport plan* (Figure 17).

Depending on the needs of workers and visitors to the airport, passenger numbers, and the operational requirements of the bus operators, there may be scope for a bus service to be extended into the airport, or bus stop locations or other aspects of the services modified to better meet the needs of passengers.

AAC will consider any feasible proposals for this, and will take into account bus access requirements in the design of new roads on the airport where these are identified as being appropriate for bus services.

For example, the Boundary and Wirraway Precinct Structure Plans (PSPs) highlight the opportunity to provide public transport access to RPT, in a location immediately to the north of the proposed expanded aviation area on the north side of the main runway complex. This could be used for bus services, charter vehicles, or taxis.

10.3.2 Passenger rail

The Beenleigh Rail Line passes approximately 2km to the north east and east of Archerfield Airport, and the closest stations are at Salisbury and Coopers Plains. This rail provides access to the Gold Coast, Brisbane CBD and to Brisbane Airport (via the regular Airtrain service).

10.4 PEDESTRIAN AND CYCLE NETWORK

The Brisbane City Plan identifies priority cycle routes in the vicinity of the airport. These accord generally with the routes shown also in the *South East Queensland Principal Cycle Network Plan* (DTMR, 2016), which are shown in Figure 17.

In the area to the west and north of the airport, Ipswich Motorway and Granard Road are shown as primary cycle routes. Beaudesert Road is also shown as a primary cycle route. Beatty Road, Barton Street, Balham Road, Ashover Road and Boundary Road (on the west side of the airport) are shown as 'secondary cycle routes'. This classification applies also to both Mortimer Road and Boundary Road, east of Beatty Road.

The east-west routes along Boundary Road and Mortimer Road facilitate cycle movement through the Archerfield and Acacia Ridge neighbourhood, and have the potential to also provide links to Coopers Plains railway station, 2km to the east.

AAC has identified with BCC the opportunity to encourage pedestrian and cycle access to, and within the airport.

AAC has considered options for extending paths within the airport. The main and secondary runway complexes and airside areas constrain north-south or east-west connections through the middle of the airport site, so it is not feasible to develop cross-airport linkages. Any cycling access within the airport would therefore be for trips from the surrounding road and path network, into sections

of the airport. This would be achieved through the existing road and path network within the airport. Where appropriate, opportunities for improving local access can also be considered in new developments on a precinct by precinct basis.

The City Plan shows also a proposed 'secondary cycle route' through Archerfield Speedway and the south-west corner of the airport (adjacent to Oxley Creek).

AAC does not consider that it is practical to provide a link along this part of Oxley Creek through the airport land, due to airport security requirements, topographic features, existing land use (on the airport, and adjacent land), the substantial stormwater management basins and associated drainage works in this part of the airport, environment conservation, and runway protection issues.

There is however the opportunity to incorporate pedestrian and cycle access along the upgraded road network planned around the airport perimeter (including within the BCC planned upgrading of Beatty Road, between Mortimer Road and Granard Road, and potentially also along Barton Street/Balham Road, Ashover Road and Boundary Road west) and within some parts of the airport.

These opportunities have been highlighted in the PSPs in Chapter 12.

AAC will as part of the more detailed planning and design for each precinct, consult with BCC to clarify Council's proposals for developing cycle routes along the roads adjacent to the airport.

The consultation will seek to confirm the intended location and type of any new cycling facilities (such as on road lanes or segregated paths), any anticipated land requirements (eg for road widening to accommodate the facilities), and the likely timing of the land acquisition and works.

Consideration will also be given to including local cycle lanes in appropriate locations in the Barton, Ashover and Boundary precincts, when more detailed planning and design is undertaken for airport developments.

10.5 RAIL FREIGHT SERVICES

The national freight line between Brisbane and Sydney runs to the east of the airport. The main National Freight rail yards are located at Acacia Ridge, approximately 1.6 km to the east of the airport. There is an existing main truck access point to the rail yards, off the eastern end of Kerry Road.

Sections of the 49km Kagaru to Acacia Ridge and Bromelton track need to be modified to provide sufficient height and width to support the safe running of double-stacked freight trains along the existing interstate route. The Kagaru to Acacia Ridge and Bromelton project is currently in the design stage, and anticipated for completion in 2027.

The airport supports some freight activities, but these are at present not a significant component of the airport business. There is potential for this to

grow. The location, flat topography and good road access available to the airport provide opportunities for development of freight storage, handling and distribution facilities.

The airport, and the rail yards are both designated as 'critical assets' in the *Critical infrastructure and movement network overlay map* in the Brisbane City Plan.

10.6 INTERNAL ROAD NETWORK AND SITE ACCESS

The existing road network on the airport, and the main intersections to surrounding roads are shown in Figure 4 *Existing airport layout* and Figure 17 *Ground transport plan*.

These roads include:

- Grenier Drive, which forms a loop road off Beatty Road, just south of the intersection with Kerry Road. It provides access to the airport Administration and Terminal building and the main car parking area, in addition to Gods Acre Cemetery and the range of tenancies in Archerfield Square. It is fully constructed with kerb and channel and an asphalt sealed carriageway;
- Lores Bonney Drive, which extends west from Mortimer Road to the control tower and also provides access to the tenancies in the eastern part of the Beaufighter precinct is constructed and sealed;
- Beaufighter Avenue, which extends south from Boundary Road and then south east into the middle of the Beaufighter precinct, and is fully constructed with kerb and channel and an asphalt sealed carriageway;
- Wirraway Avenue, which provides access to the Wirraway aviation precinct (which includes the corporate hangars and the QGAir facility) and the south side of the Boundary Road Precinct is fully constructed with kerb and channel and an asphalt sealed carriageway. Shortly following privatisation, AAC reconstructed and resurfaced the road and installed stormwater drains and underground piping to cater for surface water runoff. New infrastructure services (including upgraded power and water) have also been provided;
- Transition Drive and Logistics Drive, which currently provide access to the lots in the initial stages of Transition Estate, with provision for both roads to be extended to join to Wirraway Avenue;
- Ashover Circuit, which provides access to industrial and commercial lots in the Ashover Precinct;
- Qantas Avenue, which forms a service road along the west side of Beatty Road, and north of Grenier Drive is fully constructed with kerb and channel and an asphalt sealed carriageway; and
- Ditchmen Avenue which is a service road along the west side of Beatty Road, south of Grenier Drive is fully constructed with kerb and channel and an asphalt sealed carriageway.

Qantas Avenue and Ditchmen Avenue run parallel to the Beatty Road frontage of the airport, adjacent to the more intensively developed areas. These roads function as a service road and provide frontage access to the tenancies along Beatty Road.

They allow for development to face to Beatty Road without constraining property access, congesting the main thoroughfare with parked vehicles or causing traffic safety problems along Beatty Road. They also cater for a large number of indented car parking spaces.

AAC develops and maintains the internal roads. The roads are constructed and sealed and provide all-weather access to the airport facilities, tenancies and parking and loading areas.

10.7 CAR PARKING

The airport currently has eight main on site car parking areas, in addition to parking within, or dedicated to individual tenancies.

These are:

- the long-term carpark, accessed from Qantas Avenue (approximately 56 cars);
- the off street car park adjacent to Hangar 1 in Qantas Avenue (68 spaces);
- 'on street' parking, particularly in Qantas Avenue and Ditchmen Avenue (currently comprising indented bays for about 125 cars, and room for additional parking if necessary);
- between the Airport Administration and Terminal building and God's Acre cemetery (approximately 110 cars and space for taxis with a drop off zone adjacent to the Terminal);
- 12 cars in Grumman Place (adjacent to tenancies 640-643), accessed off Beatty Road;
- in Victa Avenue, adjacent to Buildings 612 and 618 (approximately 24 cars);
- in the parking area between tenancies 621 and 632 (24 spaces accessed from Lores Bonney Drive); and
- in Bonanza Avenue, off Lores Bonney Drive, (approximately 30 cars).

The on and off street car parking areas are shown on the *Ground transport plan.*

10.8 FUTURE REQUIREMENTS AND TIMING

10.8.1 Future requirements for regional road access

The sustainable growth of the airport, and its continued adaptation to changing aviation needs is reliant on there being direct, safe and efficient road access to the site.

AAC will continue to work with BCC, the State and Commonwealth to encourage improvements to the regional road network to enhance the accessibility of the airport.

10.8.2 Future requirements for the district and local road network

Upgrading of Beatty Road

In the late 1990's, BCC identified a key opportunity for Beatty Road to be upgraded to cater for existing and projected network traffic through widening and intersection improvements.

Beatty Road adjacent to Archerfield Airport is an undivided two-way road. The road pavement width varies, and some sections have kerb and channel, while others have gravel shoulders.

As the majority of airport land along Beatty Road was fully developed prior to privatisation, the volume of airport traffic utilising Beatty Road to access this part of the airport has remained relatively unchanged since the 1970/80's. This is not expected to change significantly unless RPT once again begins operating from the current Airport Administration and Terminal building, or from elsewhere in the Beatty Precinct.

The adjacent industrial area on the east side of Beatty Road is now largely developed and Beatty Road is well used by local and district traffic making its way through the Archerfield area. In more recent years, residential and industrial developments to the south and east of the airport have substantially increased traffic along Beatty Road, making it difficult and sometimes hazardous for airport users and visitors to access the site.

The recent remodelling of the eastern side of the intersection of Beatty Road and Kerry Road has also impacted detrimentally on airport access at both the north and south legs of Grenier Drive, the principal public address for the airport and for Archerfield Square.

The Local Government Infrastructure Plan (LGIP) 2016-2026 in the Brisbane City Plan identifies:

- Archerfield Airport and the wider area as being in a Priority Infrastructure Area;
- Beatty Road, Mortimer Road (east of Lombank Street), Boundary Road (east and west of the airport), Ashover Road and Kerry Road as 'existing trunk roads';
- Beatty Road, between Mortimer Road and Granard Road as a 'future road corridor project', planned for upgrading to four lanes, and broken down into the following parts Granard to Barton (LGIP project reference AFD-RC-002), Barton to Boundary (AFD-RC-006), Boundary to Kerry (AFD-RC-005), Kerry to Mortimer (AFD-RC-004); and

- The intersections of Beatty Road with Mortimer Road (ACR-R1-003), Kerry Road (AFD-R1-002), Boundary Road (AFD-R1-001) and Barton Street (AFD-R1-003) as 'future road intersection projects'.

AAC supports the implementation of works to improve the traffic capacity and operation of Beatty Road, and is keen for this to realised in the short term to cater for existing through traffic, and to maintain an acceptable standard of access to the airport.

In addition to road widening, AAC understands that the Beatty Road upgrade works will require improvements to the intersections at Boundary Road, Kerry Road and Mortimer Road. Each of these intersections is designated as a separate project in the LGIP. Such works could have implications for the development and use of airport land.

With this in mind, AAC has engaged with BCC to identify how this can be achieved in a timely and equitable manner.

Issues still to be resolved include:

- ensuring that any changes to Beatty Road and the identified intersections do not impact detrimentally on safe and efficient pedestrian, cycle and vehicle access to the airport from Beatty Road;
- determining the appropriate design of the upgraded road and intersections, to cater for current traffic and the ultimate development envisaged for the airport and surrounding areas;
- ensuring appropriate access to each of the airport precincts that are adjacent to or accessed from Beatty Road, consistent with the structure plans that AAC has prepared for each precinct; and
- equitable and timely funding of land acquisition and road construction.

As a key landholder in the locality, AAC will participate in any properly convened process to progress this much needed upgrading to an equitable solution.

In terms of the potential land requirements, AAC will ensure that any necessary road widening is taken into account in the more detailed planning to be undertaken for the precincts along Beatty Road.

Opportunities for widenings on airport land have been identified in the *Beatty, Mortimer, ,Barton* and *Ashover* PSPs, and are discussed in Chapter 12. The precinct plans show also opportunities for safe and efficient access to the developing areas of the airport, from the surrounding road network.

AAC will continue to work with BCC to progress these road improvements.

Potential future widening of Ashover Road, Balham Road and Barton Street

There is scope to improve the operation of the road network in the vicinity of Archerfield Airport, if required to cater for growth in through traffic, and for airport access.

The Master Plan identifies longer term opportunities for road widenings on Ashover Road, Balham Road and Barton Street.

These possibilities have been highlighted in the Precinct Structure Plans (Chapter 12), and their implementation will be subject to further assessment and negotiations by the relevant authorities and AAC.

In consultation with BCC, AAC facilitated the reservation of land for the new intersection of Boundary Road and Transition Drive, to provide access to Transition Estate. AAC constructed the new intersection and associated turning lanes and street lighting along Boundary Road. AAC will take a similar approach to resolve the implementation of the extension of Ashover Road south into the Boundary and Wirraway precincts, to facilitate access to the planned aviation facilities on the north side of the main runway, and development of the adjacent parts of the Boundary and Ashover precincts.

Future improvements for access to new airport developments

AAC recognises that there may be a need to upgrade access points to roads servicing the airport to cater for increased traffic generated by developments proposed on the airport.

The PSPs in Chapter 12 include concepts for providing new and upgraded access to the airport from the adjacent road network.

The detailed design, timing and funding of these proposed works will be resolved in consultation with BCC and other relevant authorities.

Airport entry from Beatty Road

AAC, in conjunction with BCC is planning to reconfigure the main entry to the Airport Administration and Terminal building, and Archerfield Square, off Beatty Road. The objective is to improve ease of access for vehicles, and simplify traffic flows (and turning movements) in this part of Beatty Road.

In the 1990's the airport confirmed with BCC that the preferred location for the new entry was at the Kerry Road intersection. This is to the north of the existing access at the northern leg of Grenier Drive, and is shown in the *Master Plan Vision*, the *Ground transport plan*, and in the *Beatty Precinct Structure Plan*.

AAC has subsequently assembled airport land opposite Kerry Road (including site 8 and adjacent land) to facilitate the creation of a new western leg to the Kerry Road/Beatty Road intersection.

AAC will continue to work with BCC to progress the intersection design and resolve the timing and funding of the required works.

Access to southern part of Beatty Precinct

The Master Plan seeks to optimise the development of land on the east side of the recently upgraded Eastern Apron, for aviation and related uses, including RPT.

Direct ground access for cars and other vehicles from Beatty Road is proposed.

The indicative location for the access point is shown in the *Beatty PSP*, and in the *Ground transport plan*. The final location, and design of works will be resolved by AAC in consultation with BCC.

Priority actions

For the next eight years, AAC anticipates that the main focus for road access improvements will be on the progressive development of the Transition Estate, on Boundary Road, the initial stages of development of the Barton Precinct, and improvements to access to Archerfield Square and the southern part of the Beatty Precinct.

AAC has constructed the new intersection at Boundary Road and Transition Drive and the initial sections of Transition Drive and associated turning lanes, traffic islands, landscaping, street lighting and signage along Boundary Road; and the first section of Logistics Drive.

These works have included services relocations, installation of underground conduits for power, traffic signals and telecommunications, construction of drainage works, construction of boundary fencing and the entry treatment, improvements to drainage, and relocation of a high pressure gas transmission pipeline along the airport frontage to Boundary Road.

The next priority for works is the construction by AAC of the remainder of Transition Drive which it is intended will eventually link up with Wirraway Avenue. Dependent on tenant requirements and future developments, Logistics Drive may also link up with Wirraway Avenue. Traffic signalisation will be installed at the new Boundary Road and Transition Drive intersection when Transition-Estate is around 65% occupied.

In the next 2 to 8 years AAC anticipates implementing in conjunction with BCC the new airport entry at Kerry Road, the internal road linking to Grenier Drive, and working with BCC to resolve any alterations that are required to the existing intersections of Grenier Drive (north and south legs) and Beatty Road. The timing of these works is subject to the completion of further engineering investigations by AAC and BCC, and preparation of the design of the western leg to the intersection at Kerry Road.

Subject to commitments to new aviation uses in the area between the Eastern Apron and Beatty Road, AAC will also progress with BCC the creation of direct road access from Beatty Road to the southern end of the Beatty Precinct.

Where there is a direct link between an AAC development proposal and the need for adjacent road upgrades, AAC will negotiate an appropriate contribution towards the improvement works. This contribution could include the setting aside of land required for road widening and intersection upgrades, subject to the agreement of the Commonwealth.

10.8.3 Internal roads

The existing internal roads provide appropriate access to existing tenancies, and have the capacity to cater for planned development in the majority of precincts (or can be extended to do this).

AAC will continue to monitor the condition of the internal roads and will implement maintenance works as required to ensure serviceability.

Existing internal roads will be upgraded progressively, when required to carry traffic generated by new developments in the airport precincts.

Priority actions

AAC will continue to identify and implement appropriate internal road improvements as required to provide for access to existing and new developments.

The PSPs in Chapter 12 show conceptually the layout of internal roads anticipated to be required for each precinct. These layouts are subject to more detailed planning and design which will confirm the optimum format to meet the needs of tenancies.

The detailed design of road access requirements for each development precinct will be resolved in consultation with BCC. This will be undertaken as each precinct is nearer to being developed.

At this stage the primary focus is on developing Transition Drive and Logistics Drive to meet the needs of the new Transition Estate and enhance access to the aviation areas along the north side of the main runway and Wirraway Avenue.

Transition Drive, which provides road access to the Transition Estate from Boundary Road is being developed by AAC in stages.

The extension of Transition Drive to Wirraway Avenue is dependent on market demand but is anticipated by 2030. The timing will be subject to progress with development of the Transition Estate, realignment of the secondary runway complex, and/or significant aviation developments being completed in the Wirraway Precinct. The extension of Logistics Drive to Wirraway Avenue is dependent on tenant requirements and future developments. If it is to proceed, it is anticipated to be constructed within the coming 10 years.

Signalisation of the intersection of Transition Drive and Boundary Road will be undertaken once 65% of the lots in the Transition Estate are developed (and will be completed prior to their occupation).

This timing might need to be brought forward if it is found that the Transition Drive intersection is carrying significant traffic movements from other developments proposed in the Boundary, Wirraway or Ashover precincts (as foreshadowed in the PSPs). AAC will monitor traffic volumes and review the timing of signalisation if warranted by measured traffic movements.

With respect to the development planned for the Barton Precinct, the road access improvements, including:

- provision of a new road access from Beatty Road aligned with Boundary Road (east);
- provision of a new southern leg to the Balham Road intersection, to give multi directional access to the northern end of the Barton Precinct;
- provision of left in/left out vehicle access from Barton Street (east of Beatty Road); and
- provision of a left in/left out vehicles access from Beatty Road, approximately mid way between Boundary Road and Barton Street

are anticipated in the next 2-8 years. The timing is subject to completion of the realignment of the secondary runway complex, and market demand for the tenancies in the precinct.

10.8.4 Car parking

Additional on site car parking will be provided to service new developments, as required.

AAC has in recent years included car parking in the lease for the new student accommodation facility in Grenier Drive (Building 9), the Hangar 4 redevelopment, the LifeFlight facilities (Hangar 6 and building 676), Boeing (111) and building 581 in the Transition Estate, which has resulted in a net increase in parking spaces in those parts of the airport.

Priority actions

Future development will include appropriate provision for car parking for staff and visitors. Options, including for shared car parking facilities will be explored in any future developments.

Consideration will be given to additional long-term car parking if RPT services or other aviation activities that generate extended stays are introduced to the airport. The location and scale of any additional parking areas will be resolved when there is a commitment to a RPT operation (or other use generating significant vehicle parking requirements), and the operating requirements are able to be confirmed.

The Boundary and Wirraway PSP identifies opportunities for creation of substantial parking areas for any RPT or other aviation uses that are developed in the Wirraway precinct, including parking adjacent to the future tenancies, and a large area near the southern end of the realigned secondary runway complex. These parking facilities would be accessed either via Transition Drive, or a southward extension from Ashover Road. The location of additional parking areas will depend on the operational requirements of the users, and the timing of the secondary runway realignment project should RPT services operate in this vicinity.

AAC will continue to monitor car parking activity on the airport to optimise the use of available spaces by airport workers and visitors. AAC will consider management measures, including paid and/or time restricted parking, to achieve this.

10.8.5 Improvements to pedestrian and cycle access

AAC welcomes the proposals for improved pedestrian and cycle movement that BCC has identified, and will encourage BCC to develop these as part of an integrated access plan for the neighbourhood.

To supplement these initiatives and encourage safe and efficient access to the airport by visitors and workers, AAC has shown in the Master Plan opportunities to incorporate cycle paths along roads adjacent to the airport, and where possible along key roads within development precincts.

AAC will ensure that where appropriate pedestrian and cycle paths are incorporated in the developments envisaged in the Master Plan. These routes are shown diagrammatically in the PSPs. The details of these will be resolved in consultation with BCC as the plans for each precinct are further developed.

11 Services infrastructure

11.1 STORMWATER DRAINAGE

11.1.1 Catchment context

The airport is located in the middle to lower reaches of the Oxley Creek catchment, just upstream of the confluence of Oxley Creek and Blunder Creek. Oxley Creek discharges ultimately to Brisbane River.

The middle and lower reaches of the Oxley Creek catchment are highly urbanised. Stormwater management on the airport site needs to avoid causing detriment to water quality or flood conditions in Oxley Creek.

The airport location relative to the Brisbane River is shown diagrammatically in Figure 1. The location of Oxley and Blunder Creeks, and the alignments of the main drainage outfalls from the airport to these waterways are shown in Figure 2 *Airport context* and the *Site drainage* drawing (Figure 18).

11.1.2 Site sub catchments

Surface water runoff from the airport falls generally into one of six main sub catchments and these are shown in Figure 18.

The boundaries of the sub catchments are indicative only, as there are few clearly defined watersheds across the site. In some cases, drainage infrastructure has been constructed such that stormwater flows cross between the sub catchments as currently shown.

All surface water from the airport is discharged ultimately to Oxley Creek, and from there flows to Brisbane River and Moreton Bay. The northern and eastern part of the airport drain to Stable Swamp Creek (to the north) which enters Oxley Creek on the north side of the Rocklea industrial area.

1: Southern sub catchment

This sub catchment includes:

- grassed areas;
- sealed Runway 10R/28L and taxiways;
- hangars and businesses;
- open storage; and
- the control tower.

04/22 runways, most of north side of 28R/10L runway, QGAir & fuel farm drain to central catchment/wetland, and then under Boundary Road, through industrial area to the north-west to Oxley Creek

Drain through industrial area to Oxley Creek

Existing pipe under road

Existing pipe under road

28R/10L Runway, most '500' tenancies, and development on Wirraway Avenue and Beaufighter Avenue drain to Oxley Creek via the underground drain along Beaufighter Avenue and a dissipation structure at the point of discharge.

Development along Beatty Road and in the northern part of the site drains north and north-east to Stable Swamp Creek

'300' tenancies

Stormwater basin

Stormwater basins

Transition Logistics Estate '500' tenancies

Northern helipad

Central helipad

Aircraft parking

Aircraft washdown bay

Airport administration and terminal

Turbine parking

Fuel farm

Eastern Apron

Southern Apron

Control tower

Corporate hangars

QGAir

UU sewer pump station

Drain discharges to Oxley Creek via dissipation structure

'600' tenancies

Stormwater detention basin

Archerfield Speedway

Go kart track

Some tenancies in Mortimer Road area drain to the south

God's Acre cemetery

Grenier Drive (main entry)

ARCHERFIELD

1 28L/10R Runway, east section of Beaufighter Avenue and Mortimer Road area drain to detention basin (and then to Oxley Creek)

2

3 BP Truck Stop

4

5

6

Ipswich Motorway

Boundary Road

Balham Road

Barton Street

Ashover Road

Beatty Road

Beaufighter Avenue

Wirraway Avenue

Logistics Drive

Transition Drive

Runway 04L/22R

Runway 04R/22L

Runway 10L/28R

Runway 10R/28L

Charlie

Delta

Foxtrot

Bravo

Echo

Alpha

Goff

Hotel

Juliet

Kilo

Lima

Lombank St

Colebard Street West

Lores Bonney Drive

Mortimer Road

Kerry Road

OXLEY CREEK

Key

- Piped drains
- Open drains
- External drainage network
- 4 Drainage sub catchment boundary
- Direction of surface flows
- Drainage discharge point
- Airport boundary
- Sealed runway/taxiway
- Grass runway

0 500 m

Archerfield

Brisbane's Metropolitan Airport

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 18 **Site drainage**

DRAFT September 2022

PlannedFX Planning Environment Strategy Design

This stormwater drains to the main detention basin (basin 1) that is located between sites 674 and 670, and the neighbouring Archerfield Speedway. The detention basin then discharges to Oxley Creek.

A small part of this sub catchment (fronting Mortimer Road) drains south under Mortimer Road, and through the neighbouring industrial area to Oxley Creek. This drain collects water from the eastern end of Lores Bonney Drive, and from the adjacent tenancies.

2: Beaufighter Avenue and Wirraway Avenue sub catchment

This sub catchment includes:

- the western end of the 10L/28R runway and associated taxiways;
- the majority of the '500' tenancies on Boundary Road;
- the western part of the Transition Estate;
- development along Wirraway Avenue; and
- development along Beaufighter Avenue, generally west of sites 670-674.

Stormwater in this sub catchment is conveyed via a piped drainage system along Beaufighter Avenue to a concrete end wall and dissipation structure prior to entering Oxley Creek.

3: BP Truckstop

Stormwater from the BP Truck Stop site on the corner of Beaufighter Avenue and Boundary Road discharges to a drain at Boundary Road that runs north through the Rocklea industrial area before joining to the main drain to Oxley Creek.

4: Central sub catchment

This sub catchment comprises the grassed areas associated with the 04/22 runway complex, most of the northern half of the 10L/28R runway, the fuel farms, and aircraft parking positions.

The majority of storm water in this sub catchment is collected by an on airport drainage system that falls north-west under the 04/22 runways to detention basin 3, which then runs into basins 4 and 5, and then passes under Boundary Road. From there the drainage runs through the neighbouring industrial area, under the Ipswich Motorway to Oxley Creek.

These basins replace a much smaller facility that was previously to the west of the grass runways. The new basin complex has significantly increased capacity to cater for stormwater runoff. It is designed to manage peak storm flows and will also treat water quality through a combination of bio retention and gross pollutant traps.

5: Eastern and northern sub catchment

The fifth catchment on airport is the eastern and northern area fronting Beatty Road, Barton Street and Balham Road.

The stormwater run-off from this area is carried by the BCC drains that run to the east of, and parallel with Beatty Road, and north from Balham Road.

At three locations along Beatty Road there are drains under the road that take stormwater to the east and then north to Stable Swamp Creek.

This part of the sub catchment is reasonably intensively developed, with extensive impervious areas (building roofs, roads, sealed aircraft parking, and manoeuvring areas). Development planned for the Beatty and Barton precincts will drain into the network to the north of the airport.

The eastern balance of the sub catchment has at present less impervious surfaces. It includes the northern end of the secondary runway complex, and the northern part of the Ashover precinct.

Stormwater from development planned for the Ashover and Barton precincts area could potentially discharge to points on Barton Street and Balham Road (subject to design investigation, and approval by BCC).

6: Beatty Road South

The vacant airport land on the north-east corner of Beatty Road and Mortimer Road drains to the north-east. It discharges to the existing main drainage line that runs parallel to Beatty Road, to Stable Swamp Creek, and then to Oxley Creek.

11.1.3 Future requirements

Substantial drainage works, including new open and piped drains, and basin 1, in the south western part of the airport have been implemented to cater for the scale of development envisaged for the Beaufighter precinct, and the western half of the Boundary Road precinct.

The recent construction of basins 3 and 4 and 5 in the Boundary precinct will cater for existing drainage from the central sub catchment, and additional flows from the initial stages of Transition Estate. The development of basin 7, at the northern end of the Ashover precinct caters for runoff from the northern sub catchment, including in the Ashover and potentially Barton precincts.

Preliminary engineering designs have been prepared for additional basins and associated works in the Boundary precinct. These are shown in the *Master Plan Vision* drawing, and the *Boundary & Wirraway Precinct Structure Plan*, and comprise:

- a new basin (basin 2) south of the BP Truck Stop; and

- an additional basin (basin 6) adjacent to basins 3, 4 and 5, which could be developed once land is freed up by the realignment of the secondary runway complex.

Specific drainage requirements of any new development will be assessed at the development planning stage, prior to approval being given.

Issues to be addressed in detailed design for each precinct, and in approvals for individual developments will include:

- ensuring that there is adequate capacity in drainage facilities to cater for peak flows following storm events, without causing unacceptably high storm flows in downstream areas off airport;
- ensuring that there is appropriate provision for protecting water quality in downstream areas (and the Oxley Creek/Blunder Creek system in particular), from potential sources of pollution including sediment laden runoff, or runoff from areas that could hold contaminated material such as oil or grease;
- providing appropriate spill control procedures to ensure that in the case of a spill incident, discharges off site can be intercepted; and
- identifying where feasible and appropriate, opportunities to incorporate rainwater tanks within developments.

For the 'greenfield' development precincts, AAC will monitor the adequacy of its overall drainage concept for each precinct. It will ensure that main drainage paths through each precinct are protected, and identify in each instance the location and function of any additional stormwater detention, water quality or spill interception facilities.

The specific drainage requirements for the proposed realigned secondary runway complex will be determined during the further, detailed design for that project. The drainage design will be evaluated in consultation with BCC and other stakeholders over the course of the assessment of the Major Development Plan for these works.

During construction of developments, actions will be taken to manage construction activities to avoid discharging sediment or other pollutants to the Oxley Creek. These matters will be addressed in *Environment Management Plans* prepared in accordance with the Airport Environment Strategy.

11.2 SEWER

The airport is serviced with reticulated sewer and is connected to the metropolitan network (including for trade waste).

UU has a sewer pump station in the south-west corner of the airport, adjacent to Oxley Creek. This services the majority of the site.

Transition Estate and the Ashover precinct are serviced by a low pressure reticulated network installed by AAC in 2020/21. They respectively discharge

into the UU sewer pumping station adjacent to Beaufighter Avenue and the UU system in Ashover Road, near the northern leg of Ashover Circuit.

Liquid waste is managed and disposed of in accordance with Trade Waste requirements.

An aircraft wash-down bay is provided in the Beatty precinct, at the corner of taxiways Hotel and Juliet. The bay has been upgraded with a triple interceptor diversion to sewer, and all aircraft washing activity is now conducted at this service point. A second bay that was located south of the Eastern Apron was decommissioned by AAC in 2002, and the site rehabilitated as part of the Project AIM stage 3 works.

Future requirements

Sewerage requirements will be resolved with UU for each development, having regard also to the ultimate scale and distribution of development envisaged in the Master Plan.

Trade waste requirements are addressed in the AES, and in EMPs for new developments that require these services.

11.3 ELECTRICITY

The airport is connected to the Brisbane grid. Electricity is supplied directly to the airport substations, and the airport distributes the electricity to tenants on serviced sites.

Infrastructure includes:

- a 500 kVA transformer substation at the BP Truckstop on Boundary Road;
- a pad mounted transformer for the Transition Estate;
- a pole mounted 350 KVa transformer for the 300 sites;
- a 300 kVA transformer serving developments in Wirraway Avenue;
- a 500 kVA transformer substation at the Veolia Environmental Services site, serving developments in Beaufighter Avenue;
- a 300 kVA supply to the UU sewage pump station near the Oxley Creek;
- a 200 kVA and a 300 kVA transformer in the south east of the site, near Mortimer Road;
- a 300 kVA transformer at the fuel farm;
- a 55kVA backup generator for essential power, including for runway & taxiway lighting and the recently installed ALER, installed just south of site 120; and
- a 200 kVA substation serving the tenants on Beatty Road, opposite Boundary Road (on the east side of the airport).

AAC has also as part of the Transition Estate development relocated overhead powerlines in Boundary Road underground, and installed conduits for reticulation of power to the new development sites.

A solar array has been installed on Building 111, generating renewable energy on airport.

Future requirements

Electricity services to the airport have been extended progressively to cater for developments highlighted in the Master Plan, including with new transformers in Transition Estate, and Ashover precinct.

AAC will consult with Energex on any additional works, should they be required for specific developments.

The Airport Building Controller (ABC) will require certification of compliance by the electrical services engineer or contractor responsible for additions or modifications to the tenant's electricity services (within their individual tenancy) when the ABC is involved in sign off of a development application.

Where feasible, opportunities to provide renewable energy will be incorporated into new developments.

11.4 TELECOMMUNICATION AND BROADBAND SERVICES

Telstra provides telecommunications to the airport, and the reticulation is the responsibility of AAC. There are no known capacity constraints that would impede the progressive implementation of development of the airport.

NBN fibre optic broadband services have been reticulated throughout the airport, and are available to all sites.

Future requirements

Telecommunications and broadband connections will be considered in new developments, utilising the upgraded network.

11.5 GAS

Reticulated gas supply is being extended from Boundary Road, to site 581 in Transition Estate. These works will allow for reticulated supply to be provided to other sites in Transition, as required.

AAC, as part of the Transition Estate works relocated the high pressure gas transmission pipeline along Boundary Road to facilitate the widening of the road. The transmission pipeline is a significant part of the regional gas transmission network.

11.6 WATER SUPPLY

UU supplies water to fixed points on the boundary of the airport. AAC then distributes it via an infrastructure network that it owns and maintains. The internal network includes backflow protection devices, and AAC maintains a servicing and maintenance register.

Future requirements

Water supply requirements for developments will be planned and provided in consultation with UU.

11.7 SUSTAINABLE USE OF NATURAL RESOURCES AND ENERGY

Efficient use of energy and water at Archerfield will become increasingly important in coming years.

Water scarcity is expected to be more prevalent due to climate change and increasing demand for water to serve population and economic growth in South-East Queensland.

Energy usage will also become a significant issue, from the perspectives of cost, and carbon emissions in particular.

Future requirements

AAC is committed to:

- achieving best practice efficiencies in water and energy use in new enterprises;
- promoting the use of renewable energy (including on site generation where feasible); and
- encouraging progressive improvements in existing AAC operations and tenancies.

The unmetered extraction of potable water from fire mains for grass runway watering ceased immediately after privatisation. Subsequently the practice by some tenants of tapping into fire mains to wash aircraft and clean hangar floors has been stopped.

In 2008 AAC commissioned a *Water Efficiency Management Plan* (WEMP) for the airport. The WEMP included a detailed assessment of past and existing water usage, and identified opportunities for more efficient use of water.

AAC has subsequently implemented a range of works to reduce potable water consumption including installation of water efficient fittings in its own facilities; and provision of rainwater tanks in the new developments it has undertaken including the corporate hangar complex, Building 111, the office and warehouse at site 676 on Beaufighter Avenue, and in the redevelopment of Hangar 4, and Hangar 13.

Where feasible, opportunities to provide renewable energy generation will be incorporated into new developments.

AAC will work with existing and new tenants to achieve greater efficiencies in the use of natural resources where practicable.

The provisions for this are addressed in section 16.9 and in the airport Environmental Management Procedures.

12 Airport developments

12.1 GENERAL

This section of the Master Plan describes the planning approach and proposed developments. Building on the vision described in Chapter 2 (and illustrated in Figure 2), it sets out:

- AAC's airport development objectives;
- the land use zones for the airport;
- the eight airport precincts, and the development and use focus for each;
- airside improvement projects for the Runway, Wirraway, Mortimer, and Beatty precincts, including the proposed realignment of the 04/22 runways to provide for improved useability of the runways and the surrounding land, and longer term plans for further enhancement of the 28/10 runways;
- the use and development parameters for each of the other four development precincts; and
- infrastructure provision required to support these initiatives, and proposals for improvements to ground access.

Precinct Structure Plans prepared for each part of the airport illustrate how the Master Plan vision could be achieved, and how the plans can be integrated with other proposals on, and off the airport.

The PSPs provide for the efficient development of aviation facilities and more than 75 hectares of land that is not required in the long term for airside or aviation purposes.

The concepts shown in the PSPs will be further developed as commitments are made to specific proposals and designs are prepared for assessment and approval.

12.2 DEVELOPMENT OBJECTIVES

AAC has set the following overarching objectives for development of the airport:

- to nurture, maintain and develop airport facilities;
- to establish a complementary balance between aviation, aerospace, industrial and commercial developments;
- to enhance, promote and support the aviation image of the airport;

- to achieve best practice with significant developments;
- to be a good neighbour;
- to complement key objectives identified by State and Local Government authorities;
- to work with government and the local community to achieve the ecologically sustainable development of airport land;
- to attract commercially viable developments to aeronautical and non aeronautical sites;
- to facilitate the regeneration of the *South West Industrial Gateway* of Brisbane by providing additional land required for industrial developments, compatible with the continued operation and growth of the airport; and
- to advocate for the enhancement of the surrounding road network.

12.3 LAND USE ZONES

Figure 19—*Airport Land Use Zoning Plan* shows the five land use zones for the airport following the realignment of the secondary runway complex.

The provisions for each of the zones are consistent with the role and function of Archerfield as Brisbane's metropolitan airport, and the relevant provisions of State planning policy and the Brisbane City Plan.

The following additional commentary outlines the specific requirements or proposals for each zone.

12.3.1 SP5 Special purpose (Airport)

This designation applies to the airside and related parts of the airport in the Runway precinct, the Wirraway precinct, to the mixed use Beatty and Mortimer precincts that cater for aviation uses and other activities..

The principal purpose of this zone at Archerfield is to provide facilities for the safe and efficient operation of the airport, and cater for complementary development and uses that contribute to the continued success of Archerfield Airport as a strategic asset for Brisbane, South East Queensland and the national aviation network.

Within this zone the following aviation and related industries and services are expected:

- flying school operations;
- RPT and charter operators;
- high technology aviation industries;
- aircraft servicing, maintenance and development enterprises;
- fuel services;

ROCKLEA

Commercial and transport related support services (office, fuel, food, repairs etc)

Ipswich Motorway

Boundary Road

Larger industrial sites for manufacturing, warehousing, transport etc.

Balham Road

Ashover Road

Barton Street

Beatty Road

Industry, display and sales, commercial, service, office, conference and events

Relocated northern helipad

Realigned secondary runway complex

Proposed Runway 18R/36L

Proposed Runway 18L/36R

ARP

Relocated central helipad

BP Truck Stop

Beaufighter Avenue

Logistics Drive

Transition Drive

Wirraway Avenue

Additional aviation capacity on north side of main runways for corporate and specialised aviation (emergency services, RPT, air taxi, freight, etc)

Runway 10L/28R

Runway 10R/28L

OXLEY CREEK

Archerfield Speedway

Industrial sites, suited to a range of manufacturing, warehousing, transport etc uses

Lores Bonney Drive

Lombank St

Mortimer Road

Kerry Road

Archerfield Square providing a range of retailing, service, accommodation and other support uses for the airport community, visitors and local area.

Potential uses at the interface to neighbouring residential and open space areas include light industry, display, office, aviation student and short term accommodation, convenience retail/food and support services, recreation

- SP5-Special purpose (Airport)
- General industry
- Low impact industry
- Conservation
- CF3-Community facilities (Cemetery)

The configuration of SP5 and Low impact/General Industry zoning is dependent on the realignment of the grass runways. The rezoning will take effect when the new alignment is finalised.

0 500 m

Draft September 2022

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 19 **Airport land use zoning**

Archerfield

Brisbane's Metropolitan Airport

PlannedFX Planning Environment Strategy Design

- hangars;
- campus or motel style accommodation for flying training, RPT and charter services;
- aviation sales and services;
- aircraft manufacturing and assembly;
- convenience retailing and supporting services;
- aircraft parking; and
- supporting car parking and service vehicle areas.

In designated aviation movement areas (focused on the runways, taxiways and other airside facilities) there may be supporting infrastructure such as fuel storage, navigation aids and air traffic control facilities provided.

Archerfield Square, centred on Grenier Drive and the Airport Administration and Terminal building will be developed progressively to provide for a range of retail, car parking, office and service uses that meet the needs of airport visitors and workers, and people and businesses in this part of the South West Industrial Gateway.

Accommodation will be segregated from industrial activities both on and off airport, and will support the flying schools and other training, RPT, charter and emergency services uses.

As has occurred at the airport for many years, land within this zone will be available for interim uses when not required for aviation activities. Uses may include those similar to those in the General Industry and Light Industry zones, and as noted in each PSP.

Assuming similar terms and conditions with any non-aviation related proposals, priority will be given to aviation related tenancies when leases expire within this zone.

12.3.2 General Industry

AAC will facilitate the progressive development of this land for aviation and complementary uses, industrial and related commercial uses, educational, recreational or other activities appropriate to the location and site characteristics, in accordance with AAC's vision for Archerfield. For the majority of the land outside of the SP5- Special purpose (Airport) area, the General Industry zone is appropriate.

This zone will facilitate the development of a range of facilities and industries with particular emphasis placed on developments associated with:

- aviation industry;
- transport industry;
- manufacturing industry;

- industries and other uses (recycling etc) requiring buffer distances to more sensitive uses (such as residential);
- major warehousing and storage;
- accommodation services;
- small industrial units;
- high technology industries including research and development, prototyping, and production;
- commercial and retail uses required to support the airport uses, and land use in the surrounding area;
- aviation and related education and training; and
- recreation, leisure and tourism.

The location of the airport, the mix of land uses on airport, and the opportunities provided by the scale and style of development envisaged in the Master Plan point to an opportunity to also develop some commercial and retailing facilities.

AAC sees these as including:

- convenience retail and food shops for airport visitors and personnel, and people in the local area;
- factory outlets for discontinued stock, product seconds and other items not normally available in retail stores;
- direct sales from businesses locating on airport due to their aeronautical, technical, engineering, research or development focus;
- businesses selling aircraft, heavy machinery, motor vehicles, boats, timber or other building materials;
- conference and events; and
- other like facilities.

It is envisaged that such activities will be provided either in open sites, or in large industrial/warehouse 'shells' and/or smaller premises appropriate to the type of goods sold.

Retail uses will be of a type and scale that complements, rather than transforms, the retail hierarchy of the region. They will serve the needs of this part of the South West Industrial Gateway, the local area, and airport visitors and workers.

A high standard of building quality and presentation will be required by AAC for any developments of this nature.

12.3.3 Low impact industry

The land in the south eastern part of the airport is close to residential and open space areas. This area provides a transition between the airport activities and the more sensitive neighbouring uses. The *Mortimer Precinct Structure Plan*

(Figure 22) suggests a range of potential uses for the sections closest to Mortimer Road, including retail and service businesses, commercial display, light industry, student accommodation, recreation, and offices.

This area would be suitable for aviation student or other short term accommodation, given its location at the interface to residential and open space uses, its location on bus routes, and proximity to the existing and future aviation facilities in the Mortimer and Beatty precincts. This will be resolved when specific plans are prepared for this part of the precinct.

12.3.4 Conservation

The 'Conservation' designation applies to approximately 4.3 ha of land adjacent to the Oxley Creek.

Due to airport security requirements, this area cannot be made accessible to the public. Instead, it will serve as a buffer between the Oxley Creek and the airport developments.

The area contains the UU sewer pumping station, long established stormwater outfall drains and dissipation structures and a major stormwater detention basin constructed by AAC in 2001, and includes a mix of vegetation along the banks of the Oxley Creek.

The balance of the land above the creek banks has for many years been managed by grazing and slashing. More recently, as part of the Oxley Creek Transformation Project, BCC has undertaken weed control and revegetation works on some of the land. AAC will continue to work with BCC to ensure that any land management works undertaken on airport land meet ongoing safety and operational requirements (including for minimising bird and bat strike).

12.3.5 CF3 Community facilities (Cemetery)

The Brisbane City Plan includes a zone specifically for cemeteries. This has been applied to God's Acre, on Beatty Road.

12.3.6 Zone boundaries

Where there is a boundary between the SP5 Special purpose (Airport) and other zones, some flexibility will be exercised where required to cater for appropriate aviation uses and developments.

12.4 AIRPORT PRECINCTS

The Master Plan divides the airport into eight precincts as shown in Figure 20.

These precincts are:

- **Runway** — which is all of the land used (or proposed) for runway and primary taxiway purposes;

- **Beatty** — the land generally fronting Beatty Road, between Boundary Road and the main 10/28 runways, and including aviation land adjacent to the secondary runway complex;
- **Mortimer** — land in the south-east corner of the airport, including the section on the east side of Beatty Road;
- **Beaufighter** — including land along Mortimer Road west to Oxley Creek, and north to the main runway complex;
- **Wirraway** — comprising the existing and future aviation land between Wirraway Avenue and the main and secondary runways;
- **Boundary** — (containing Transition Estate) located on the south side of Boundary Road, and bordered to the west by Beaufighter Avenue, to the south by Wirraway Avenue, and to the east by the secondary runway complex;
- **Ashover** — all of the land between Ashover Road and the realigned secondary grass runway complex, and north of the Wirraway Precinct; and
- **Barton** — the land on the corner of Barton Street and Beatty Road, to the north of the Beatty precinct.

The primary functions and future plans for each of these precincts are discussed below and are illustrated in the PSPs.

12.5 RUNWAY PRECINCT

This precinct includes all of the land required for the existing main 28/10 runways and primary taxiways, and the realigned secondary runway complex.

The Runway Precinct is included in a SP5 Special purpose (Airport) zone.

12.5.1 Concept

Runway 10L/28R and primary taxiways

In 2021-22, the main runway, associated primary taxiways, runway and navigation lighting (with installation of a new PAPI and runway/taxiway lights), and other infrastructure were upgraded as part of Project AIM.

The runway was reconstructed, strengthened and lengthened so it can now accommodate aircraft up to ACN14. Appropriate Runway End Safety Areas (RESAs) were provided and the upgraded infrastructure will cater for the aircraft types provided for in the Master Plan, including RPT.

Taxiway Bravo (B1, B2, B6 and B8) were widened to 15m and strengthened to cater for Code C aircraft. These improvements were foreshadowed in the 2017 Master Plan, and previous plans.

Ipswich Motorway
Boundary Road
Balham Road
Barton Street
Ashover Road
Beatty Road
Boundary Road
ARCHERFIELD
Kerry Road
Mortimer Road
Wirraway Avenue
Beaufighter Avenue
Beaufighter Avenue
Runway 10L/28R
Runway 10R/28L
Proposed Runway 18R/36L
Proposed Runway 18L/36R
Charlie
Delta
Alpha
Bravo
Echo
10L
10R
18R
18L
36L
36R
28L
28R
'300' tenancies
'500' tenancies
'400' tenancies
'600' tenancies
'700' tenancies
'200' tenancies
BP Truck Stop
Relocated northern helipad
Relocated central helipad
Corporate hangars
QGAir
Aircraft parking
Aircraft washdown bay
Airport terminal and administration
Fuel farm
Eastern Apron
Control tower
Lores Bonney Drive
Colebard Street West
Lombank St
God's Acre cemetery
Grenier Drive
UU sewer pump station
Stormwater detention basin
OXLEY CREEK
Archerfield Speedway
Key
Runway
Beatty
Mortimer
Beaufighter
Wirraway
Boundary
Ashover
Barton
N
0
500 m

Archerfield
Brisbane's Metropolitan Airport

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 20 Development precincts

DRAFT September 2022

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Planning Environment Strategy Design

Runway 10R/28L

This runway was reprofiled and resurfaced in March 2005. The surface is of high quality. AAC monitors the surface integrity and condition on an ongoing basis, and has in the past 10 years commissioned the application of a spray treatment to enrich and rejuvenate the runway surface.

Primary Taxiway Bravo

Taxiway Bravo adjacent to the Eastern and Western Aprons, and B1, B2, B6 and B8 were widened and upgraded to cater for Code C aircraft with a wingspan of up to 29m as part of the Project AIM works in 2021-22.

The Master Plan preserves the opportunity for the remainder of Taxiway Bravo (between B2 and B6) to be widened to 15m should that be required in the future.

Provision has also been made for construction of an additional Code A/B taxiway, to the north of and parallel to Taxiway Bravo, if this is required to service the future aviation developments in the Wirraway and Beatty precincts, or to facilitate the reconfiguration of the secondary runway complex.

Secondary grass runways

Runways 04L/22R and 04R/22L are grassed and unrated. The runways are only used in dry weather conditions, as they are not useable following wet weather.

It is AAC's intention to progress the realignment of the secondary runway complex within the next five years.

Doing so will release approximately 500m of additional land frontage to Taxiway Bravo (immediately adjacent to the main runway) for high-end aviation developments and at the same time improve the usability of the runway system for flying training in particular. The realignment will also create the opportunity for development of additional aviation facilities in the Beatty precinct, in the area between taxiways Hotel and Juliet, and aircraft parking in the area to the west of Hotel.

Technical studies undertaken for the 2011-31 Master Plan suggested the construction of new grass runways, aligned to approximately 01/19 (but designated 18/36 to avoid confusion with Brisbane Airport's main runway). One had a planned length of 920m and the other, 1020m.

The preliminary concept for the proposed alignment and supporting taxiways is shown in the *Master Plan vision*, and in the precinct plans. Further information about the design is provided in the technical studies undertaken for AAC in the development of the 2011-31 Master Plan.

Under the current provisions of the *Airports Act*, the realignment of the secondary grass runway complex will be subject to assessment and approval by the Minister via a Major Development Plan (MDP).

The final runway configuration, construction and dimensions will be determined in the detailed design that will be undertaken for the MDP. The proposals for the Wirraway, Beatty and Mortimer precincts, including changes to land zoning are dependent on the successful implementation of the runway realignment project.

Related developments

The *Master Plan vision* (Figure 2) and the relevant precinct plans show also the following proposals for improved aviation facilities, tied to the realignment of the secondary grass runways, growth in aircraft movements and/or the operation of larger aircraft:

- the Wirraway Precinct will more than double in size, providing additional capacity for new facilities with the release of land having a frontage of approximately 500m to the main runway complex, to the east of the existing QGAir hangar. This may be suitable for RPT, corporate, air taxi, aeromedical, emergency services, or specialised freight aircraft benefitting from direct access and short taxiing times to the main runway;
- the northern and central helipads will be relocated to be compatible with the new runways and taxiway network;
- the balance of Taxiway Bravo will be widened to 15 metres (Code C), if required;
- a second parallel taxiway (Code A/B, 7.5/10.5m wide) will be developed to the north of Taxiway Bravo if required;
- opportunities will be provided for the development of additional aircraft parking and hangarage, responsive to demand;
- Taxiway Hotel will be extended north to link to the new 18L threshold;
- capacity for the development of new hangars and other aviation uses will be provided adjacent to the Eastern Apron, in the area between Taxiways Hotel and Juliet, and in the multipurpose industrial units proposed in the Beatty Precinct adjacent to the new northern helipad; and
- consideration will be given to the relocation of the fuel farm, if required.

12.5.2 Visual and non visual navigational aids

Global Positioning Systems (GPS) are becoming a primary navigational aid for light aircraft operations. GPS approach procedures (RNAV-$Z_{(GNSS)}$) for runways 10L and 28R have been designed for airport operations in recognition of this technological evolution.

To assist with visual approaches in poor conditions and to improve the quality of aviation facilities provided at the airport, a Precision Approach Path Indicator (PAPI) has been installed as part of Project AIM for the 10L/28R runway. This aids pilots during instrument flight at medium to short final approach to landing, especially at night.

The PAPI in combination with growth in GPS procedures will not only improve the accessibility of the airport in poor meteorological conditions but also provide to the flying training industry a more marketable product when promoting the airport as the preferred location to learn to fly.

All existing runway and taxiway lighting facilities are subject to cyclical inspection and renewal as required.

Before any new navigation system is introduced at the airport, the Civil Aviation Safety Authority (CASA) must approve the facilities and procedures.

12.6 BEATTY PRECINCT

The Beatty Precinct (Figure 21) extends along the Beatty Road frontage of the airport and is bounded by the main runways to the south, the secondary runway complex to the west, and the Barton Precinct to the north.

The precinct has ground access from the Grenier Drive loop, Qantas Avenue, Ditchmen Avenue, and a series of short streets that extend to airside. It includes a number of car parking areas, including public spaces accessed from Grenier Drive, the long term car park on Qantas Avenue, indented parking along a number of the internal roads, and parking associated with individual tenancies.

The precinct includes the upgraded Eastern Apron (adjacent to the eastern end of the 10L/28R runway and taxiway Bravo), and Taxiway/Apron Hotel, adjacent to the Airport Administration and Terminal building.

The Precinct contains a substantial number of aviation and related activities, and complementary businesses.

Heritage

The *Archerfield Airport Heritage Management Plan* (HMP) has confirmed that the historical heritage values at Archerfield are represented by:

- the continued operation of Archerfield as an airport,
- God's Acre Cemetery associated with the Pastoral phase of the airport (historical phase 1-1850-1928), and
- buildings in the Beatty Precinct that are associated with historical phase 2 (Development of air transport, 1929-1938), and historical phase 3 (World War Two, 1939-1946).

The buildings and features of historical significance are identified in the *Beatty Precinct Structure Plan* (Figure 20), the *Heritage Management Plan* (Figure 28) and the *Heritage curtilage* plan (Figure 29), and more details on the heritage aspects is provided in section 16.2 of the AES.

Those of high significance are:

- Hangars 1-3;
- Hangars 5 and 6;

- the original (eastern) portion of Hangar 7;
- the Shell building (16);
- the Powerhouse (26);
- the Airport Administration and Terminal building (28); and
- God's Acre (40).

Buildings 17, 18 and 19 (toilet blocks) have been assessed as having moderate significance.

Building 27, used as the Air Archer café, and Building 107 have been assessed as having low significance.

These buildings (apart from 107, which is a stand alone structure on Ditchmen Avenue) are within the 'Archerfield Heritage Curtilage'.

Auxiliary elements within the Beatty Precinct, including Qantas Avenue, Grenier Drive, Pitt Street, and the forecourts / green spaces adjoining Building 28 and God's Acre Cemetery have low significance. Over the years the location of these elements, the road and path alignments, provision of parking spaces and driveways, and materials and finishes have been altered and replaced and have poor integrity.

In addition, the HMP identified within the precinct an area of low (built) archaeological potential. This is also shown in the PSP and the *Heritage curtilage* plans. Within this part of the precinct, any works involving substantial ground disturbance should follow the Archaeological Discovery Protocol should any archaeological items be found during excavation or construction. The protocol is described in the AES and the HMP.

Renewal projects

Over the past 20+ years, AAC has implemented progressively key works, including refurbishing a number of buildings, redeveloping key sites, and providing landscaping.

The projects have included:

- purchase, refurbishment and adaptive reuse of the historic Airport Administration and Terminal Building, to once again serve as the airport administration headquarters and terminal, and provide offices and public spaces;
- facilitating the upgrading of Hangar 3 for aviation use;
- redevelopment of Hangar 4 to provide a modern headquarters for Flight One, a long standing aviation operator; and aviation training, engineering and maintenance provider at Archerfield;
- refurbishment of the historic Hangar 5 to accommodate Archerfield Jet Base and FBO;

- refurbishment of the historic Hangar 6 to house LifeFlight helicopter maintenance;
- redevelopment of building 9 (adjacent to the Airport Administration and Terminal Building) to create the airport's first ever on site student accommodation and training complex;
- restoration of the historic Shell building; and
- building 111 was also developed, providing high quality office and warehouse accommodation.

AAC has also undertaken tree planting and landscaping works along Qantas Avenue, Ditchmen Avenue and Grenier Drive and installed new illuminated signage at the main entrance to the airport.

Zoning

This precinct is currently zoned General Industry but will be rezoned to SP5 Special purpose (Airport) following the realignment of the secondary grass runway complex.

12.6.1 Concept

This land has exposure to both aeronautical and non-aeronautical areas, and offers a wide range of possibilities for growth of existing aviation uses and other tenancies, and new development focused on enhancing the airport.

It is a primary public address for the airport, and contains a number of buildings of heritage value, together with Gods Acre which provides a link to the historical pastoral phase of the site.

The 'gateway' location of the Precinct (interfacing the land and air aspects of the site, and being adjacent to Beatty Road) means that the Precinct will continue to have a diverse mix of land use, and a strong relationship to land use in the South West Industrial Gateway.

The appearance of buildings and landscaping in the precinct also warrant upgrading and improvement, commensurate with the important role this precinct plays in setting the standard for the image and atmosphere of the airport.

The prime aviation sites, including the main existing hangars 1-6, and other tenancies in proximity to Taxiway Hotel and the Eastern Apron, will in the coming years be joined by additional aviation and complementary developments, focussed in three main areas of the Beatty precinct:

- between the Eastern Apron, and Beatty Road (incorporating Ditchmen Avenue), and shown as 'future aviation capacity' in the PSP;
- in the area between Juliet and Hotel (following realignment of the secondary runway complex); and

- north of Boundary Road, adjacent to the secondary runway complex and relocated northern helipad.

The aviation potential of each of these areas will be optimised, taking into account existing tenancies, the range of potential users (now, and emerging through changes in aviation and the development and implementation of new technologies), the logical staging and scale of developments, and demonstrated need.

Eastern Apron

The future aviation area between the Eastern Apron and Beatty Road currently comprises a mix of leases and vacant sites. It has the potential to be redeveloped in stages, and include additional on airport car parking, and a new ground access from Beatty Road (just north of the main runway complex).

Hotel and Juliet

The area between Hotel and Juliet contains aircraft parking, and aeroports. The further development of this area is subject to the realignment of the secondary runway complex which will in turn allow for creation of new parking areas in the area currently occupied by the runways, and the resolution of existing and future tenancies.

North of Boundary Road

The proposed mixed industrial and aviation area north of Boundary Road (in the Beatty precinct) is also dependant on the realignment of the runways. These tenancies will be adjacent to the reconfigured secondary grass runway complex and relocated northern helipad, and will be suited to uses requiring both airside and landside access. The location, size and accessibility of these tenancies to ground transport and airside infrastructure may be suited to Advanced Air Mobility and emerging technologies. The row of multi purpose aviation and industrial buildings will also provide an appropriate interface between the aviation activities, and the developments planned for the adjacent section of the Barton Precinct.

Archerfield Square

Archerfield Square, which extends from Beatty Road between God's Acre Cemetery and the Airport Administration and Terminal building, and incorporates sites on both sides of Grenier Drive, will be the focus for airport and business administration, retail and service uses, accommodation, and other uses that support the operation of the airport and/or meet the needs of the surrounding area.

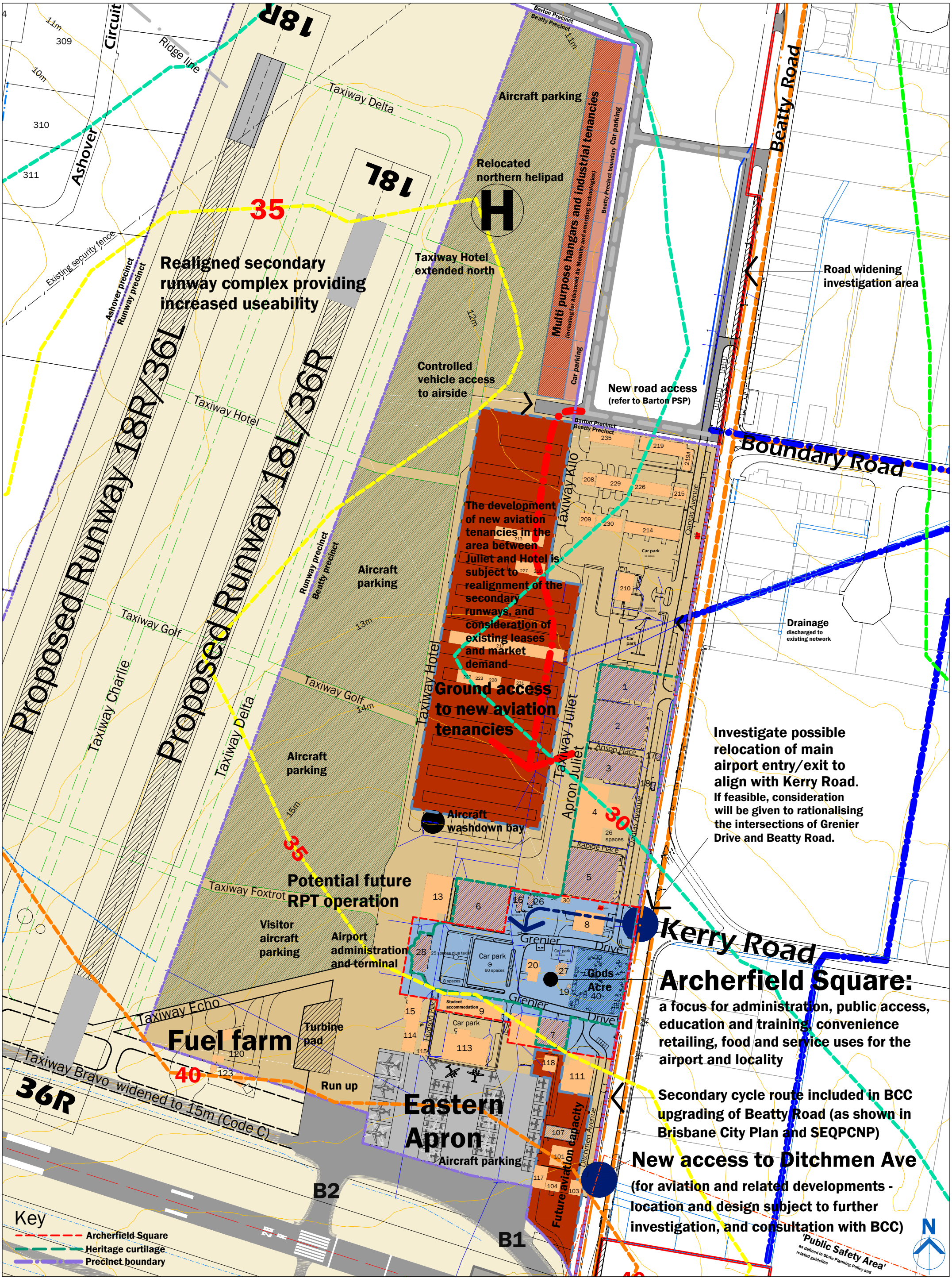

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Figure 21 Beatty Precinct Structure Plan

Archerfield
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A number of existing buildings and other features in the precinct will be redeveloped or removed to cater for the evolving needs of aviation operations at Archerfield, including accommodating larger aircraft, optimising the use of the upgraded main runway and taxiways, Eastern apron and related areas, or to provide more modern facilities for existing and future tenants.

To this end, AAC will continue over the 20 year horizon of the Master Plan to facilitate the progressive upgrading or redevelopment of existing buildings, and creation of new, high standard facilities for aviation and complementary purposes. These projects will in some cases involve consolidation of vacant or underutilised sites, improvements to ground access, and enhancements to services infrastructure. The Master Plan foreshadows the creation of a new road access to Archerfield Square, via the addition of a western leg to the Kerry Road intersection.

This concept was identified in discussions between AAC and BCC in the late 1990s. AAC has included it in subsequent master plans, and notes that the Kerry Road intersection upgrade (and the related upgrading of Beatty Road between Mortimer Road and Granard Road to a four lane cross section) is identified as a priority in Council's *Local Government Infrastructure Plan*.

AAC has assembled the land that is required to create the internal road connection to the northern leg of Grenier Drive, and will work with BCC to resolve the design of the new western leg to the intersection, arrangements for securing the necessary land and the timing and funding of the roadworks. This initiative has the potential to address issues with airport access at Grenier Drive, arising from increasing traffic volumes on Beatty Road and Kerry Road, and the recent changes made to the Beatty Road/Kerry Road intersection impacted further by the removal of B-double traffic from Mortimer Road.

AAC has also identified in the relevant PSPs and the *Ground transport plan* locations where airport land could be utilised for widening of Beatty Road, and will work with Council to progress the upgrading for the benefit of all users of the surrounding road network.

Heritage management

The heritage values in the precinct as shown in Figure 28 *Heritage management plan* and Figure 29 *Heritage curtilage* will be managed in accordance with the Airport Environment Strategy, and will be guided by the findings and recommendations of the *Archerfield Airport Heritage Management Plan 2021* (HMP) or any subsequently prepared HMP.

AAC will respect and where appropriate conserve historic elements in the overall redevelopment of the airport. Particular attention will be paid to the Airport Administration and Terminal building, God's Acre Cemetery; and the heritage features at each of the other sites identified in Figures 28 and 29 as having heritage significance.

AAC is sensitive to the need to retain buildings and other features of historical significance, and will prioritise this where they can either continue to be used in their current form, or adapted to new uses.

AAC will continue to work with Friends of God's Acre and BCC (lessee of the Cemetery) and the broader community in improving the cemetery and promoting it to the local community and visitors.

AAC recognises that a number of older buildings on the airport are no longer suited to modern aircraft or aviation requirements and are inefficient in terms of their location, layout, or size for modern aviation related purposes.

In order to ensure that Archerfield continues to attract aviation tenants of a high calibre and the airfield continues to regenerate, development options will be canvassed when approached by prospective aviation tenants.

Each development will be assessed on an individual basis, taking into account the tenant's requirements, the AES, the relevant, findings and recommendations in the Heritage Management Plan, the historic value of the building; and its potential for adaptive reuse, refurbishment, removal or relocation. Buildings containing asbestos will be handled in accordance with the AES.

Existing uses

Existing uses will continue, in accordance with lease conditions. In cases where leases expire, or new proposals are put forward, priority will be given to aviation-related tenancies, and uses that are consistent with the Master Plan vision and the PSPs, including services required by airport businesses, users and visitors. Examples of the latter include convenience retailing and service businesses (eg food, etc) that are inadequately catered for on the airport or in the surrounding area.

Leases in the SP5 area will continue to be negotiated on commercial terms. Land will be available for interim uses when not required for aviation activities. Uses may include those similar to those in the General Industry and Low Impact Industry zones.

12.7 MORTIMER PRECINCT

The precinct occupies the south-east section of the airport, between Mortimer Road and the main runway complex. The airport property includes approximately 5.8ha of land on the east side of Beatty Road, opposite the eastern end of the main 10L/28R runway, and extending south to the corner of Beatty Road and Mortimer Road.

The precinct contains a mix of aviation and non aviation uses, off street car parking areas, and the AAC works depot.

The northern part is developed with a series of hangars and other tenancies along Taxiway Sierra. These have direct frontage to airside, the grassed Southern Apron, and access to the main runway complex.

The southern part of the precinct, along Mortimer Road and Lores Bonney Drive is used for a more diverse range of purposes. Most tenancies have the potential to access airside via stub taxiways, however the tenancies include industrial, commercial, service and retail activities that serve the wider area in addition to airport needs.

The majority of the precinct is zoned SP5 Special purpose (Airport).

The sections adjacent to the east and west sides of Beatty Road are included in the Low Impact Industry zone.

12.7.1 Concept

Land use in the precinct falls into three main parts, as shown in the *Mortimer PSP* (Figure 22).

Land on the east side of Beatty Road, adjacent to the end of the main 10L/28R runway is intended to be used for light industry, storage and parking. This land has some limitations to development and use, including the requirements of the Public Safety Area at the eastern end of the 10L/28R runway, noise impacts from aircraft, and height restrictions required to maintain acceptable obstacle clearance to the airspace.

To the south, the land on the north east and north west corners of Beatty Road and Mortimer Road is at the interface between the established aviation and industrial uses in this part of the airport, and the neighbouring residential area to the south and the substantial Mortimer Park open space area to the east.

This land has the potential to be developed for a range of purposes that are compatible with the residential area to the south, and the open space to the east. Options include accommodation for aviation students (or other short term visitors to the airport), light industry/display uses, recreational uses, offices, or convenience retail/food and other support uses.

Depending on the proposed uses of the land, it might be necessary to incorporate acoustic treatment into new buildings. This will be determined at the design stage.

As discussed in Chapter 10, BCC is in the process of developing plans to widen Beatty Road to provide a four lane cross section, and to also upgrade the main intersections at Mortimer Road, Kerry Road, Boundary Road and Barton Street. These works are included in the LGIP, and will cater for growth in traffic volumes on the network.

Any road widening in proximity to the main runways would need to be located on the east side of Beatty Road. The PSP shows a potential road widening area 5m wide along the Beatty Road frontage. AAC will work with BCC to ensure that operational requirements are addressed in any road corridor upgrading, and the terms of any transfer of land to enable Council to undertake the road works are acceptable.

Fuel farm

Turbine pad

Run up

Beatty Precinct

Taxiway Bravo widened to 15m (Code C)

36L

36R

28R

B3

B2

B1

A4

A3

A2

A1

28L

Eastern Apron

Aircraft parking

New access to Ditchmen Ave

(location and design subject to further investigation, and consultation with BCC)

'Public Safety Area' as defined in State Planning Policy and related guideline

Drainage

discharged to existing network

40

Road widening investigation area

(up to 25m overall road reserve width shown)

35

Light industry, storage, parking

(possibly in conjunction with uses in the southern section)

Runway Precinct

Mortimer Precinct

Beaufighter Precinct

Southern Apron

General aviation and support uses

Taxiway Sierra

Lores Bonney Drive

Mortimer Road

Beatty Road

Victa Ave

Grumman Pl

Bonanza Ave

Lombank St

Colebard

Ditchmen Avenue

Car park

AAC works depot rd

Uses in southern section (both sides of Beatty Road) are at the interface to neighbouring residential and open space areas.

Potential for light industry, display, office, aviation student and short term accommodation, convenience retail/food and support services, and recreation

New development adjacent to Lores Bonney Drive/Mortimer Road oriented to address Mortimer Road (light industry, display, office, service uses)

Where feasible, any land requirements for future upgrading of Mortimer Road/Beatty Road intersection by BCC to be taken into account in new development

20m

25m

30

N

0 100 200 300m

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Figure 22 **Mortimer Precinct Structure Plan**

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Brisbane's Metropolitan Airport

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In addition, where feasible, any land requirements for the future upgrading of the Mortimer Road/Beatty Road intersection by BCC will be taken into account in the siting and design of new development on these corner sites.

The balance of the precinct is anticipated to cater for a mix of aviation, light industrial, display/sales, office and service uses.

The proximity of the northern part of the precinct to the main runways (and taxiway Sierra) will suit a range of aviation uses.

The southern part of the precinct will continue to be used for a variety of industrial, commercial, service and retail activities. New development adjacent to Lores Bonney Drive will, wherever feasible be oriented to address Mortimer Road.

12.8 BEAUFIGHTER PRECINCT

The Beaufighter precinct is zoned in two parts.

The majority of the precinct is sited between the main runway complex and the adjacent industrial area (including Archerfield Speedway) to the south of the airport (Figures 2 and 23).

The south western section of land adjacent to Oxley Creek has been identified in the AES and the Master Plan as a buffer zone to Oxley Creek. It has an area of approximately 4.3 ha and is included in the Conservation zone.

The balance of the land, which is in the process of being developed for industrial purposes, is included in a General Industry zone.

The eastern part of the precinct includes the Airport Control Tower (at the western end of Lores Bonney Drive), and a number of transport and storage uses.

The western section (accessed from Beaufighter Avenue) comprises a series of nine, 2 hectare development sites, that are currently home to LifeFlight (with adjacent helicopter parking), recycling operations, concrete batching, transport and storage uses. Beaufighter Avenue has been extended south and east with all underground services provided.

12.8.1 Concept

The initial stages of the Beaufighter estate have been completed, and cater for industrial, warehouse, aviation, transport and similar uses.

Provision has been made for further development to the east of the existing lots in the Beaufighter estate.

Road vehicle access is provided from both the east and the north, as shown in Figure 23.

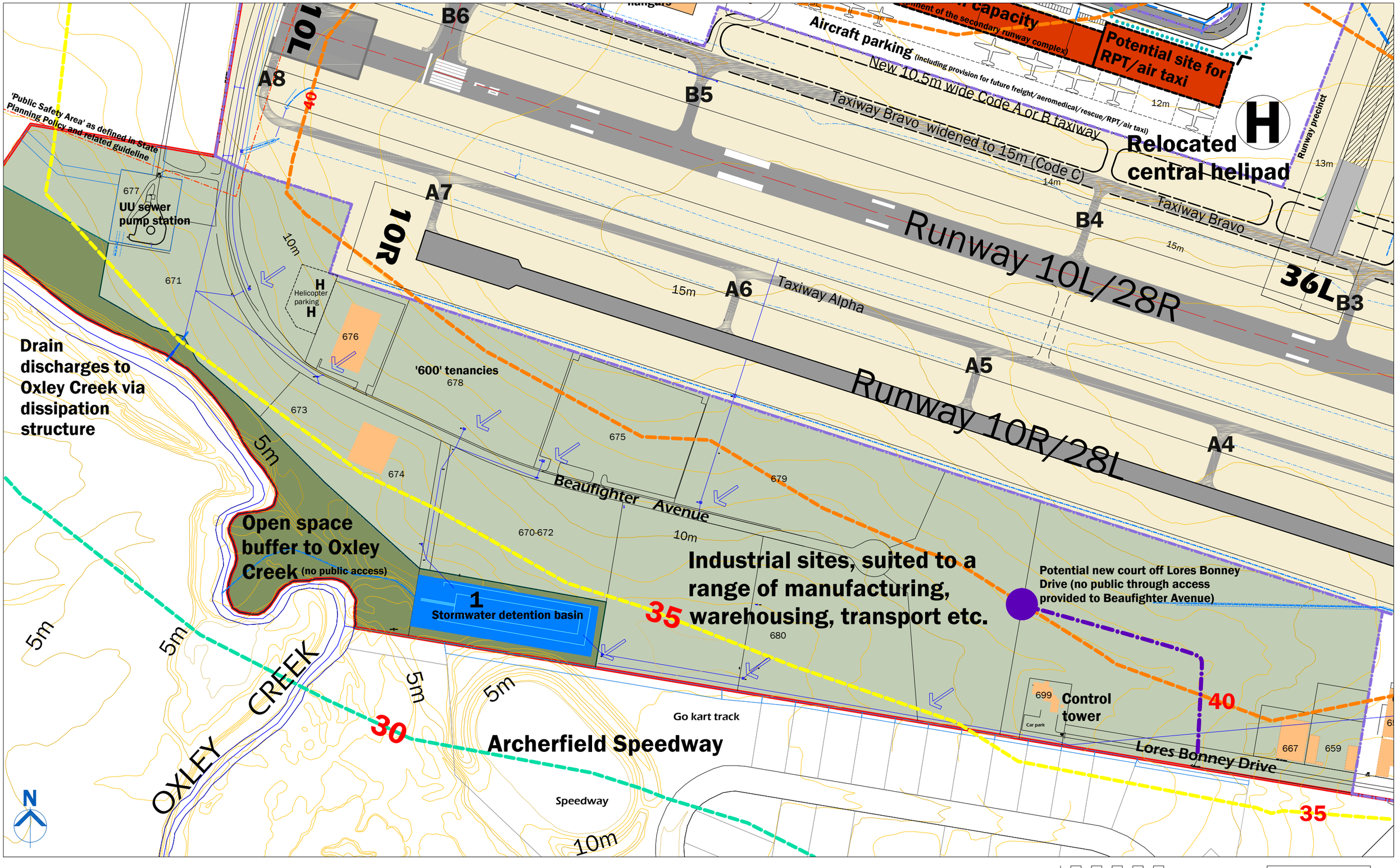

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Figure 23 **Beaufighter Precinct Structure Plan**

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Access from the east will be via Lores Bonney Drive (which extends currently from the western end of Mortimer Road). Access from the north is via Beaufighter Avenue, which can be further extended as required to service new developments.

The road access to the additional development proposed in the PSP will be implemented once the requirements of future tenants have been determined.

This area of the airport requires special attention to ensure that developments, and activities carried out on the land are managed to minimise impacts on the habitat value of nearby Oxley Creek.

Stormwater management measures have been put in place to protect the creek from undue increases in peak stormwater flows following storm events.

The works now completed include upgraded drains (piped and open swales) throughout the airport sub catchments, and construction of a substantial detention basin adjacent to sites 670-672.

An open space buffer, incorporating land along the Oxley Creek and the main stormwater detention facility, has been established along the southern edge of the precinct.

12.9 WIRRAWAY PRECINCT

This precinct is included in the SP5 Special purpose (Airport) zone. It is immediately adjacent to the main runway (Figure 24) and ground access is provided from Beaufighter Avenue and Wirraway Avenue.

Aviation developments house Pulse Aero aircraft maintenance, QGAir, PolAir, HeliEdge Aviation, and Elite Aviation. The precinct includes the corporate hangar complex (Building 411) developed by AAC.

The upgrading of Wirraway Avenue has also provided road access to this part of the airport, and improvements to drainage, the upgrading of the 10L/28R runway, Taxiway Bravo and the Western Apron have enhanced the potential for further development of this land.

12.9.1 Concept

This area is designated for further development for specialised aviation purposes that are compatible with the established uses, and optimise the use of the recently modernised main runway complex and associated aviation infrastructure.

Opportunities for additional aviation developments currently exist to the west of QGAir. This could include facilities for aeromedical, government, corporate, freight, maintenance, fixed base and charter operations. Associated offices, training centres and car parking could be located on the southern side of Wirraway Avenue or on the northern side within Transition Estate if required.

The Wirraway Precinct will more than double in size following the realignment of the secondary grass runway complex to 36/18. This will provide substantial additional opportunities for aviation operators to establish facilities immediately adjacent to the main runway, to the east of the QGAir hangar. This area would be suited to aeromedical, government, RPT, air taxi, corporate, charter or specialised freight aviation hubs/terminals.

Wirraway Avenue will be extended eastward along the northern side of the precinct, and will link ultimately to Boundary Road and Ashover Road via Transition Drive or the extension of Ashover Road. The road network will provide direct access to the main roads around the airport, and to the regional network including Ipswich Motorway.

An area has also been designated for long term car parking for visitors and workers, in addition to parking that is shown adjacent to the planned developments. This parking area could be expanded if required.

The relocated central helipad is shown adjacent to the potential RPT and air taxi site. There is scope to provide helicopter parking and supporting services in conjunction with this new facility.

The realignment of the secondary grass runway complex provides a number of opportunities to cater for aviation growth, and new and emerging technologies in this precinct. These are discussed in more detail in Sections 3, 4 and 5.

12.10 BOUNDARY PRECINCT

At present this precinct includes the BP Truck Stop on the corner of Beaufighter Avenue and Boundary Road, the initial stages of Transition Estate, and a number of short-term tenancies developed along Boundary Road. The precinct also contains the stormwater management basins that have been created south of Boundary Road and east of Transition Drive.

The works that have been completed include;

- a new intersection and associated traffic islands along Boundary Road to provide access to Transition Estate and the Opal Group site on the north side of Boundary Road;
- preparatory works for the installation of traffic signals around the time when Transition is at 65% occupancy;
- dedicated through lanes and turning lanes for ease of traffic flow along Boundary Road and into Transition (and the Opal Group site opposite the airport);
- the installation of new street lighting on both sides of Boundary Road and approximately 200m either side of the new intersection;
- the extension of culverts and the boring of piers to bridge over the top of the drainage easement on the northern side of Boundary Road in order to widen Opal's driveway for ease of B-Double access into and out of

their site (this wasn't previously possible with their pre-existing, narrow width driveway);

- the relocation of overhead powerlines into underground conduits with provision for future expansion and communications including the NBN;
- the relocation of the high pressure gas transmission pipeline along the site frontage, to allow for the road widening works to occur;
- the installation of kerb and channel and stormwater swales to cater for rainwater runoff along Boundary Road which previously ran onto adjacent grassed areas; and
- landscaping and the installation of palisade fencing along the northern boundary of Transition.

AAC has also undertaken extensive civil works on airport land in preparation for new tenancies within Transition. These works include:

- decommissioning of the narrow drainage system that ran north-west from the secondary grass runway complex to Boundary Road;
- replacement of this system with a much larger detention basin, Basin 3 (volume approximately 18,000m^3) to control peak storm related flows from the secondary grass runway complex and the ultimate development in the Boundary Precinct, and to also assist with maintaining acceptable water quality in the flows discharged into the local drainage system;
- construction of Basin 4 (the interface between Boundary Road, Basins 3 and 5 and the Gross Pollutant Trap);
- construction of Basin 5 (sand filtration for improved water quality);
- installation of Gross Pollutant Traps to further improve the quality of water from Boundary Road and Transition Drive before it enters the local drainage system;
- reshaping of ground levels in Transition to bring the lots above Q100 flood level, and prepare for site development;
- construction of entrance walls and illuminated pylon signage at the intersection of Boundary Road and the future alignment of Transition Drive;
- installation of a new 300mm water main along Wirraway Avenue to service the new tenancies in Transition and the Fire Pump House which services the existing Corporate Hangars;
- installation of infrastructure for fire protection, including on site storage tanks and pumps, to service the new lots in Transition and adjacent areas;
- upgrading of power to Wirraway Avenue; and
- reconstruction and resurfacing of Wirraway Avenue.

The precinct is included in the General Industry Area.

12.10.1 Concept

Land in this precinct will be developed with quality tenancies providing a range of warehouse/logistics, commercial and industrial uses including support services to the transport, logistics and aviation industries.

The PSPs for the Boundary and Wirraway precincts (Figure 24) shows that these precincts are at present accessed via Boundary Road, the initial sections of Transition Drive and Logistics Drive, Beaufighter Avenue and Wirraway Avenue. This access will be augmented by the possible extension of Transition Drive and Logistics Drive, southwards to join to Wirraway Avenue, and the possible creation of a southward extension of Ashover Road, to the aviation area in the Wirraway precinct.

When the estate has reached 65% occupancy, the intersection of Transition Drive and Boundary Road will be fully signalised.

The realignment of the secondary runway complex will allow the release for development of the south-eastern part of the precinct. Access to that land (and the expanded aviation area at the eastern end of the Wirraway Precinct) will be provided by a new road extending south from Ashover Road, and an easterly extension to Wirraway Avenue.

The future intersection at Ashover Road is intended to cater for all required turning movements. The final layout and design will be determined in consultation with BCC and may involve the use of slip lanes or a roundabout to give the maximum flexibility for access, without unduly impacting on the traffic on the external roads.

Larger industrial lots are proposed within the Boundary Precinct, utilising road frontage along Boundary Road, Beaufighter Avenue, Transition Drive, Logistics Drive, Wirraway Avenue, and the extension to Ashover Road. There is the potential for these lots to be either amalgamated (for larger scale uses) or further subdivided according to market needs.

AAC is in the process of transferring at no cost to BCC (with the Commonwealth's consent) land for the recently constructed turning lanes and the new intersection accessing Transition Drive from Boundary Road. Together with upgraded access to the Opal Group site opposite the airport, these works were both funded by AAC.

In the event that additional direct site access is required to the precinct, AAC will resolve the details of this with BCC. If BCC determines that Boundary Road requires widening to cater for network traffic, the terms of any future land transfer will be determined with BCC.

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Figure 24 Boundary and Wirraway PSPs

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Preliminary analysis of development potential indicates that by 2028 the Precinct could contain an additional 30,000m^2 of warehouse floor space (and related office areas), with a further 30-35,000m^2 of floor space developed by 2035. AAC will develop the site access and other infrastructure in stages, matched to the land development program. As detailed above, the initial stage of the Transition Estate subdivision is complete and agreement has been reached with BCC with respect to the 'triggers' for the signalisation of the intersection of Transition Drive and Boundary Road.

As the Transition Estate develops, Transition Drive and Logistics Drive will be extended to link to Wirraway Avenue from Boundary Road.

As part of the Transition Estate works, AAC has constructed basins 3, 4 and 5 in the area east of Transition Drive and south of Boundary Road to capture and manage stormwater from the Precinct and the adjacent area of the airport, prior to discharge to the drainage system through the Rocklea industrial area.

The PSP includes provision for further drainage works within Transition Estate, including:

- an additional basin (number 6) south of basins 3-5 that will provide additional capacity for stormwater management prior to discharge from the airport site, and can be developed following realignment of the secondary runway complex, and
- a potential future stormwater basin 2 south of BP Truck Stop, which will treat stormwater prior to discharge to the drains in Beaufighter Avenue and then to Oxley Creek.

These works will be implemented progressively, as development proceeds.

The need to set aside land for the future widening of the Ashover Road reservation has also been identified for investigation. AAC will discuss this further with BCC and other relevant parties, as the plans for the Ashover precinct evolve.

12.11 ASHOVER PRECINCT

This precinct has similar characteristics to the Boundary Precinct. It is in the middle of the long established Rocklea industrial area and enjoys excellent road access from Balham Road/Barton Street and Ashover Road, and access to the Ipswich Motorway via Randolph Street.

A series of '300' sites has been developed by AAC to cater for a range of industrial, transport, logistics, service and storage uses. AAC has constructed Ashover Circuit, to provide access to these sites.

The precinct falls into two main drainage sub catchments. Stormwater from the northern sub catchment drains to Basin No. 7, constructed by AAC adjacent to Balham Road. The basin manages peak flows prior to discharge to the external network to the north of Balham Road.

The balance of the precinct drains southward via a formed drain to the existing basins 3, 4 and 5.

Sewer is provided to the '300' tenancies in the Precinct. Any changes in sewer requirements will be investigated in consultation with UU.

The Ashover Precinct is included in the General Industry zone.

12.11.1 Concept

The *Ashover Precinct Structure Plan* (Figure 25) shows that the land is likely to be developed in a series of lots along Balham Road, Ashover Road, Ashover Circuit and the proposed southerly extension of Ashover Road to Wirraway Avenue. At the northern end, closer to Balham Road, land uses could include transport related services such as fuel, servicing, repairs and parts; and offices.

The PSP recognises that there may be a need for road widening along Ashover Road and Balham Road, and this should be investigated in conjunction with BCC.

12.12 BARTON PRECINCT

The land relates strongly to the surrounding industrial area along Beatty Road and Barton Street, off airport. It provides an interface between surrounding land use and the northern end of the Beatty Precinct, the reconfigured secondary grass runway complex, relocated northern helipad, and new aircraft parking areas.

This precinct is included in the General Industry zone.

12.12.1 Concept

The concept for this precinct (Figure 26) anticipates the northern part (at the corner of Barton Street and Beatty Road) being developed for display and sales, conferencing and events; the central section (adjacent to Beatty Road) being smaller industrial, commercial, retail and service tenancies; and for the southern part (to Boundary Road) catering for multi purpose industrial, office and service uses.

The development will be accessed via a proposed westward extension to Boundary Road at the south end of the precinct, a second east-west local road off Beatty Road, a northward extension to Qantas Avenue, and a new internal road along the west and south sides of the precinct, joining to a new southern leg to the Balham Road intersection.

Provision has also been made for two left in/left out driveways to access car parking in the northern part of the precinct. One driveway is shown off Beatty Road, and the other from Barton Street.

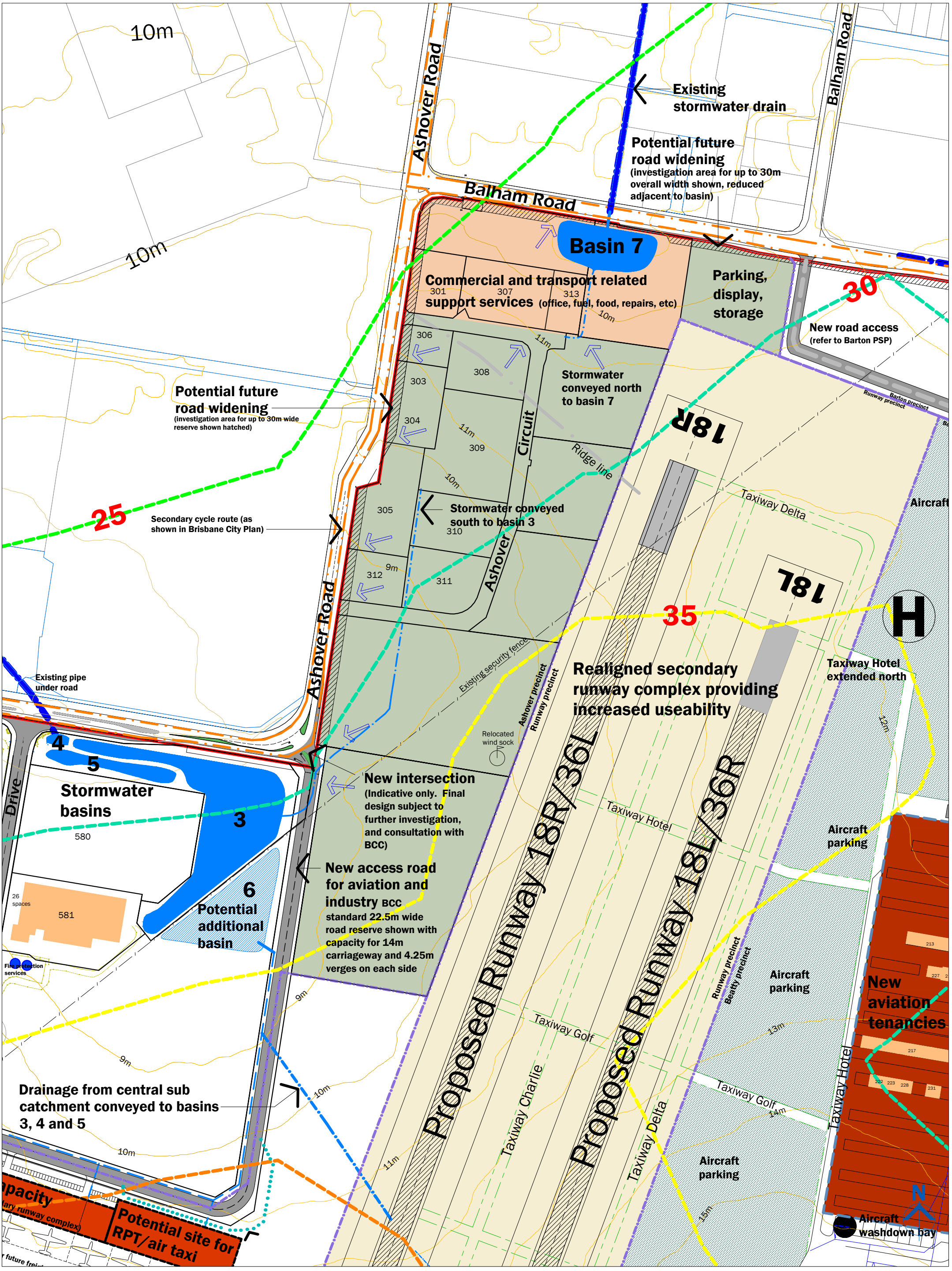

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Figure 25 Ashover Precinct Structure Plan

PlannedFX Planning Environment Strategy Design

Existing intersection extended south into precinct
(design subject to further investigation, and consultation with BCC)

Potential future road widening
(investigation area for up to 30m wide road reserve shown hatched)

Driveway left in/left out only
(subject to consultation with BCC)

30

Barton Street

9m

Principal cycle route
(as shown in SEQ Principal Cycle Network Plan)

Car parking

Display and sales, conferencing and events (preliminary concept)

10m

Drainage
discharged to existing network

Loading

Existing security fence

Runway precinct

Barton precinct

Car parking

Beatty Precinct

11m

Driveway left in/left out only
(subject to consultation with BCC)

Car parking

Design of new internal roads to incorporate measures to discourage through traffic

Beatty Road

Smaller industrial, commercial, retail and service tenancies serving the surrounding area

25

Aircraft parking

Relocated northern helipad

Delta

181

Beatty Precinct boundary

30

Left turn lane for inbound vehicles

H

Multi purpose hangars and industrial tenancies

Qantas Avenue extended north to provide frontages to new lots

35

Taxiway Hotel extended north

Car parking

Multi purpose industrial, office and service tenancies

Road widening investigation area

12m

Timing and layout of southern section is subject to consideration of existing leases and market demand

Car parking

Controlled vehicle access to airside

Drainage discharged to existing network

Barton Precinct
Beatty Precinct

235

219

219A

Boundary Road

Ground access to new aviation tenancies

Taxiway Kilo

208

229

226

215

Qantas Avenue

Boundary Road extended into airport to provide enhanced access to Barton, Beatty and Runway precincts

209

230

214

N

0 50 100m

DRAFT September 2022

Archerfield
Brisbane's Metropolitan Airport

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 26 **Barton Precinct Structure Plan**

PlannedFX
Planning Environment Strategy Design

The timing of redevelopment of the southern part of the precinct is subject to consideration of existing leases and market demand. Ultimately, all sites north of the proposed Boundary Road intersection will be redeveloped.

The sizes of the tenancies, and their anticipated usage, are similar to that of the existing developments on the opposite (east) side of Beatty Road.

Access to this land will be from Beatty Road (via an extension to Boundary Road, and a second access to the north) and from Balham Road, at the existing intersection with Barton Street. The PSP shows conceptually the layout of the new access points from Beatty Road and Balham Road, and opportunities for future widening of Barton Street if required to cater for growth in passing traffic.

The new road network will also provide improved land access to the northern end of the Beatty Precinct, enhancing the attractiveness of the new multipurpose hangars and northern helipad planned adjacent to the realigned secondary runway complex.

The development layout shown in the PSP orients the new tenancies so they face the adjacent roads, enhancing the presentation of the airport at the interface to the surrounding area.

Vehicle access is controlled to three main intersections (Beatty Road at Boundary Road, an intersection mid way between Boundary Road and Barton Street, and a southern leg to the Balham Road intersection), and provision is also made for left in/left out driveways to access the car parking proposed towards the northern end of the Beatty Road frontage, and mid block along Barton Street.

Qantas Avenue is shown extended north, to provide a service road parallel to Beatty Road. The design of the Qantas Drive extension, the additional access points at Boundary Road and Balham Road, and the driveway access points will be resolved with BCC when more detailed plans are prepared for the Barton Precinct developments.

13 Environment Strategy summary

INTRODUCTION

The Archerfield Airport Environment Strategy 2022 (AES) addresses the ongoing environmental management of the airport site. It also provides the framework for responsible environmental management by airport tenants.

This strategy comprises:

- a statement of environmental responsibilities that apply to Archerfield Airport;
- a description of the airport environmental management system, including the process by which AAC implements the AES and related environmental management procedures;
- the AAC corporate environment policy;
- a summary of existing environmental issues, management responses to those issues and an action plan to address them;
- details of the ongoing consultative processes AAC uses to implement and review the AES.

This strategy should be read in conjunction with the Archerfield Airport Master Plan that sets out AAC's 20-year vision for the development of the airport.

ACHIEVEMENTS 1998-2022

AAC has over the period 1998-2022 achieved a number of milestones which have contributed to the improvement of the airport environment.

Studies have been completed, Environmental Management Procedures (EMPs) prepared, major drainage works have been implemented, water and energy use has been audited, water conservation measures implemented, a renewable energy project implemented on building 111, the airport environment has been monitored and analysed (and the network of groundwater monitoring wells has been reviewed and expanded), environment protection awareness information made available, and relationships with key stakeholders strengthened.

A summary of these achievements is provided in Chapter 14.

AAC ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

Environmental responsibilities

AAC maintains the runways, taxiways, grassed areas, and infrastructure; develops new airport facilities; leases sites; and oversees environmental compliance by tenants.

AAC prepares the AES; develops and maintains the airport's environmental management system; undertakes environmental reviews of relevant aspects of the airport; works with the Airport Environment Officer (AEO) and tenants to protect the environment of the airport and assist with the investigation of incidents on the site; liaises with environmental authorities; and provides annual reports to Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) on progress on implementing the AES.

These responsibilities are established through legislation and are set out in Chapter 15 and in the airport Environmental Management Procedures (EMPs).

AAC tenants are responsible for environmental management of their leased site in accordance with the AES, lease conditions and relevant legislation, standards and guidelines; providing practical assistance to AAC in developing, reviewing and revising the AES; adhering to requirements of the AES; devising environmental management procedures and implementing improvements specific to the lease site; and adhering to appropriate dangerous goods handling and storage standards, and to workplace health and safety standards.

Scope

The Archerfield Airport EMS addresses AAC operations, existing tenants, new facilities, non-aviation tenants and activities, and emergency events occurring on the site.

It comprises this Strategy, the EMPs, and the management processes that are in place.

AAC works with tenants to ensure that all responsible parties are aware of their environmental obligations.

Environmental Management Procedures

The EMPs include procedures for assessing prospective tenants, communication and consultation, emergency preparedness and response, minor and major spill response, environmental awareness and training, tenant environmental reviews, environmental reviews at the end of a tenancy, and assessment of new development works.

Action plan

The actions identified in the AES are summarised in the *Archerfield Airport Environment Action Plan*, which is included in Appendix D.

Communication

AAC communicates with a variety of parties both on the site (tenants and operators) and external to the site.

Key aspects relevant to environmental management include:

- facilitation by AAC of monthly management meetings involving the Airport Environment Officer (AEO), Airport Building Controller (ABC) and AAC personnel;
- a rolling program of reviews of tenant operations;
- provision of information on the AAC web site;
- targeted consultation with stakeholders on specific issues;
- community consultation on major projects;
- regular 12 monthly reporting of environmental matters to DITRDCA;
- environmental training and education.

Environmental training

All current AAC staff undertake environmental awareness training on an annual basis. Training is ongoing, responsive to needs. AAC personnel and tenants will be briefed on the new AES.

AIRPORT ENVIRONMENT POLICY

AAC recognises the importance of maintaining and where practical, enhancing the quality of the environment on Archerfield Airport and neighbouring areas.

Its commitment and actions to realise this are described in the AAC Corporate Environment Policy in section 15.2 3.

CURRENT ENVIRONMENTAL STATUS, ISSUES, AND ACTIONS

The AES includes for each aspect of the environment, management objectives, a statement of existing conditions, potential impacts, management measures, and targets for the planning period.

The information is based on a review of past studies and more recent investigations of groundwater, surface water, potable water consumption, asbestos and heritage.

More detail is provided in Chapter 16.

Archaeology

The 2021 *Archerfield Airport Heritage Management Plan* (Australian Heritage Specialists, 2021) provides information about

Aboriginal Cultural Heritage and historical (built) heritage.

The site and surrounding area has been highly disturbed since European occupation of the area, as a result of land clearance, stock grazing, and the development and operation of the airport since the late 1920s. The Cultural Heritage assessment identifies an area along Oxley Creek (in the designated conservation area) that has 'low' Aboriginal Cultural Heritage potential.

In addition, the assessment has identified two areas, one in the Mortimer Precinct and the second in the Beatty Precinct that have potential for discovery of sub surface artefacts from past use and development in the pastoral, development of air transport, and wartime periods.

In these areas, before any sub surface works are undertaken, personnel will be provided with a heritage induction, and measures will be implemented to manage any artefacts that might be discovered.

Built heritage

The HMP provides a hierarchy of significance for the buildings and other elements remaining at Archerfield from these historical phases.

It attributes an 'exceptional' grading to the continued operation of the airport, and concludes that from a heritage perspective, the continued operation of the airport takes precedence over other considerations.

The HMP has found that the significant historical heritage values remaining at Archerfield Airport are confined to that part of the Beatty Precinct which contains the Airport Administration and Terminal Building, God's Acre Cemetery, a number of hangars and some other buildings associated with historical phases 2 and 3 of the airport.

These buildings and features fall within an area described as the *Heritage Curtilage* (Figure 29).

AAC, and its parent company Miengrove Pty Ltd have invested more than $3.8M in heritage projects. In 2001 AAC restored the Shell building. In 2009 the Administration and Terminal building again became the airport administration offices with the refurbishment of Level 2 of the building by AAC. In 2015 Level 1 of the Terminal building was significantly refurbished, winning awards in the Heritage and Interior Design categories at the 2015 Brisbane Regional Architecture Awards.

AAC continues to work with Friends of God's Acre to ensure the cemetery is well maintained.

Consideration will be given to heritage aspects in the ongoing management of the airport, and in decisions on future development projects. Where practical, interpretative information about these aspects will also be included in the History Room located on the ground level of the Administration and Terminal building.

Flora and fauna

The airport environment has been heavily modified since prior to the establishment of the airport, when the site was farmed.

The main operational areas have been subject to a continuous maintenance program that has included mowing, and removal of large trees where these infringe on obstacle clearance standards.

The area fringing Oxley Creek has some remnant values, and this land has been incorporated into a green buffer.

A flora and fauna assessment of the buffer area (shown in Figure 2 *Master Plan vision*, and in Figure 23 *Beaufighter Precinct Structure Plan*) will be undertaken prior to any future development in this area.

Air emissions

There are negligible emissions to air. Establishments which include spray paint booths have appropriate filters installed and these are maintained in accordance with Brisbane City Council requirements and are inspected by AAC and the AEO.

Ozone depleting substances

A detailed audit of the airport in 1993/94 identified all equipment containing ozone depleting gasses. All BFC fire extinguishers were removed in 1997, and there are no remaining air conditioners filled with Freon/CFC's.

Ongoing environmental reviews by AAC seek to identify any ozone depleting gasses on site. If any are identified their removal will be negotiated.

Surface water

The airport surface water falls into six sub catchments (Figure 17), and is conveyed ultimately to Oxley Creek by a network of open and piped drains.

A detention basin at the south-west boundary of the airport assists with managing peak flows, and improving water quality prior to discharge to Oxley Creek. Three additional bio-filtration and detention basins have been constructed recently adjacent to the Boundary Road frontage to manage peak flows from future works at Transition - Archerfield Logistics Estate (Transition Estate). Gross Pollutant Traps were constructed between Basin 4 and Boundary Road (at Transition Drive) to further improve the quality of stormwater from the Boundary Precinct and central sub catchment prior to its release to the BCC drainage system to the north of the airport.

Rainwater tanks have been installed in a number of tenancies, and in new developments undertaken by AAC.

Groundwater quality

Groundwater quality is monitored annually, and since this practice commenced in 1993, water quality has generally conformed to or exceeded relevant environmental criteria. Localised elevations are addressed progressively with the AEO.

Following a review of the monitoring program in 2012, new groundwater monitoring wells were installed to ensure all on-airport areas are monitored as well as to test contamination coming onto airport from off-site locations. The bore locations and the direction of groundwater flow are shown in Figure 30 *Groundwater*.

Soil

With the exception of BP Truckstop (which was subject to soil contamination from a leaking storage tank, discovered in 2006, and now contained), there are no known areas of soil contamination that pose a threat to the environment of the airport.

Assessments show that localised contamination levels are within accepted criteria.

Hazardous materials and waste

Existing asbestos is recorded in the airport asbestos register, which is kept up to date as works are completed. A significant quantity of asbestos was removed between 2012 and 2015 as a result of extensive repair and upgrade works to various hangars and buildings.

DITRDCA recommends that AAC determines levels of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS), which are non-biodegradable chemicals that are highly persistent in the environment (and in the past used in fire-fighting foam and equipment), to gain an understanding of the background levels of PFAS on airport and coming from off-site areas.

AAC currently considers the recommendations within the most recent PFAS National Environmental Management Plan Version 2.0 – January 2020 published by Heads of EPA Australia and New Zealand and will consider any future versions of these guidelines when they become available.

The storage and handling of hazardous materials is required to comply with relevant State legislation, and this is assessed during tenant environmental reviews.

Waste is managed and disposed of in accordance with Trade Waste requirements.

Natural resources and energy

Potable water use was reviewed and a management plan formulated in 2008 to minimise consumption and improve efficiency.

When the drought ended the State government abolished the Queensland Water Commission and its permanent water conservation measures on 1 January 2013.

Energy usage is considered as part of the periodic environmental reviews of tenant and AAC operations.

Opportunities for energy efficiency are also considered in the design, siting and specification of new works by AAC and the assessment of new works by tenants.

Noise

Potential noise sources from on ground activities at Archerfield Airport are limited to maintenance and general commercial activities conducted on site, and ground running of aircraft.

Noise emissions are considered as part of the assessment of new tenancies and ongoing tenant environmental reviews.

To address noise from ground running of aircraft, dedicated engine run-up areas have been established away from the main centres of development.

NEW FACILITIES

AAC is committed to sustainable development.

The environmental performance of refurbished offices in the historic Terminal building is a prime example of this.

Improvements in energy efficiency, water use and indoor environment quality, whilst maintaining the heritage aspects of the building, were paramount to this project.

Since completion, AAC energy consumption has been reduced by almost half, saving around 5000 kg of greenhouse gas emissions per annum.

Water tanks have been incorporated into new developments such as the Corporate Hangars, Hangar 4, Hangar 13, the aviation/warehouse and office at site 676 in the Beaufighter precinct, the Aviall building at Site 111, and the new logistics facility at site 581 in the Transition. estate.

AAC requires new tenants to identify all potential environmental issues or impacts, and assists them to clarify applicable legislative requirements and best practice management guidelines that will be applied.

AAC's EMPs include procedures to manage this process.

The AEO and Airport Building Controller (ABC) (if required) are involved in this process.

14 Scope and overview of the AES

14.1 SCOPE OF THE ENVIRONMENT STRATEGY

Under the *Airports Act 1996* and regulations, AAC is required to develop and implement an AES that:

- sets out AAC's objectives for the environmental management of the airport;
- identifies environmentally significant areas within the airport;
- identifies sources of environmental impact associated with airport operations;
- defines studies, reviews and monitoring to be carried out in relation to the environmental impact of the airport;
- sets timeframes for completion of audits and reviews;
- sets out specific measures to be implemented by AAC to address existing or potential impacts, and timeframes for completion of these; and
- provides details of consultation undertaken in preparing the AES.

14.2 OVERVIEW OF 2022 AES

The AES addresses the management of environmental issues arising from airport activities and operations.

It covers the ongoing environmental management at the airport arising from the use of the airport site.

The relationships between the various elements of the AAC environmental management system are illustrated in Figure 27, in section 15.4.

This strategy comprises:

- a statement of environmental responsibilities that apply to Archerfield Airport;
- a description of the Airport Environmental Management System, including the process by which AAC will implement the AES and related environmental management procedures;
- the AAC corporate environment policy;

- a summary of existing environmental issues, management responses to those issues and an action plan to address them;
- details of the ongoing consultative processes AAC will adopt in implementing and reviewing the AES.

This AES builds on the previous strategies (1999, 2000, 2005, 2010, 2012 and 2017).

14.3 ENVIRONMENTAL MANAGEMENT ISSUES

The principal environmental management issues at Archerfield Airport are:

- management of new development works to minimise and ameliorate impacts on the environment;
- conservation of any significant flora and habitat values along Oxley Creek;
- protection of storm water and groundwater quality from contamination by pollutants from the airport;
- encouraging the efficient use of water and energy;
- ensuring that all chemicals on airport are appropriately handled, used, stored and disposed of;
- containment and management of spills;
- appropriate containment and handling of all asbestos in buildings and plant on airport (as identified in the asbestos audit and register);
- protection of any cultural and heritage values (pre and post contact); and
- ensuring that airport tenants are aware of their environmental obligations and comply with all relevant requirements.

14.4 OVERVIEW OF ACHIEVEMENTS 1998-2022

Over the period 1998-2022, AAC has achieved the following milestones. These have all contributed to improvements to the management of the airport environment.

Table 5: Summary of achievements 1998-2022 (AES)

Activity	Date
Environmental management system	
AAC adopted new airport *Environmental Management Procedures* (EMPs).	2003
AAC reviewed EMPs, and identified minor revisions	2010
Heritage	
AAC has supported the restoration works by Friends of God's Acre, including with donation of funds and provision of maintenance services over the past 18 years.	1998 onwards
AAC restored the Shell building	2001
The *Cultural heritage assessment and management plan* for the airport was completed.	2003

Activity	Date
AAC purchased in 2000 and refurbished the 2nd floor of the neglected Airport Terminal building and relocated its administration offices to the upper floors of the building	2009
Brisbane Regional Commendation awards for both Heritage and Interior Architecture for refurbishment of the middle floor of the Airport Terminal building.	2015
Refurbishment of the ground floor public areas, and painting and waterproofing of the exterior of the Airport Terminal Building in preparation for Brisbane Open House	2015
Refurbishment and repurposing of sites 3 (by Tenant), 5 and 6 which have heritage value	
AAC prepared a Heritage Management Plan for Archerfield Airport, replacing the plan prepared in 2001.	2021
AAC established the airport History Room in the Administration and Terminal building	2022
Flora and fauna	
Fire Ant control has been undertaken by helicopter and motorcycle broadcasting.	2001 onwards
Creation of a conservation zone in the south-west part of the airport, adjacent to Oxley Creek, to provide a permanent buffer	2009
Air quality	
Existing data on airshed quality obtained from the DES (formerly DERM/EPA) monitoring station at Rocklea	2004
Inventory of existing airport tenants and users was compiled as a baseline for possible future air quality assessments	2004
Air quality testing at Site 400	2015
Dust	
Wirraway Avenue was reconstructed and resurfaced.	2000
Beaufighter Avenue was sealed and extended into the Beaufighter Precinct.	2000
Dust from Site 670-672 was monitored over a six month period.	2015
AAC commissioned URS consultants to conduct an assessment of dust from Site 670	2015
Various dust, erosion and sediment control initiatives implemented within the Beaufighter Precinct.	
Surface water management	
The former open drainage line through the Beaufighter, Boundary Road, Runway, and Beatty precincts (which was subject to significant scouring) was piped, and silt traps and dissipation structures installed to moderate peak flows and manage water quality prior to discharge to Oxley Creek.	2001
A significant new stormwater detention basin was constructed in the Beaufighter precinct, treating stormwater prior to its discharge to the Oxley Creek.	2001
The stockpile areas for the recycling facility at site 670-672 on Beaufighter Avenue drain to a sedimentation basin for treatment prior to discharge to the main drainage system on airport. Water is recycled for dust suppression and irrigation purposes.	2001
A triple interceptor was installed to treat water from the aircraft washdown bay. The washdown bay was signed to encourage its use.	2002
The second wash down bay (at the eastern end of Taxiway Bravo) was decommissioned.	2002

Activity	Date
Swale drains were constructed along the southern boundary of the Beaufighter Precinct.	2003
The open drain running north-west from the Runway precinct, under the 04/22 runways to Boundary Road was upgraded with the piping of the section near the runways, and the creation of a detention basin in the Boundary precinct. This will modulate peak flows entering the drainage system through Rocklea, which ultimately discharges to Oxley Creek approximately 2 km downstream of the airport.	2008
Stormwater tanks were provided for the new corporate hangars on Wirraway Avenue, and site 676 constructed by AAC on Beaufighter Avenue to retain rainwater for use on site, and assist with reducing peak discharge volumes to Oxley Creek.	2007-8
Small rock landscaping has been introduced to localised sections of open drains showing evidence of minor soil erosion.	1998 to present
Civil construction work, which included stormwater and associated services to improve drainage at the northwest end of Archerfield Airport was completed. The works included construction of three stormwater basins	2014
Underground stormwater drains around the southern and eastern areas of the airport were examined by CCTV camera and significant repair/upgrade work was carried out to improve drainage	2014/2015
Open earth drains have been periodically slashed and weeds removed.	Ongoing
Surface water quality monitoring in open drains and at drain outlets has been undertaken on an annual basis.	Ongoing
Groundwater	
The network of groundwater quality monitoring wells across the airport was serviced and upgraded.	2004
Well No. 9 was relocated, to fit with redevelopment in the Beaufighter precinct.	2004
A new sampling and analysis program was implemented.	2004
Simmonds & Bristow commissioned to review groundwater monitoring program	2012
Six new groundwater monitoring wells were installed between 2012 and 2015	2015
The annual groundwater monitoring program by AAC has continued throughout the planning period with an increased number of sampling locations and analysis for contaminates of potential concern (CoPC).	Ongoing
Issues identified from analysis have been assessed in consultation with the AEO and will continue to be addressed over the planning period.	Ongoing
Soil contamination	
The former Airport Rescue and Fire Training Area was closed and remediated	1994
The former battery recycling site was remediated by removal of the contaminated soil and reclamation with clean fill.	1997
The underground storage tanks at the Shell Building were decommissioned and the site remediated.	1998
The former Mobil fuel depot at Site 12 was decommissioned and the site remediated	1999
Soil tests were carried out at Site 110 (formerly occupied by Flying Colours)	2013
Soil tests were carried out at Sites 9 and 635	2014
Soil tests were carried out at Site 668	2015

Activity	Date
Various soil investigations completed throughout the airport the location and results which are tracked in the Environment Site Register (ESR), Triggers for such assessments include new building activities, change in use or lease end requirements.	
Hazardous materials and waste management	
Asbestos Audits Queensland Pty Ltd prepared an *Asbestos Materials Report and Register for Archerfield Airport.* The report identified asbestos in AAC owned buildings, and was updated regularly as buildings come into AAC ownership until 2012	2003 to 2012
A Management Plan and risk assessment was added to the asbestos register.	2006
Asbestos Audits Queensland Pty Ltd prepared an *Asbestos Management Plan and Register for Archerfield Airport, which* incorporated new buildings and recognised 2011 codes of practise. Update of the plan is ongoing	2009
Cyclical reinspection's of low-density fibrous ACM, undertaking any recommended preventative maintenance measure or remedial works.	2012, updated in 2015 and 2022
AAC created a *Chemical and Hazardous Materials Register* for its grounds maintenance and works operations	
AAC has included in its tenant inspections consideration of materials storage, handling, waste management, and disposal.	Ongoing
Brisbane City Council regularly tests sewage entering its treatment system from the airport. Any non conformances are reported to AAC and the tenant (if applicable) for action.	Ongoing
Removal of a significant volume of ACM from Airport, as a result of various building activities, at the following sites; 003, 004, 021, 025, 219-A, 105, 110, 013, 014, 108 & 109	Ongoing
Natural resources and energy	
AAC installed rainwater tanks for the corporate hangar development on Wirraway Avenue and the warehouse and office on Beaufighter Avenue	2007-8
AAC installed a 3000L Rainwater Tank for the Aviall warehouse on Ditchmen Avenue	2012
Water meters have been upgraded to improve monitoring of consumption.	2008
Efficient water fittings have been installed in AAC buildings.	2007
AAC developed a *Water Efficiency Management Plan* (WEMP) in accordance with Queensland Water Commission requirements, in consultation with tenants and Brisbane Water. Subsequent legislation abolished The Queensland Water Commission and its Permanent Water Conservation Measures on 1 January 2013.	2008
The airport has secured a number of businesses that recycle materials and equipment for reuse in construction and manufacturing. These include Veolia Environmental Services, Alex Fraser Group and Q-Crete. These operations promote the reuse of resources, and reduce the energy required to produce materials.	1998-present
Use of natural resources and energy is considered in tenant assessments.	1998-present
New solar installation at building 111	
Consideration of solar generation in future developments (where feasible).	

Activity	Date
Noise	
Noise emissions from tenancies on airport are managed in accordance with the EMPs and any site environmental management plan in place for their operation.	Ongoing
Noise resulting from building activities is managed through project specific Construction Environment Management Plans (CEMP).	Ongoing
New facilities	
EMPs have been developed for new tenancies, renewal of existing tenancies, and for assessment of major works and are periodically updated	2003-present
Corporate hangars were constructed, incorporating rainwater harvesting.	2006
A warehouse and office development incorporating energy efficiency measures and rainwater harvesting was constructed by AAC at site 676.	2008
A new warehouse and office development incorporating energy efficiency measures and rainwater harvesting were constructed at Site 111.	2012

15 Environmental management framework

15.1 REGULATORY FRAMEWORK

15.1.1 Airports Act 1996

The *Airports Act, 1996* and the associated *Airports (Environment Protection) Regulations, 1997* provide the primary mechanism for Government to ensure the ongoing responsible environment management of Archerfield Airport.

This legislation requires AAC to produce and implement an Airport Environment Strategy (AES).

All operators of undertakings on the airport, including AAC, have an obligation to comply with the AES, the *Airports Act 1996* and Regulations.

AAC has the additional obligation to prepare the AES, monitor pollution levels at the airport in accordance with its AES and report the results of this monitoring on an annual basis.

The first AES for Archerfield was approved on 15 November 1999. In December 2000, an amended version was published, including the approved 2019 ANEF for Archerfield Airport. The AES for 2004-2009 was approved on 18 January 2005, the AES for the period 2010-2015 was approved on 26 March 2010, and an updated version for the period 2011-2016 was incorporated into the 2011-31 Master Plan. This version was approved on 15 July 2017.

Airport operators and airport regulators

The Act provides a system for separating the roles of the airport operator and airport regulator.

In the case of Archerfield Airport, the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) and the Civil Aviation Safety Authority (CASA) provide the regulator role. Archerfield Airport Corporation being the Airport Leasing Company (ALC) undertakes the airport operator role.

AAC as airport operator is responsible primarily for activities that take place on the ground and within airport confines. Airservices Australia (AsA) has the principal responsibility for aircraft operations.

AAC recognises that operational issues at times need to be addressed jointly by AAC and Airservices Australia, and AAC is proactive in identifying relevant aspects and potential solutions as appropriate.

Airports (Environment Protection) Regulations 1997

The regulations:

- set limits for environmental pollution of air, water and soil, and for noise emissions;
- set out the duties everybody operating at the airport must comply with; and
- authorise the monitoring and remediation of breaches of environmental standards.

The Regulations do not apply to pollution generated by aircraft, or to noise generated by an aircraft in flight or when landing, taking off or taxiing at the airport.

All users of Archerfield Airport are required under the *Airports (Environment Protection) Regulations 1997* to:

- avoid polluting the environment
- preserve local biota and the ecosystems and habitats of native species
- preserve existing aesthetic, cultural, historical, social and scientific (including archaeological and anthropological) values of the local area;
- ensure there are no adverse consequences for endangered or vulnerable flora or fauna species or endangered ecological communities;
- ensure there are no adverse consequences for sites of indigenous significance on the airport site; and
- prevent the generation of offensive noise.

Environment Protection and Biodiversity Conservation (EPBC) Act 1999

The Commonwealth EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places.

The Act applies to the following areas or matters of national environmental significance:

- world heritage sites;
- national heritage places;
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed);
- nationally threatened species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;

- nuclear actions; and
- a water resource, in relation to coal seam gas development and large coal mining development.

The Act aims to:

- provide for the protection of the environment, especially matters of national environmental significance;
- conserve Australia's biodiversity;
- protect biodiversity internationally by controlling the international movement of wildlife;
- provide a streamlined environmental assessment and approvals process where matters of national environmental significance are involved;
- protect Australia's world and national heritage; and
- promote ecologically sustainable development.

The Act is triggered when a proposal has the potential to have a significant impact on a matter of national environmental significance.

The airport is on Commonwealth land, so any proposal that is likely to have significant impact on the environment also requires assessment under the *Environment Protection and Biodiversity Conservation Act* (EPBC Act).

Guidance on the assessment of environmental values (including heritage), likely impacts (and mitigation), and whether approval is required under the EPBC Act is provided in *Significant Impact Guidelines* published by the Commonwealth (Guidelines 1.1 and 1.2).

The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) administers the Act and coordinates the assessment of potential impacts. After consultation and assessment, the Minister for the Environment (or delegate) is responsible for deciding whether a project needs approval under the Act, and if it does, whether it is allowed and under what conditions.

The Minister will not intervene in a proposal that has no significant impact on one of the eight matters of national environmental significance, even though there may be other undesirable environmental impacts, for example on air quality, noise, odour, general amenity or on animals that are not listed as threatened or endangered under the EPBC Act.

The regulation of these matters is the responsibility of the Queensland State government, and the environment protection requirements are administered by various agencies, including Brisbane City Council.

Airport Environment Strategy

Under the *Airports Act 1996* AAC is required to produce and implement an Airport Environment Strategy. The Strategy must:

- set out AAC's objectives for the environmental management of the airport;

- identify environmentally significant areas within the airport;
- identify sources of environmental impact associated with airport operations;
- define studies, reviews and monitoring to be carried out in relation to the environmental impact of the airport;
- set timeframes for completion of audits and reviews;
- set out specific measures to be implemented by AAC to address existing or potential impacts, and timeframes for completion of these; and
- provide details of consultation undertaken in preparing the AES.

The previous AES was approved on 24 May 2012, after completion of the consultative processes set out in the *Airports Act*.

State law

AAC is required to comply with relevant State legislation and regulations, to the extent that these do not conflict with the Airports Act or Regulations.

State laws concerning workplace health and safety, waste management (including trade waste), motor vehicle pollution, emissions of substances that deplete stratospheric ozone, or the use of a pesticide are examples that are relevant to activities at Archerfield.

Compliance requirements

All operators of undertakings on the airport, (AAC and tenants), have an obligation to comply with the *Airport Environment Strategy*, the *Airports Act* and Regulations. It is an offence to cause deliberate damage to the environment.

Legal register

AAC has identified in Appendix A legislation and regulations relevant to its operations.

The register of legal requirements will be kept up-to-date through liaison with the Airport Environment Officer (AEO) at least monthly during the regular Airport Environmental Management Forum (AEMF).

15.2 ARCHERFIELD AIRPORT CORPORATION ENVIRONMENT POLICY

Environmental management at Archerfield is guided by the AAC environment policy.

Policy scope and principles

In developing and managing Archerfield Airport, AAC will:

- identify and manage the environmental issues that are within AAC's responsibility;
- comply with relevant environmental legislation and regulations;
- establish environmental objectives and targets to minimise the environmental impact of the airport;

- measure, monitor and improve upon the environmental performance of the airport;
- promote to AAC's employees, tenants, customers and neighbours its commitment to sound environmental management.

These principles have been taken into account when preparing this AES.

AAC environment policy

Archerfield Airport Corporation Environment Policy

Archerfield Airport is operated and developed by Archerfield Airport Corporation (AAC). AAC is a private company which in 1998 acquired the long term lease to the airport.

AAC has overall responsibility for environmental management on the airport. Airport users, including tenants have responsibility for appropriate environmental management of their activities.

AAC recognises the importance of maintaining and where practical, enhancing the quality of the environment of Archerfield Airport and neighbouring areas.

AAC will:

- *operate the airport in an environmentally responsible manner*
- *minimise any adverse environmental impacts of its operations*
- *comply with all legally binding environmental management requirements*
- *encourage environmental responsibility amongst its employees and contractors*
- *encourage environmental responsibility amongst airport tenants and users*
- *strive to continually improve environmental performance of all aviation and non-aviation operations on the site.*

To achieve this AAC will:

- *establish and maintain procedures and practices to comply with all applicable environment laws and regulations*
- *ensure that this policy, management procedures and environment protection actions are communicated to all relevant personnel, including AAC staff, airport tenants, airport users and contractors*
- *conduct regular reviews of all site operations to identify areas which are or may have the potential to breach a regulatory requirement or which require improvement*
- *conduct regular monitoring and analysis of the airport environment to identify potential issues and ensure compliance with relevant regulations*
- *implement environmental management and operating procedures to ensure that the development of Archerfield Airport is carried out in an environmentally sound manner*
- *consult as appropriate with authorities and the community to ensure that the views of external parties regarding environmental issues are considered when making decisions*
- *ensure that AAC staff are appropriately trained and briefed on compliance and regulations*
- *ensure that tenants and users of the airport are adequately informed of their obligations, compliance and regulatory requirements.*

AAC managers are accountable to the Managing Director to ensure that this policy is implemented.

15.3 ENVIRONMENTAL MANAGEMENT SYSTEM

AAC's system for management of environmental issues on Archerfield Airport follows the principles and format of *ISO 14001:2016 Environmental Management Systems-Requirements with guidelines for use.*

The management system provides a structure for identifying environmental issues, developing environmental management plans to manage these issues, and a method to review and measure environmental performance.

It applies to all operations carried out at Archerfield Airport, encompassing both aviation and non-aviation related activities. As a minimum, it provides a system to ensure that operations for which AAC is responsible will comply with all applicable legal requirements, and where deemed necessary, exceed these requirements.

15.4 ENVIRONMENTAL ROLES AND RESPONSIBILITIES

The roles and responsibilities of AAC, tenants, the Airport Environment Officer (AEO), and the Airport Building Controller (ABC) are set out below. The relationships between the various stakeholders are illustrated in Figure 27.

AACs responsibility

AAC is responsible for:

- overall environmental management on the airport;
- preparation of the AES;
- overseeing implementation of the AES, including informing tenants of their obligations under the Strategy;
- conducting reviews of AAC's own operations, such as maintenance of runways, taxiways, aprons and grassed areas;
- development and management of new airport facilities, such as runways and airport infrastructure;
- preparing Environmental Management Procedures (EMPs) for AAC activities and developments;
- leasing sites to tenants (and setting environmental management requirements via lease conditions, where appropriate);
- adhering to appropriate dangerous goods handling and storage standards, and to workplace health and safety standards; and
- monitoring pollution levels (for aspects defined in the AES) and reporting the results of this monitoring on an annual basis.

Under common law as a landlord AAC may also conduct pollution and contamination tests, order remedial works, or stop activities in the event of environmental harm. Under the *Airports (Environment Protection) Regulations*

1997, the Commonwealth can also assist AAC in having tenants comply with tests, implement remedial works, or stop harmful activities.

Responsibilities of tenants of AAC

Tenants on the site can be broadly divided into four categories:

- aircraft maintenance and service facilities;
- aircraft charter operations;
- airport passenger facilities and flight schools; and
- sites carrying out non-aviation related activities, such as industry, warehousing, service stations and shops.

Tenants are responsible for:

- environmental management of their leased site in accordance with the AES, lease conditions and relevant legislation, standards and guidelines;
- providing practical assistance to AAC in developing, reviewing and revising the AES;
- adhering to requirements of the AES;
- implementing improvements relevant to the leasehold;
- devising environmental management procedures specific to the lease site;
- implementing guidelines set by AAC;
- meeting the requirements of their lease agreements; and
- adhering to appropriate dangerous goods handling and storage standards, and to workplace health and safety standards.

Most leases entered into, or renewed since 1999 stipulate the tenants' environmental responsibility and the requirement to conform to the AAC Environment Policy and AES.

Airport Environment Officer (AEO)

The AEO is part of DITRDCA and fulfils the role of environmental regulator on the airport.

The AEO monitors operations on airport sites and where necessary, enforces the requirements of the Act and its subordinate legislation.

The AEO works cooperatively with AAC and tenants, supporting and ensuring compliance with environmental standards. The AEO can apply financial penalties to environmental offenders.

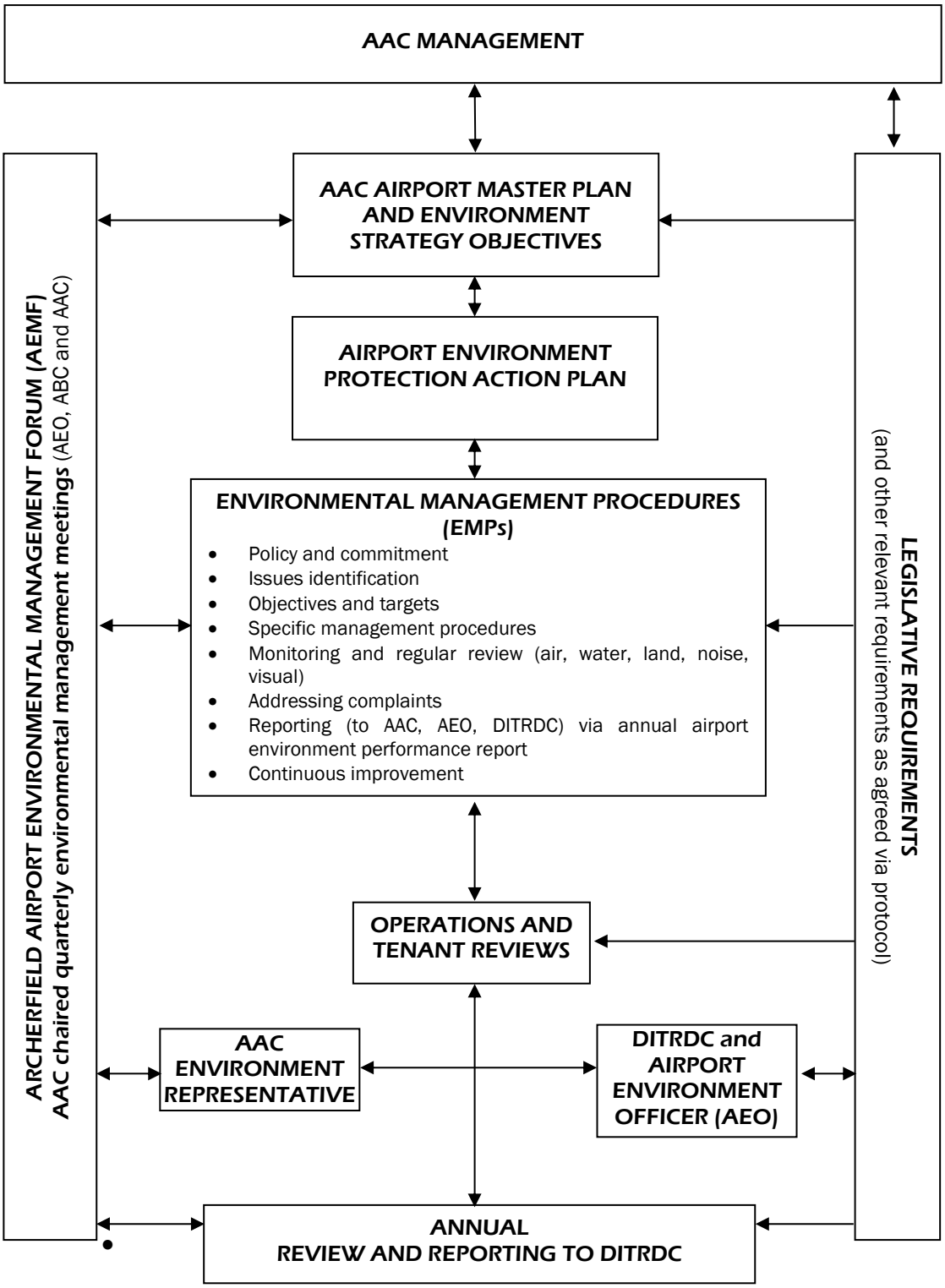


Figure 27. **Overview of environmental management process at Archerfield Airport**

AAC may also conduct pollution and contamination tests, order remedial works or stop activities in the event of environmental harm.

The AEO investigates incidents relating to pollution. The AEO can require any operator on the airport to carry out works; reduce or cease generation of pollution.

If an operator cannot meet the standards detailed in the Regulations due to local conditions, but the operator believes the operations will still comply with the general objectives of the Regulations, the operator can apply to the AEO for an authorisation, allowing the non-compliance to continue for a specified period. If the AEO is satisfied that the authorisation is warranted and the objectives of the Regulations can be achieved, then the authorisation may be granted.

If necessary, the AEO can issue an environmental protection order or infringement notice to any operator on Archerfield Airport who has committed an offence. If the offence is considered serious, the operator and individuals involved can be prosecuted.

Building approval requirements

DITRDCA has appointed an Airport Building Controller (ABC) who is responsible for ensuring that all activities at Archerfield Airport meet the appropriate building and engineering standards.

The ABC must be notified in writing of all proposed construction and building activities; including minor repairs, alterations, and signs. Some minor works are exempt from formal approval.

Building and construction must comply with the *Building Code of Australia* (BCA) as operational in Queensland. Where the BCA does not apply (for example in relation to civil engineering works) the relevant Australian Standard or international standard will apply. The ABC identifies the appropriate standards.

A Certificate of Compliance for Occupancy is required for all building or construction work that requires formal approval by the ABC. A Certificate of Compliance for Occupancy is issued before a building can be occupied, and a Certificate of Compliance for Use is required before engineering works, electrical works, or other utility services can be used.

The consent of AAC is required before the ABC can approve a development application. AAC is responsible for ensuring that all development proposals are consistent with the Archerfield Airport Master Plan and AAC's planning objectives. AAC will in each case assess the impact of the proposal on infrastructure and the operations of the airport, and may impose conditions on building activities.

AAC environment representative

In addition to facilitating the Airport Environmental Management Forum (AEMF), the appointed AAC environmental representative is also responsible for:

- working with the Airport Environment Officer on issues associated with Archerfield Airport;
- preparing associated documentation;
- making recommendations to the Managing Director, AAC;
- ensuring that AAC is compliant with relevant legislation and laws;
- working with the airport community to ensure that compliance is being achieved;
- conducting or coordinating environmental reviews in accordance with policy; and
- applying policy initiatives and identified strategies.

The following table sets out who at Archerfield is responsible for ensuring that the environment protection obligations are fulfilled and environmental management procedures are followed.

Items marked with an asterisk need to be addressed by each tenant in their environmental management plans and other initiatives. Their compliance will be assessed during the cyclical tenant reviews.

Table 6: Environmental responsibilities

Function	Responsibility
Policy and strategy-direction	
Defining environmental policies, and modifying existing policies	AAC Board
Determining objectives, priorities and targets in accordance with policy	AAC Board
Determining environmental management procedures in accordance with the policy direction, objectives, priorities and targets	AAC management
Construction and maintenance activities	
Securing building and environmental approvals	Proponent (typically AAC or tenant)
Assessing contractor's abilities to meet AAC's environmental requirements	For AAC works-Airport Environment Manager * For works by tenants-each tenant, ABC, AEO and AAC
Ensuring compliance with environmentally sound work practices	For AAC works- Airport Environment Manager * For works by tenants-each tenant, ABC, AEO and AAC
Operation phase	
Compliance with State regulated waste, hazardous good and other requirements	AAC for AAC operations. * Tenants and contractors are responsible for their own activities.
Containment of chemicals, fuel and oils	AAC for AAC operations (staff and contractors). * Tenants and their contractors are responsible for their own activities.

Function	Responsibility
Awareness and training	
Promoting awareness of environment protection and management requirements amongst AAC personnel and tenant representatives.	AAC management
Promoting environmental awareness and compliance within each tenant's operation	* Each tenant, with assistance from AAC and AEO
Induction of AAC personnel	AAC management
Training of AAC personnel	AAC management
Induction of tenant personnel	* Each tenant
Training of tenant personnel	* Each tenant
Ensuring that AAC is conversant and compliant with relevant legislation, including changes	Airport Environment Manager
Ensuring that tenants are aware of changes in environmental management requirements	AAC and AEO
Ensuring compliance with legislation	AAC for AAC activities and works * AEO for tenants
Monitoring and review	
12 monthly reviews of AAC operations, surface water and groundwater	AAC
Cyclical tenant reviews, with the review schedule determined according to an assessment of risk to the environment (12 monthly for tenants with hazardous materials on site)	AAC and AEO
Annual Airport Environment Performance report to DITRDCA.	AAC
Revision of EMP documentation to reflect findings of reviews of AAC operations and tenancies	AAC management
Maintenance of records of overall condition of airport environment	AAC
Monitoring and reporting of emissions from tenancies	* Each tenant is responsible for monitoring and reporting on their emissions, and making such reports available to AEO/AAC on request.
Monthly AEMF meetings between the AAC, AEO and ABC.	Minutes of meeting maintained by AAC
Emergency response	
Spill containment airside, and from AAC operations	AAC
Spill containment within tenancies	* Each tenant
Spill containment on common airport land (where caused by a person other than a representative of the AAC).	The person causing the spill (enforced by AAC and the AEO)
Document control	
Ensuring that the key users of the EMPs have up to date copies of the EMPs	Airport Environment Manager.
Acquiring and disseminating environmental management information	Airport Environment Manager with assistance from AEO.
Maintaining EMPs up to date (from replacement pages provided by AAC)	Each person on the Document Distribution Register.

15.5 ENVIRONMENTAL ASPECTS AND POTENTIAL IMPACTS

The potential impacts of airport activities (to the extent these are required to be addressed by this strategy) on aspects of the environment is summarised in the table below.

The activities have been grouped into three phases:

- construction;
- operation (AAC and tenants); and
- emergency action.

Table 7: Summary of environmental aspects and potential impacts

Activity	Aspect	Impact or potential impact
Construction activity		
Transportation of machinery and materials	Increased traffic on nearby roads	Nuisance noise
	Dirt on roads	Nuisance dust
		Disruption to local traffic
		Possible importation of weeds and plant pathogens
		Possible importation of Fire Ants
		Contamination of stormwater
		Pollution of surface water
Operation of machinery/equipment on site	Increased noise levels	Nuisance noise
	Production of dust	Air pollution
		Nuisance dust (possible impacts on aviation and ground based activities, on and off airport)
Plant and vehicle wash down	Discharge of wash down water contaminated with oils, fuels etc	Contamination of soil, surface water and/or groundwater
		Possible spread of weeds and plant pathogens
		Possible importation of Fire Ants via contaminated plant or vehicles
Site clearance	Vegetation removal	(Low) potential loss of habitat and/or significant plant species along Oxley Creek
	Heritage values	Potential disturbance of heritage or archaeological sites
	Surface destabilisation	Sediment pollution of receiving waters (Oxley Creek)
		Nuisance dust (possible impacts on aviation and ground based activities, on or off airport)
Demolition of buildings, structures or plant containing asbestos	Human health	Potential for impacts on health if asbestos material is not appropriately contained and/or disposed of.
Excavation/levelling and construction of stormwater drains	Increased sediment discharge in runoff from surface disturbance	Sediment pollution of receiving waters
On site storage of fuel and oil	Major spillage or leakage of fuel	Soil, surface water and/or groundwater contamination
Refuelling plant and vehicles	Minor spillage or leakage of fuel	Soil, surface water and/or groundwater contamination
Concrete work on site	Increased suspended matter in stormwater runoff	Sediment pollution of receiving waters
Landscaping works	Flora and fauna	Importation or spreading of soil or plants contaminated by Fire Ants

Activity	Aspect	Impact or potential impact
Earthworks	Increased suspended matter in stormwater runoff	Sediment pollution of receiving waters
	Release of acid sulphate soils-potentially found at or below the 5m (AHD) contour	Degradation of Oxley Creek environment
Airport operation (AAC and tenants)		
Storage and use of chemicals, fuel, oils (including hazardous and dangerous chemicals)	Escape of chemicals to the environment from spillage or leakage	Health impact on site personnel and neighbours Potential pollution of soil, air, surface, and/or groundwaters.
Aircraft wash down	Discharge of wash down water contaminated with oils, fuels etc	Contamination of soil, surface water and/or groundwater
General waste from airport activities	Production of general waste and litter	Potential stormwater contamination Potential visual pollution
	Tracking of waste from generation to disposal	Potential nuisance or hazard to aviation activities (FOD)
Hard rubbish generated by airport activities	Disposal of waste off site	Use of landfill space
Generation and handling of regulated waste	Containment of waste Tracking of waste from generation to disposal	Potential occupational health and safety issue
Ground running of aircraft	Aircraft noise	Nuisance noise in nearby areas
Industrial plant and equipment used on site.	Machinery noise	Health risk to site workers Nuisance noise to nearby sensitive receptors
Maintenance work, office operations and staff facilities	Production of general waste and litter	Use of landfill space
Activities with emissions to air.	Discharge of pollution to the atmosphere	Potential effects on air quality
Handling of dangerous goods	Accidental discharge via spill	Pollution of soil, air, surface water and/or groundwater
Handling of hazardous goods	Accidental discharge via spill	Pollution of soil, air, surface water and/or groundwater
Emergency actions		
Incidents or accidents causing material spills	Escape of materials to the environment from spillage or leakage	Pollution of soil, air, surface water or groundwater
Identification of Fire Ant in plants or soil on airport	Introduction of Fire Ant via imported plants or soil	Containment and destruction in accordance with government requirements

As part of the ongoing management of the airport environment, site and activity specific assessments are required. The methodology for doing this is provided in the EMPs.

15.6 ENVIRONMENTAL OBJECTIVES AND TARGETS

Objectives and targets for each aspect of the airport environment are set out in the sections that follow.

Actions and the timing of their implementation are summarised in the Airport Environment Protection Action Plan in Appendix D.

15.7 TENANT REVIEWS

AAC will identify environmental issues on the airport by conducting regular reviews of its own operations and works and those of its tenants on a cyclical basis.

In the case of tenants with hazardous goods, the reviews will be undertaken on an annual basis. The timing of reviews for other tenancies will be determined from an assessment by AAC of the likely risk to the environment of the tenant activities.

The reviews will identify:

- level of compliance with environmental regulations, guidelines or standards;
- any unacceptable work practices;
- any opportunities for minimising the use of natural resources or generation of waste; and
- any general environmental training that may be required by the organisation being reviewed.

Each environmental review will identify any operations or works that are, or could cause a breach of the regulations and also identify possible environmental improvements.

Issues identified by previous environmental reviews will also be checked to ensure that they have been appropriately addressed.

Environmental review results will be compiled into a summary report. Where required, management plans will be devised. For each case where an environmental issue is identified, the following key steps will be taken:

- following clear definition of the issue(s), a priority will be assigned, based on AAC's assessment of the environmental risk posed by the aspect;
- an objective and target(s) will be developed detailing what needs to be achieved;
- a management plan will be developed showing how objectives and targets will be achieved, who is responsible for ensuring the necessary actions are taken, and the timing of that action; and
- the achievement of the management plan actions will be monitored, and AAC personnel advised of this.

Where the issues relate to tenant activities, AAC (with the AEO as appropriate) will liaise with the tenant to ensure that they take all necessary action to bring their operations and/or works into conformity with legislation, standards, and guidelines.

15.8 ENVIRONMENTAL MANAGEMENT PROCEDURES

Environmental Management Procedures (EMPs) have been prepared by AAC to manage the environmental effects of operations and works on the airport.

The EMPs identify a range of activities likely to take place at Archerfield Airport, the aspects of the environment that might be affected by these activities, and the potential impacts of these activities. Objectives and targets are also described.

Procedures

The EMPs currently include the following procedures:

- Procedure AA1-*Environmental assessment of new tenancy or lease renewal*;
- Procedure AA2-*Communication and consultation*;
- Procedure AA3-*Emergency preparedness and response*;
- Procedure AA4-*Minor spill response*;
- Procedure AA5-*Environmental awareness and training*;
- Procedure AA6-*Tenant environmental reviews*;
- Procedure AA7-*End of lease tenant environmental review*; and
- Procedure AA8-Assessment of environmental effects of new works.

Forms

The EMPs include the following standard forms:

- ENV-01 *Tenant Information Form;*
- ENV-02 *Environmental awareness and training record*;
- ENV-03-*Environmental complaint;*
- ENV-04-*Environmental accident/incident report*;
- ENV-05-*Review of environmental non conformance;* and
- ENV-06-*Environmental management checklist for new works*.

Review

The procedures and forms in the EMPs are subject to ongoing review and may change over the life of this Strategy.

Information for tenants

On request, relevant parts of these operating procedures will be provided to airport tenants carrying out similar activities to assist them with environmental compliance.

The AAC EMPs provide a starting point for specific EMPs to be developed by tenants for their construction or operational activities. AAC will encourage

tenants to work with AAC and the AEO to formulate EMPs to meet their environmental management obligations.

15.9 ENVIRONMENTAL TRAINING

AAC

Existing AAC personnel

AAC has in place an internal communication system that provides frequent forums for disseminating relevant information about environmental management issues and responsibilities. This comprises:

- weekly management meetings attended by the Airport General Manager, Airport Operations and Technical Officer, Airport Compliance Officer and Airport Operations Manager; and
- monthly staff meetings (involving AAC administration, operations and management personnel).

The training of AAC personnel focuses on improving awareness of responsibilities and liabilities under the AES; relevant State, and Federal environmental legislation; regulations and guidelines.

Training also assists personnel to familiarise themselves with the company policy, the management system and the environmental risks on the site.

New AAC personnel

All new AAC personnel are provided with an overview of the environmental issues relating to the airport; AAC's environmental policy, strategies, and procedures; and their role and responsibility in addressing those issues as part of their induction. Refresher awareness training is provided for all staff on an annual basis.

Contractors

The Airport EMPs set out procedures for ensuring that all potential effects of new operations or works are considered by AAC prior to commencement. Where required, Environmental Management Plans will be prepared and form part of the specification for the works (or management of the operation).

Any contractors carrying out environmentally sensitive activities on behalf of AAC will be required to demonstrate that they have completed appropriate skills, experience and management systems to successfully address relevant environment protection requirements.

Contractors will need to have in place appropriate environmental management procedures and personnel will be required to undergo relevant training.

The specific requirements will be highlighted in the project specification. All contractors must complete the Contractors Induction which includes the environmental management requirements.

Tenants

Tenants and their employees also need to have an understanding of the 2017 AES.

AAC will provide all tenants with access to the AES and will require that all tenants:

- provide their staff and contractors with awareness training of the AES, and
- provide further training on specific aspects, these being principally determined through the environmental reviews AAC undertakes at each tenancy.

15.10 EMERGENCY PREPAREDNESS

Archerfield Airport has developed *Airport Emergency Procedures* through a committee that includes the Police, Fire Brigade and Ambulance Services.

Emergency procedures are currently in place to deal with incidents which could impact on the environment, such as spills. AAC ensures that its personnel are familiar with these procedures and the location of emergency equipment.

Procedure AA3-*Emergency preparedness and response* in the EMPs details the methodology to be followed.

The need for tenants to maintain emergency equipment on their sites, develop emergency procedures, and ensure that staff are aware of the proper procedures will be identified during site environmental reviews.

15.11 INCIDENTS

Any incident on the airport that is within the responsibility of AAC will be managed in accordance with Procedure AA3-*Emergency preparedness and response*.

If an environmental incident occurs the details will be recorded on Form ENV-04 *Environmental accident/incident report* in the Airport Environmental Management Procedures.

The AEO will be contacted immediately. The incident will be investigated by AAC and a formal internal reporting, investigating and corrective action procedure initiated in accordance with the EMPs.

The AEO will be kept informed of all findings. If the incident has the potential to cause off site effects, the State Department of Environment and Science (DES) and Brisbane City Council will also be advised.

The AEO will also be advised if routine monitoring indicates that an excessive discharge or level of pollutant is present.

Incident reporting

Any major environmental incidents which occur on the site, such as chemical spills, will be investigated by AAC and reported to the AEO.

Depending on the nature of the incident, the State Department of Environment and Science may be informed of the incident, and may also be involved in consequential management measures.

This information will also be reported to DITRDCA in the annual report.

15.12 MANAGEMENT OF NEW FACILITIES

15.12.1 Application requirements

AAC will require new tenants or proponents of new aviation or non-aviation facilities or activities to apply for approvals as provided for in the *Airports Act, 1996*.

In addition to the requirements of the Airport Building Controller, the application for approval will need to detail, as appropriate:

- the activities and operations proposed, in accordance with the Archerfield Airport EMPs;
- any chemicals to be used or stored on the site including type and maximum quantities;
- evidence that the proposal meets any applicable legislative requirements and guidelines for the construction and operation of the activity or site; and
- evidence that the proposal will meet any applicable workplace health and safety, storage and placarding requirements.

Procedures for this and relevant forms are set out in the Airport EMPs.

These include:

- ENV-01 Tenant Information form; and
- ENV-06 Environmental management checklist for new works.

The information provided with applications will assist AAC and the tenant/proponent to identify all potential environmental issues or impacts, and to also clarify applicable legislative requirements and best practice management guidelines that will be applied. If required, the AEO will be provided with this information.

15.12.2 Assessment

From an environmental perspective, the assessment of new works will consider the implications of the proposal for:

- airside operations;

- existing land uses on and adjacent to the airport, including through the emission of noise, dust or odour;
- existing infrastructure and utility services, and any connections proposed during and following construction;
- efficient use of water and electricity;
- access to, from and within the airport;
- significant native flora and fauna;
- heritage values (pre and post contact);
- potential risk of soil or air pollution;
- noise impacts;
- groundwater, including potential changes to groundwater levels on or off airport, and/or water quality;
- surface water, including potential changes to peak volumes entering existing drainage lines, diversion of existing stormwater flows and/or impacts on water quality;
- containment of asbestos, where works relate to buildings or plant listed in the airport asbestos register;
- the potential for the works to result in the introduction or spreading of Fire Ants; and
- the appearance of the site and the airport.

If on reviewing the proposal potential environmental impacts are identified, AAC will work with the proponent to identify how impacts can be mitigated. The preparation of a Site Environmental Management Plan for the construction and/or operational phases may also be required.

15.12.3 Consultation

All new proposals for the site will be reviewed by AAC against the AES, the Airport Master Plan, and other relevant policies, guidelines or standards. Where the *Airports Act 1996* requires consultation with the wider community, AAC will facilitate this.

The AEO will be involved in assessing and advising on the environmental aspects of any major new developments on the airport site, including any Environmental Management Plan for the construction or operational phases.

If in the opinion of AAC, the development could result in a significant off-site impact, AAC will identify and consult with relevant stakeholders including Brisbane City Council, and possibly State agencies and/or the community and their comments taken into consideration.

Information concerning new proposals will be provided to the AEO, in accordance with the Airport EMPs.

All comments received will be reviewed and considered by AAC before deciding on whether the proposal should proceed, and if relevant, under what conditions.

Any significant changes to airport operations will be reviewed in accordance with prevailing DITRDCA's environmental requirements for new airport development.

Where the *Airports Act 1996* requires consultation with the community (such as in the case of a Major Development Plan), AAC will initiate an appropriate consultative process. Comments received by external parties will be taken into account by AAC when deciding whether the proposal should proceed.

15.12.4 Leasing conditions

For all new leases, conditions will be included that ensure that facilities are constructed and operated in accordance with the AES and relevant environmental requirements.

Following construction of the facility, AAC will inspect the premises and verify compliance with any environmental requirements stipulated in the development approval.

Prior to lease expiry, termination, transfer or change of use the AEO will, where there is reason to suspect soil contamination, ensure the sublessee, licensee or occupier, investigates the site pursuant to the requirements of the *Airport (Environment Protection) Regulations* in particular Part 6.07.

AAC undertakes prelease or entry condition reports and exit condition reports on tenancies serving as benchmark reports to ascertain asset, site and environment conditions before and at the expiry or transfer of a lease.

15.13 NEW OPERATIONS AND WORKS

New operations will also be reviewed prior to and following their establishment, to ensure operations are conducted in a proper fashion and do not result in a breach of any legal requirements and comply with the requirements of this Strategy.

The EMPs include:

- Procedure AA8-*Assessment of environmental effects of new works*, and
- Form ENV-06 *Environmental management checklist for new works*.

These set out AAC's requirements for management of new operations or works by AAC.

15.14 NON-CONFORMANCES

AAC's role

In administering the Archerfield Airport environmental management system for AAC operations or works, AAC is responsible for detecting non-conformances,

developing appropriate corrective and preventative actions, and ensuring that such incidents do not recur.

The following types of non-conformances can occur on the site:

- breach of an applicable Act or Regulation;
- failure to follow a formal procedure;
- non-achievement of a formal target; or
- an environmental incident.

Actions by AAC

In the instance of a non-conformance relating to AAC operations or works, the AAC is responsible for carrying out the following actions:

- recording details of the non-conformance using the form ENV-05 *Review of environmental non-conformance*;
- investigating and identifying the reason for the non-conformance;
- developing an appropriate corrective and preventative action to avoid future non-conformance;
- ensuring the corrective and preventative actions are implemented in accordance with agreed EMPs or other relevant guidelines; and
- initiating incident reporting procedures.

Following an incident, the findings of the investigation and development of the corrective and preventative actions will be provided to the person/s involved in the non-conformance and the person/s carrying out the necessary preventative and corrective actions.

Typically, the results of a non-conformance investigation may result in one or more of the following actions:

- amendment of the Airport Environment Protection Action Plan;
- amendment of the relevant Environmental Management Plan;
- amendment of an existing environmental management procedure;
- development of a new procedure;
- additional training and instruction;
- new capital works; and/or
- involvement of the AEO or other relevant government authorities.

15.15 COMMUNICATION

Successful management of the airport environment requires appropriate and workable communication on environmental issues, management measures, and achievement of environmental objectives and commitments.

This communication includes:

- communication within the AAC organisation;
- communication with airport tenants;
- communication with local, state and Federal government via the Planning Coordination Forum (PCF) meetings which occur three times a year;
- communication with other interested parties external to the airport, such as the community and regulators; and
- ongoing liaison with other airports.

Communication procedures are set out in Procedure AA2-*Communication and consultation* in the airport EMPs.

Information and training for AAC personnel

AAC will ensure that its personnel are informed about existing and emerging environmental issues by:

- conducting environmental awareness training in accordance with its Environmental Management Procedures;
- making available to AAC operational personnel the results of annual environment reports, relevant environmental reviews and any management plans; and
- involving relevant personnel in the review of existing environmental management plans and procedures, and the formulation of new procedures.

Communication with tenants and operators

Airport tenants and operators will be kept informed about new and emerging environmental issues and requirements via a variety of methods, including:

- newsletters;
- discussions during the cyclical tenancy reviews;
- discussions at the time of applications being made for new works, or lease renewal;
- information provided on the Airport web site; and
- email.

Airport Environment Management Forum

AAC meets with the AEO and the ABC on a quarterly basis, or at other times as required for individual projects.

The management forum:

- disseminates information to relevant stakeholders concerning environmental aspects of new proposals, proposed environment management plans, etc.;

- discusses current environmental issues and management practices, and their application to Archerfield Airport;
- considers and makes recommendations to AAC on future amendments to the Airport Environment Strategy and Airport Master Plan;
- assesses and makes recommendations on the EMPs;
- recommends training and awareness programs; and
- makes recommendations to AAC on preventative initiatives that could be implemented.

AAC currently provides a monthly report for the ABC and AEO on AAC environmental and building related activities.

Communication with government departments and regulatory agencies

AAC communicates regularly with DITRDCA, the AEO, Brisbane City Council, and State and Federal government. This includes liaison with stakeholders on issues arising from, or potentially impacting on the operations at the airport.

Procedures for this communication and consultation are set out in Procedure AA2-*Communication and consultation* in the airport EMPs.

15.16 COMPLAINTS

Complaints from the community or other parties (except the regulatory bodies) are recorded in the AAC *Environmental and Complaints Register*.

Any environmental complaints received concerning an operation on the site will be recorded on Form ENV-03 *Environmental complaint* and dealt with promptly. The complaint will be investigated and appropriate action taken to resolve any issues identified.

The AEO will be advised of complaints as appropriate.

A summary of environmental complaints received and actions taken will be reported to DITRDCA on an annual basis.

16 Environmental conditions and actions

16.1 OVERVIEW

Consistent with the *Airports Act* and AAC's *Environmental Management Procedures*, the airport environment is described in the following categories:

- heritage;
- flora and fauna;
- noise;
- emissions to air and ozone depleting substances;
- surface water;
- groundwater;
- soil contamination;
- hazardous materials and waste management; and
- use of natural resources and energy.

The following sections provide, for each aspect of the airport environment:

- objective(s) for environmental management;
- an overview of existing conditions;
- identification of potential impacts of on-airport activities or developments;
- proposed measures to manage those impacts;
- a summary of achievements for the term 1998-2022; and
- a summary of targets for actions for the period 2023-2031.

Actions for the planning period for the 2022 AES are summarised in the *Airport Environment Protection Action Plan*, in Appendix D.

16.2 HERITAGE

16.2.1 Objective

To identify and appropriately manage cultural heritage and built heritage values on the airport

16.2.2 Existing conditions

In 2021 AAC completed the *Archerfield Airport Heritage Management Plan (HMP)* (Australian Heritage Specialists, 2021), replacing the earlier *Cultural Heritage Assessment and Management Plan: Archerfield Airport, Brisbane* (Bonhomme Craib and Associates, 2001).

The management plan addresses both Aboriginal cultural heritage and built heritage.

Aboriginal cultural heritage

Prior to the arrival of Europeans in Australia, Aboriginal people inhabited the entirety of mainland Australia and associated islands, and their beliefs held that they had occupied this land since the beginning of time. Archaeological evidence shows that Aboriginal people have inhabited south-east Queensland for at least 20,000 years; however, it is expected that their occupation extends earlier than this date.

The airport is located in the traditional lands of people who spoke the Yuggera language (also known as Yagara or Jagera), which includes the Turrbal speakers. The Yagara language was spoken along most of the Brisbane River from the foot of the ranges to Moreton Bay, encompassing the "Sandy country" (Yerongpan) between Brisbane and Ipswich, which included the Brisbane River from the Cleveland district inland to the Dividing Range about Gatton, north to near Esk, at Ipswich, and as far afield as Cunningham's Gap in the Fassifern District and Murphy's Creek at the head of the Lockyer Creek.

It is possible the Turrbal name was also used for an alliance of Yagara speakers including the Turrbal and others south of the river as far as the Logan River. The word tarau in the Yagara language refers particularly to loose stones, and the name Taraubul is evidently derived from the geological nature of the Brisbane area, the formation of which is almost entirely of brittle schist.

At the time of convict settlement in the Moreton Bay region, it was estimated that some tens of thousands of Aboriginal peoples lived near what is now known as the Brisbane River, using their established pathways to attend gatherings and visit ceremonial sites. Huge gatherings often took place on neutral territory, acknowledged by all clans as meeting areas.

It is believed what was known as the Coorpooroo Clan (residing on the south bank of the Brisbane River), the Yerongpan Clan (residing along Oxley Creek in

the vicinity of Brown's Plains, along the Mount Lindsay Highway), and the Chepara Clan (residing in the Eight Mile Plains area).

Although the Oxley Creek area was recorded as the traditional lands of the Yerongpan Clan, ethnographic records do not elaborate on whether their boundary extended north as far as the airport.

The airport site has been highly disturbed since European occupation of the area as a result of land clearance, stock grazing, and establishment of the airport in the late 1920s to 1930s, and ongoing development of the airport and surrounding land.

The first Europeans arrived in the Acacia Ridge area in the 1820s but the area remained mostly rural well into the 20th Century.

The airport site has been highly disturbed since European occupation of the area as a result of land clearance, stock grazing, and establishment of the airport in the 1930s.

The previous HMP (Bonhomme Craib and Associates, 2001) undertook a Cultural Heritage Assessment for Aboriginal Cultural Heritage, which included searching relevant literature and registers, and also included consultation with Aboriginal groups, Native Title claimants, and other Indigenous interest groups. An archaeological field survey was also undertaken which informed the recommendations and management measures of the previous HMP.

The previous heritage assessment included a search of relevant literature, registers, and other data; identification and consultation with Aboriginal traditional owners, Native Title claimants and other indigenous interest groups; archaeological field surveys and preparation of recommendations and a Cultural Heritage Management Plan for the airport.

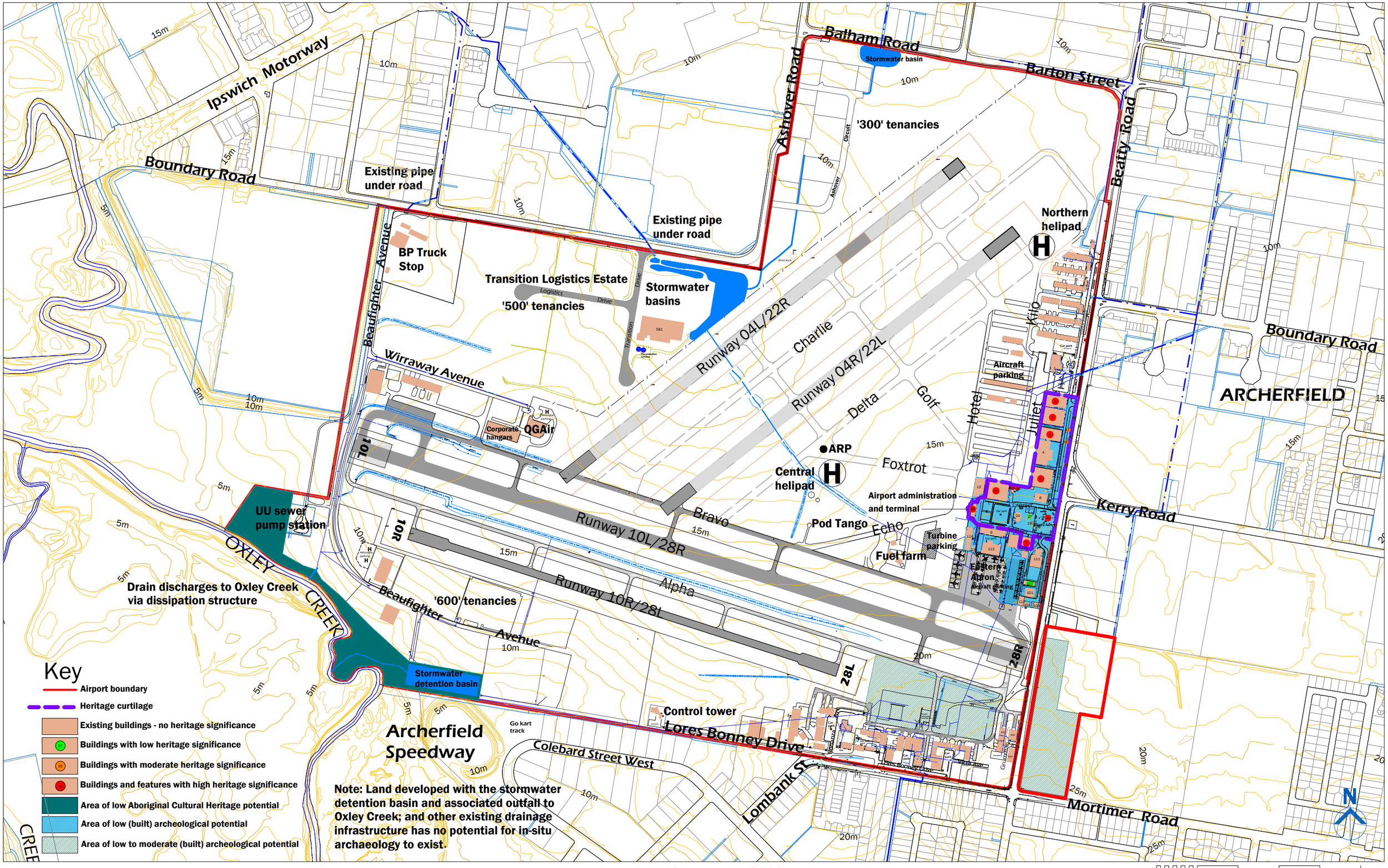
The study did not locate any sites or features of cultural heritage significance, and found that the majority of the airport land has no potential for in-situ Aboriginal Cultural Heritage.

The 2021 HMP includes an *Aboriginal Cultural Heritage Archaeological Potential Plan*, and this has been incorporated into Figure 28 *Heritage Management Plan*.

Consistent with the 2001 HMP, an area with Low Aboriginal Cultural Heritage potential was identified along Oxley Creek to the south-west corner.

It is noted that parts of this area have been subject to significant ground disturbance, including disturbance caused by the construction of the stormwater detention basin and drains in the vicinity of Oxley Creek, and these portions do not have potential for in-situ archaeology to exist.

This part of the airport is designated in the Master Plan as a conservation area.



DRAFT September 2022

Archerfield

Brisbane's Metropolitan Airport

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 28 **Heritage Management Plan**

PlannedFX Planning Environment Strategy Design

Built heritage

The airport developed in five historical phases, being *Pastoral* (1850-1928); *Development of air transport* (1929 to 1938); *World War II* (1939 to 1946); *Post World War Two* (1947-1997); and *Archerfield Airport Corporation* (1998 to present).

The airport site was originally purchased in 1855 by Thomas Grenier, publican of the Brisbane Hotel in Russell Street, South Brisbane. The land was lightly timbered alluvial soil, and some of the best grazing land in the district.

The land was subdivided into three family farms in 1865. Grenier's son, Thomas, and his wife Sarah, lived on one of the farms. Franklin Grenier occupied the farm which fronted onto Mortimer and Beatty Roads, and William Grenier occupied the farm called 'Stoneleigh' which had a frontage onto Oxley Creek. Franklin's land was the site upon which Archerfield Airport would later be established.

Thomas Grenier died in 1877 and was buried in God's Acre cemetery. The farms were sold to the Beatty family in the late 1890s and early 1900s.

God's Acre Cemetery was later passed from family trustees and then to Yeerongpilly Shire Council in 1924. In 1925 Yeerongpilly Shire was amalgamated into the Greater Brisbane City Council.

In 1927 Qantas Airways test landed a DH-61 on Franklin's Farm which was located at the western side of the airport. In 1928, a Civic Survey was undertaken which recommended the area be zoned for noxious trade. Recommendations from this survey were implemented in the following year, and the area was renamed to Archerfield by Brisbane City Council as a way to distinguish it from the surrounding residential and farming districts.

The Government initially acquired about 121 hectares (300 acres) of land in 1929. Two gravel air strips 1500 metres long were built and the airfield started operations. More land was purchased in 1930, 1936, 1942 and finally the cemetery (God's Acre) in 1946.

By the early twentieth century, the farms in the surrounding district were used for grazing, dairying, poultry, and egg production.

The name 'Archerfield' is believed to have come from a pastoral station and homestead just south of Darra, around Bunder Creek, which was owned by Michael Durack in 1881.

In the 1930s Qantas moved their operations from Eagle Farm to Archerfield after the first hangars were erected at Archerfield. Australian National Airways (ANA) and Trans Australia Airlines (TAA) both used Archerfield during the 1930s. The Queensland Aero Club, established in 1919, moved from Eagle Farm to Archerfield in 1931.

The Airport Terminal and Administration building was built in 1941 when Archerfield was the main airport in Brisbane. In the Second World War the RAAF constructed infrastructure at Archerfield to facilitate the use of the airport for

military purposes. This included the establishment of a RAAF camp (Camp Archerfield) in the Mortimer precinct.

The United States Fifth Air Force and the Netherlands East Indies Military Air Force were also stationed at Archerfield. To facilitate the needs of the wartime era, the airport boundaries were extended to include land to the west and north. This also resulted in the acquisition of neighbouring land and the closure of the section of Boundary Road which ran previously between Beatty Road and Ashover Road.

American B-17 Flying Fortresses, Kittyhawks, Dakotas and Dutch Mitchell bombers were at Archerfield during that phase. Large hangars were built on both sides of Beatty Road. There are examples of those remaining today along Kerry Road (on the eastern side of Beatty Road, off airport).

The Mustang and Vampire aircraft of the RAAF 23 Squadron were based at Archerfield until September 1955.

The RAAF had left Archerfield by the mid-1950s, and by then most of the remaining structures had been dismantled. By the mid-1970s, the Camp Archerfield buildings were removed or dismantled.

Once Eagle Farm became established as the main civilian passenger centre and the RAAF moved to Amberley, Archerfield became a thriving light aircraft centre.

Between the 1960s and 1970s, a number of upgrades and improvements were made to the runways, including surface regrading and gravelling of sections. By the 1970s the runway format comprised of three parallel landing strips (left, centre, right) for each of the three predominant wind directions.

Of the nine runways, only one (on the 10/28 alignment) was bitumen. By the early 1980s, the runway system had been reduced to two pairs of parallel runways on alignment of 10/28 and 04/22 (

The current control tower was constructed in 1973, replacing a facility on the roof level of the Airport Administration and Terminal building.

The Heritage Management Plan identifies a number of buildings and items on airport that are of historical interest and assist with interpretation of the past use and development of Archerfield.

Archerfield Airport was Brisbane's major airport from 1930 to 1947, and has been Brisbane's main general aviation airport since 1947. It played a significant role in the development of Australia's fledgling domestic and international airmail networks, and in controlling air traffic and operations during World War Two.

Significance

The HMP provides a hierarchy of significance for the buildings and other elements remaining at Archerfield from these historical phases.

It attributes an 'exceptional' grading to the continued operation of the airport, on the basis that:

> *Archerfield Airport is one of the oldest airports in Queensland that has maintained operational use since its development in the late-1920s. The continued use of Archerfield as an operating airport ensures that the historic use of the airport is maintained and enjoyed by current and future generations. The use of Archerfield Airport as, first and foremost, an operational airport, is therefore of exceptional value.* (AHS 2021 page 61)

and concludes that from a heritage perspective, the continued operation of the airport takes precedence over other considerations when determining the management of heritage values.

The HMP has found that the significant historical heritage values remaining at Archerfield Airport are confined to that part of the Beatty Precinct which contains the Airport Administration and Terminal Building, God's Acre Cemetery, and buildings associated with historical phases 1-3 of the airport.

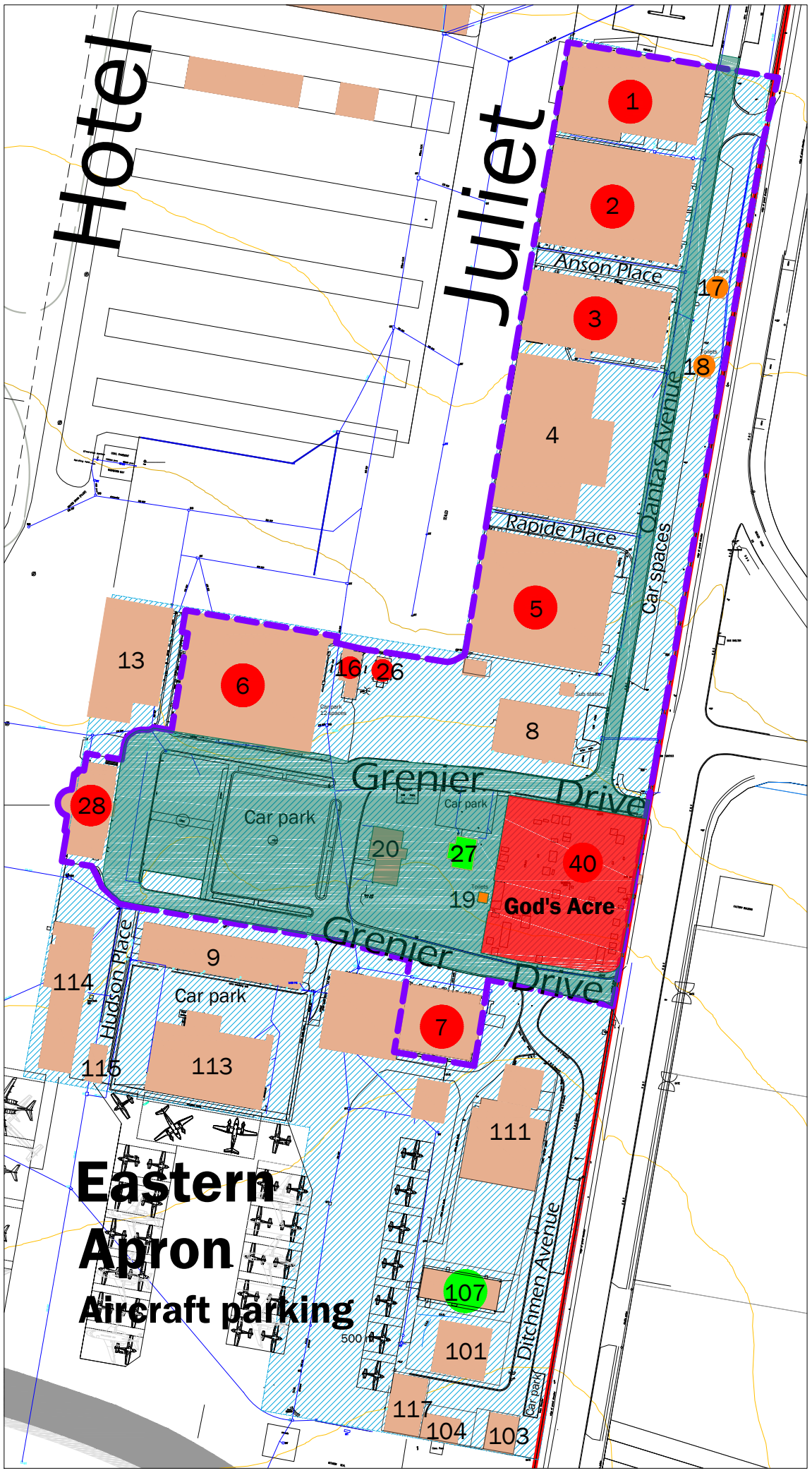
These buildings and features fall within an area described as the *Heritage Curtilage* (Figure 29).

The buildings and elements of 'high' significance are:

- Hangars 1-3
- Hangars 5 and 6;
- The original, eastern part of Hangar 7;
- Shell kiosk (building 16);
- Powerhouse (building 26)
- Airport Administration and Terminal Building (building 28); and
- God's Acre cemetery (site 40).

The HMP has also identified the following buildings and features from historical phases 2-4, but concluded that they have either 'low' or 'moderate' significance:

- Toilets (buildings 17, 18 and 19) - moderate significance (not a key element from a heritage perspective and have undergone some alteration and change over time (i.e., new fixtures, and fittings), however their original form of the structures remains interpretable and original/early timber framing remains intact);
- Building 27 (now Air Archer Café) - low significance (due its overall poor integrity, from substantial internal and external alteration over the years and relocation a number of times);
- Building 107 - low significance (poor integrity, constructed or relocated to the site in the late 1950s); and
- Auxiliary elements within the Beatty Precinct, including Qantas Avenue, Grenier Drive, Pitt Street, and the forecourts / green spaces adjoining Building 28 and God's Acre Cemetery - low significance (over the years the location of these elements, the road and path alignments, provision of parking spaces and driveways, and materials and finishes have been altered and replaced and have poor integrity.



High built heritage significance
Hangar 1
Hangar 2
Hangar 3
Hangar 5
Hangar 6
Eastern part of Building 7
Building 16
Building 26
Building 28
God's Acre Cemetery (40)

Moderate built heritage significance
Building 17 - Toilet
Building 18 - Toilet
Building 19 - Toilet

Low built heritage sigificance
Building 27 - Air Archer cafe
Building 107

No built heritage significance
All other buildings and features

Key

Heritage curtilage

Existing buildings - no heritage significance

Area with low built heritage significance

27 **Buildings with low built heritage significance**

19 **Buildings with moderate built heritage significance**

40 **Buildings and features with high heritage significance**

Area with low (built) archaeological potential

N

0 100 m

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Archerfield
Brisbane's Metropolitan Airport

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 29 **Heritage curtilage**

PlannedFX
Planning Environment Strategy Design

The HMP provides more information about each development phase; a series of aerial photographs that show the development of the airport over the years; and site cards (with photographs, plans and other explanatory information) for each of the buildings and God's Acre Cemetery.

The heritage buildings and features are shown in Figure 4 *Existing airport layout* and in Figures 21 *Beatty Precinct Structure Plan*, 28 *Heritage Management Plan* and 29 *Heritage curtilage*.

Hangar 1

Hangar 1 is the oldest building on the airport. It was initially constructed at Eagle Farm in 1927 and relocated to Archerfield in 1931.

Hangar 1 consists of three sections: the 1927 hangar and central section extension, the adjoining 1938 hangar and extension to the north (now administration area), and the skillion extension to the south (1943 extended area).

The central part of the hangar consists of the original steel trussed structure fabricated in 1927 (and relocated to Archerfield in 1931), which was extended in 1943 to the east with a timber-trussed saw-tooth roof with skylights on the south side. The earlier (western) portion of the hangar now has painted galvanised steel external wall and roof cladding, with clerestory glazing to the upper parts of the western and southern elevations, and an awning spanning across the western elevation.

Vented windows were provided in the gables of the original hangar, but only the eastern window remains intact. The hangar doors are of timber construction with steel bracing straps. A timber framed wall and sliding door constitutes the eastern wall of the extension. The north and south internal walls are lined with contemporary timber battening.

The adjoining administrative centre to the north of the original building was built in 1938 as a second hangar, and later extended to the east in 1943. The original/early extension (at the western end) consists of a rectangular, gable roof structure with louvered window on the western gable end, externally clad in corrugated iron sheeting.

The hangar has contemporary aluminium framed doors and windows, and louvered clerestory and transom windows. The later extension (at the eastern end) consists of a rectangular, skillion roof structure with exposed steel trusses, externally clad with panelled galvanised steel sheeting, with contemporary aluminium framed doors and windows, and louvered clerestory and transom windows.

Hangar 1 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

Hangar 2

Hangar 2 was constructed in 1930 by Queensland Air Navigation Ltd (QAN) which operated a Brisbane to Townsville service. It also was the departure point for New England Airways, the first successful airline to operate a Brisbane to Sydney route.

Hangar 2 consists of three sections: The original 1930 'coat hanger' style hangar along the western boundary, the central and eastern extension (most likely constructed in c.1941), and the later adjoining extensions to the south and north (both now used as workshops).

The original hangar has a gently curved roof with windows along the northern and southern boundary walls below the roof trusses. Two rows of skylights run parallel from the western boundary (airside) to the office/ workshop area in the eastern boundary.

Large sliding hangar doors with inset windows are located on the western boundary. The door tracks extend to the north and south beyond the side walls of the main hangar.

The 1941 extension is of similar design to that used in the 1943 extension to Hangar 1.

Hangar 2 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

The roof and walls of the hangar are sheeted in painted galvanised iron sheeting. Large sliding doors have been installed on the eastern elevation facing Qantas Avenue, and there is a mix of old and new windows.

Later wooden extensions to the hangar have been constructed for use of storage, workshops, and other businesses.

The original external windows of the hangar have been removed from the southern wall and/or covered over on the northern wall by the fit-outs within these extensions.

Hangar 3

Hangar 3 consists of two sections: the 1935-36 hangar and the 1943 hangar extension to the east.

The original hangar was a 'Comet' brand steel framed structure, one of few erected at Archerfield Airport. It has a gently curved steel roof, with skylights running parallel along the centre of the roof, north to south.

The 1943 extension has a timber framed saw-tooth roofed, originally built as a workshop. The extension incorporates large timber framed box gutter structures at the base of the remaining skylight glazing. Hanging lights with metal shades are set along the base of the trusses at regular intervals. Internal rooms extend along the southern side, and part of the northern side.

The building has been recently refurbished, and has been fitted out with rooms for classrooms and offices.

The external walls have been re clad and are galvanised painted steel with timber framed windows, containing either louvered glass or safety glass. A roller door is also located on the eastern wall.

The hangar was also the first 'private' hangar at Archerfield that was not associated with a government organisation or airline.

Hangar 3 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

The building has been recently refurbished, and the new contemporary internal fitout includes classrooms along the north and south sides.

Hangar 5

Hangar 5 was originally erected in 1931 for Qantas. The hangar is a significantly larger span structure than the other early hangars at Archerfield Airport.

It consists of three sections: the original 1931 'coat hanger' style building, the skillion roofed lean-to structures added to the northern and southern sides in 1934, and the c.1941 hangar extension to the east.

The hangar originally spanned 27.4 metres with 6 metre high walls along the north and south sides. Skylights run from the southern and northern walls to the middle of the roof. The roof is clad with painted galvanised steel metal. Several roller doors have been inserted into the north elevation.

The lean to extensions were added in 1934 and ran along the length of the northern and southern hangar walls. The overall width of these buildings extends to the length of the hangar door tracks, located on the western wall (airside).

Parts of these buildings were removed in 1941 when the hangar was extended. Internally the southern 'wing' runs along the length of the 1941 hangar only. The exterior of these buildings is a painted galvanised iron metal sheeting with large, framed windows running along the entire length, and windows running above the roof line. Part of the southern 'wing' has been refitted as an office and passenger waiting room with dropped ceilings and contemporary fittings. The northern 'wing' houses a business.

Hangar 5 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

The hangar was refurbished in 2016. The works included a new domed roof, replacement windows, and a drain along the southern boundary

Hangar 6

Hangar 6 was constructed in 1938-1939 for Airlines of Australia (AOA)/Australian National Airways (ANA).

It is a 'coat hanger' style with curved steel roof trusses. Two rows of large skylights run along the width of the painted galvanised steel roof from the northern boundary (airside) to the southern boundary. Modern electrical lighting, along with aircraft maintenance equipment, has been attached to the original metal trusses.

Large, galvanised steel sliding hangar doors open to airside, and a removable section has been created to allow for high-tailed aircraft to enter the hangar.

Additional rooms are located along the southern boundary of the hangar. The storage room, located in the southwest corner of the building has retained some of the original 1938-1939 fabric including wooden floorboards, wooden trusses, and early galvanised walls. The rooms located on the southern boundary of the hangar, are elevated off the main hangar. Other 1938-1939 fabric evident within the hangar include wooden doors, with a frosted glass panel, with an associated concrete step to the hangar floor located in the south-western boundary. These, however, are not in use.

The hangar was extended on its western boundary in the late 1930s to include a terminal and passenger lounge for ANA. The hangar was also extended along its eastern boundary to accommodate additional aircraft maintenance facilities by the Department of Aircraft Production in the early-1940s.

Hangar 6 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

In 2015 the building was upgraded significantly for Life Flight, with demolition of part of the building along the west side (to enable vehicle access from Grenier Drive to airside); removal of the internal fit out, wall linings and internal walls, and the installation of new (contemporary) internal wall, wall linings and amenities.

The rooms along the southern boundary have been repainted and have low dropped ceilings. Access to the refurbished areas along the southern wall is via a modern safety ramp.

Hangar 7

Hangar 7 was constructed in 1937. It was the first to be built south of God's Acre Cemetery, and is the only hangar at Archerfield that has concrete encased stanchions.

The original section of this hangar is unlike any of the earlier timber and steel constructions on the airfield as it was made with concrete encased stanchions. The wall panels are filled with concrete, bagged and finished. The roof is framed with a curved rolled steel joist and galvanised steel sheeting.

Internal alterations of the original section of the hangar included the construction of offices in 1971. Partitioned workshops and offices are located along both the north and south sides. Additional internal changes in 1982 included a wire enclosure.

In 2000 the hangar was extended to the west to accommodate the needs of Rapair Maintenance. The 2000 extension increased the building by more than 50% of its original size.

The eastern part of Hangar 7 relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

While the hangar is regarded as having 'high' significance overall, a large proportion of the hangar is a relatively modern extension to the west, and there are areas of the original hangar has been substantially modified (c.2000). These modern extensions and modifications are not of heritage value.

Shell Kiosk (building 16)

The Shell Kiosk was built in 1935 to house their new Sussex refuelling wagon, enabling fuel to be delivered to parked aircraft. Prior to this dedicated 'kiosk', a Shell underground refuelling unit was located on the airside of Hangar 5. The Kiosk was extended in 1940 to allow for storage of a longer vehicle.

The building's exterior walls are constructed of rendered brick. The roof is tiled. Wooden framed sash windows are located on the eastern, western, and northern elevations. All window frames have a decorative lintel comprising of two bricks layered vertically exposing the brick stretcher only. All windowsills are constructed of exposed brick. The same lintel pattern continues below the eaves along the eastern elevation. Another brick stretcher border is at ground level and consists of one layer only.

The Shell Logo is located above the wooden door at the northern end of the west elevation (airside). A modern roller door is located adjacent to this. The SHELL name is located on the extended northern portion of the building along the northern and western exterior. This part of the building has a decorative parapet ensuring it stands apart from the rest of the tiled roof.

Internally the building has been refurbished. The north-western room has a white and brown coffered ceiling, with the colour scheme extending to the picture rail.

This 1940 extension to the kiosk retained the original features, including the rendered brick and red roof tiles. The same brick pattern continues below the eaves along the eastern and western elevations. The brick stretcher border at ground level, found on the 1935 kiosk extends along the western and eastern elevations. A roller door is located on the south elevation.

In 2001, AAC restored the Shell Kiosk.

The Kiosk relates to phases 2 and 3 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

Toilets (buildings 17, 18 and 19)

Buildings 17, 18 and 19 are public toilets which are believed to pre-date World War Two.

Building 17 was in its current location by 1939. The building is located to the east of Hangar 2 and Hangar 3 (between Qantas Drive and Beatty Road) and has a north-south orientation. The painted brick building comprises of the main toilet block and an uncovered entrance area. The stretcher bond brick work extends around the entire exterior. The gable roof is clad with galvanised steel sheeting. These toilets are not in use.

Building 18 was in its current location by 1939. The building is located to the east of Hangar 3 (between Qantas Drive and Beatty Road) and has a north-south orientation. The painted brick building comprises of the main toilet block and a covered entrance area on the southern wall. The two gabled rooves that cover the toilet block and entrance have timber framing and fascias, and a galvanised corrugated metal roof. These toilets are not in use.

Building 19 was in its existing location in 1937. The building is to the south of Building 27 (Air Archer Café) and west of God's Acre Cemetery. The building walls and entry screen are constructed of painted galvanised steel sheeting.

The toilet blocks relate to phase 2 of the airport, have been assessed as having a 'fair' to 'good' condition score, 'moderate' heritage value, and 'moderate' integrity.

Former power house (Building 26)

The Power House was constructed in 1938 by the Civil Aviation Board to house an auxiliary generator for the airport. The generator is no longer in use.

The exterior walls are clad with asbestos-cement sheeting and weatherboard (at the base of the building), with vents installed in the weatherboard base along the east and west elevations, and smaller vents to the north and south. The building has a pitched roof with gables, and high level windows.

The internal walls and dropped ceiling are clad with asbestos-cement sheeting. The floor is painted concrete. The disused diesel generator (dated 1969) and associated equipment remain in the building.

The building relates to phase 2 of the airport, and has been assessed as having a 'poor' condition score, 'high' heritage value, and 'high' integrity.

Building 27

The building was probably constructed in the late 1930s or early 1940s and was initially utilised as the second weather office at Archerfield. During the wartime period, the building was transformed into a canteen to serve the needs of the increased number of people on the airfield.

The building was originally located on the south side of Grenier Drive and has since been relocated - once from its original position, again post-1949 when it was restumped, raised and located closer to God's Acre Cemetery and another time in the late 1990s when it was moved slightly south to allow for additional carparking off the northern leg of Grenier Drive.

The building was originally constructed of weatherboard and cement. Sometime after 1949 the verandah and stair on the north elevation was modified. Subsequently, windows in the west and north east elevations have also been altered, and more recently a number have been replaced.

The interior of the building has been gutted and refitted and is now a contemporary café.

The building relates to phase 3 of the airport, and has been assessed as having a 'good' condition score, 'low' heritage value, and 'low' integrity.

Airport Administration and Terminal Building (28)

This building dates back to the 1940s and after a period when it was in disrepair, is once again used as the administrative headquarters for the airport, and as the airport terminal. AAC owns the building.

Plans for the building were first drawn up in 1936, but construction did not commence until 1941. The terminal housed the airline companies, the Civil Aviation Department, the Flight Checking Department, the weather bureau and Airport control officials.

A control tower was previously located on the top of the building but has since been dismantled. This building housed the first meteorological, Aeradio, and air traffic control facilities in Southeast Queensland and provided necessary passenger terminal facilities for Brisbane until 1949.

In 1949 the Royal Queensland Aero Club used part of the ground floor for its offices. In the 1970s through to 1999 the parts of the building continued to be used by civil aviation administrators.

The Airport Administration functions were relocated to Building 20 under the Federal Airports Corporation and Building 28 was not used for airport administration for a number of years until Archerfield Airport Corporation bought and restored it from 2009 – 2015.

Building 28 is a substantial, three storey structure. It is a standalone, landmark building, sited at the western end of the Grenier Drive loop, and frames the western side to Archerfield Square.

It is built to the site boundaries. It has a broad ground floor, aligned north-south, and stepped upper floors. The upper floor setbacks are more substantial on the north and south elevations.

Earlier in its history, the building had an additional level which was used as the airport control tower. This was removed when the current tower was commissioned in the Beaufighter Precinct in the 1970s.

The building is of rendered brick construction, in the interwar Functionalist style of architecture (i.e., streamlined detailing, geometric form, symmetrical elevations).

The elevations of the original part of the building are symmetrical. The ground floor has been extended to the south. The design of the extension is simple, and follows the features of the original building including the brick base, rendered walls and parapet to the flat roof.

The building is constructed from brick and concrete (the majority of the walls are rendered), with metal framed windows and sections of exposed brickwork. In the west elevation (facing the taxiways and aprons), there is a prominent curved bay window, a centrally located clock and winged badges.

Exposed brickwork runs around the base of the building as a decorative feature. It forms a base to the ground floor bay windows in the west (airside) elevation, and covers the central part of the ground floor elevation and main pedestrian entry doors, facing Grenier Drive.

The building has flat roofs, with parapets at first and second floor levels, and an observation deck on the roof, secured by a metal railing and accessed via an external staircase on the north side.

Although some original window fabric has been replaced with aluminium frames, the control tower has been removed, and the building has been repainted, much of the exterior features remain largely intact.

The interior of the building however as had alteration and change on each level since the 1950s (though some original features and elements remain within, including the women's toilet facilities on the ground floor). The alterations that have occurred since the 1950s, internally and externally have low to no heritage significance.

Building 28 relates to phase 3 of the airport, and has been assessed as having a 'high' condition score, 'high' heritage value, and 'high' integrity.

God's Acre Cemetery (site 40)

God's Acre Cemetery is located on the corner of Beatty Road and Grenier Drive, at the main entry to the airport. This historic site is one of Queensland's oldest cemeteries.

The site was established by the early settler and South Brisbane Publican, Thomas Grenier on the family property after the death of Volney Grenier, their 16 year-old son. It was dedicated as a cemetery in 1859, just before Queensland became a separate state. It was established more than 160 years ago.

About 180 people including descendants of the Grenier family and other members of the local community are buried in the cemetery, with the last funeral held there in 1980.

The land was acquired by the Government in 1946. It represents an historic link to the pioneers of the district, and a valuable resource for interpreting the evolving history of the local community.

The cemetery was originally surrounded by a white picket fence, which has been replaced over the years. A hibiscus hedge was planted in 1941 replacing an earlier picket fence along the northern, western and southern boundaries and a post and top-rail fence along the Beatty Road boundary. The rest of the hedge was replanted in the 1990s.

Today the cemetery is surrounded by a white picket fence and partial hibiscus hedging. A variety of trees have grown around the site. Approximately 40 headstones have survived, and are made of marble, granite, concrete or sandstone. Some original nineteenth century cast iron and early twentieth century concrete post and steel rail grave surrounds also remain. An unidentified timber grave marker is located within the cemetery.

A small memorial arc, an interpretive sign and an obelisk with a brass plaque, with the names of everyone interred within the cemetery was erected more recently by Friends of God's Acre. Small memorial plaques have been placed close to the eastern boundary of the site.

God's Acre Cemetery relates to phase 1 of the airport, and has been assessed as having a 'good' condition score, 'high' heritage value, and 'high' integrity.

Building 107

Building 107 was established in the post war era (phase 4) by George Ditchmen, who ran a general aviation company and operated aircraft repair facilities at Archerfield in the late 1940s. Building 107 was used as a small aeronautical workshop.

It is a single storey, weatherboard clad structure that is rectangular in shape and oriented in an east to west direction.

The roof shape is predominantly a curved roof (barrel vaulted) with small skillions to each side of the curve. The roof is clad with corrugated iron.

The side elevations have large sections of casement windows and double doors which enclose the skillions. Each end wall has casement windows and double louvres on the upper wall section

The building relates to phase 4 of the airport, and has been assessed as being of low heritage value, in poor condition, with low integrity.

16.2.3 Potential impacts

The potential impacts on Aboriginal cultural heritage, and built heritage values would stem from:

- management of potential Aboriginal cultural heritage values in the area adjacent to Oxley Creek, as shown in Figure 28, *Heritage Management Plan;*
- management of any potential sub surface low to moderate (built) archaeological values in the former Camp Archerfield area in the Mortimer

Precinct; or in the area of low (built) archaeological potential in the Beatty Precinct, as shown in Figure 28, *Heritage Management Plan*;

- demolition or inappropriate alterations to buildings or features of identified high or moderate built heritage value;
- inappropriate development of land within the *heritage curtilage* and adjacent to buildings or features identified as having high or moderate built heritage value
- lack of maintenance of buildings of identified built heritage value.

16.2.4 Management

AAC will consider the findings and recommendations of the *Archerfield Airport Heritage Management Plan* (2021) (or any subsequent Heritage Management Plan approved by AAC) in any decisions relating to development of sites or features of heritage value.

AAC is sensitive to the need to retain historically significant buildings where adaptive uses can be found or their removal would otherwise contribute to the significant loss of past history.

AAC also recognises that a number of older buildings on the airport are no longer suited to modern aircraft and are inefficient in terms of their layouts for modern aviation related purposes.

In order to ensure Archerfield continues to attract aviation tenants of a high calibre and the airfield continues to regenerate, development options will be canvassed when approached by prospective aviation tenants.

Each development will be assessed on an individual basis, taking into account the tenant's requirements, the heritage value, condition and integrity of the building, its potential for adaptive reuse, refurbishment, removal or relocation. Buildings containing asbestos will be handled in accordance with the AES.

The appropriate agencies will be consulted prior to either approving works by tenants of buildings of recognised heritage value, or undertaking works that may impact unacceptably on these sites or features.

Heritage impact assessments will be undertaken for proposals that could have a significant impact on buildings or features of low built heritage value, as identified in the AES and HMP.

A heritage impact assessment will be undertaken for any proposal that has the potential to result in substantial change or significant impact on a building or feature of moderate or high Commonwealth Heritage Value, before deciding on whether to progress a proposal.

Development proposals for sites within the Heritage Curtilage that do not have significant heritage values will be assessed to ensure that the proposal is sited and designed so that it does not impact significantly on buildings of heritage significance.

God's Acre Cemetery

AAC will continue to support the work of Friends of God's Acre which is engaged in conservation of the cemetery.

Aboriginal Cultural Heritage potential

Before sub surface works or clearing are undertaken in the area adjacent to Oxley Creek, identified in the *Heritage Management Plan* (Figure 28) as being of 'low Aboriginal Cultural Heritage potential', personnel will be provided with a cultural heritage induction, to give awareness of potential values in the area, and confirm the 'stop work' procedure to be implemented in the event of incidental finds of items that might hold Aboriginal Cultural Heritage significance during the project activities.

Potential historic (built) archaeological values

Before sub surface works are undertaken in an area identified in the *Heritage Management Plan* (Figure 28) as having built archaeological potential, personnel will be provided with a heritage induction, to give awareness of potential values in the area, and confirm the 'stop work' procedure to be implemented in the event of incidental finds of items that might hold heritage significance during the project activities.

16.2.5 Achievements 1998-2022

Completion of an updated *Archerfield Airport Heritage Management Plan* (Australian Heritage Specialists, 2021), replacing the original *Cultural Heritage Assessment and Management Plan* prepared in 2001.

AAC has over the past 24 years spent more than $3.8M on heritage conservation initiatives at Archerfield. This includes purchase of the historic Administration and Terminal Building (28), restoration of the former Shell Building, refurbishment of the ground, first and second levels of the Administration and Terminal Building in 2009 and 2015, and repainting the exterior walls and waterproofing the external surfaces.

The upper floors of the building are now used for airport administration and offices, and the ground floor is once again used as a terminal.

In 2022 AAC established the Airport History Room in building 28. The History Room is the home to an evolving archive of records and memorabilia about the history of the airport, and interpretative materials. It is the base for preparation of interpretative displays, and a place for research to be undertaken.

AAC has supported the conservation work being undertaken by Friends of God's Acre, through donations and contribution of labour and provision of specialised equipment for maintenance works.

AAC has encouraged enjoyment and pride in the airport by opening the Administration and Terminal building and surrounds to the public on Brisbane

Open House days where they can view information about the history of the airport, and memorabilia from the past.

16.2.6 Implementation targets for the 2022 AES

Continue to support the conservation work by Friends of God's Acre and seek the cooperation of all levels of government and the broader community in improving the site and promoting it to the local community and visitors.

Apply appropriate protocols for assessment of proposals for buildings or features of heritage value, and resolution of decisions by AAC on action to be taken, generally in accordance with the recommendations in the HMP.

Prior to undertaking sub-surface works in an area of Aboriginal Cultural Heritage potential or built archaeological potential (as shown in Figure 28, *Heritage Management Plan*); provide personnel with a heritage induction, to give awareness of potential values in the area, and confirm the 'stop work' procedure to be implemented in the event of incidental finds of items.

Consult with the relevant agencies prior to either approving works by tenants of buildings of high heritage value as determined in the HMP, or undertaking works that may impact on these sites or features.

Maintain the Airport History Room, and facilitate access by people with an interest in the history of the airport to the resources that are held.

16.3 FLORA AND FAUNA

16.3.1 Objectives

To identify and conserve significant indigenous flora and fauna.

16.3.2 Existing conditions

History

The land that the airport occupies was cleared by early settlers and used for farming.

By 1931, with the exception of the Oxley Creek environs the area was an open grassed paddock and since then, the airport has been managed mainly as a grassed area, with extensive mowing and removal of large trees where these infringe on obstacle clearance standards.

Trees and shrubs grow along the banks and flood area of Oxley Creek, and there is planted vegetation around the built up areas of the airport.

Oxley Creek context

Oxley Creek Catchment has an area of approximately 260 square kilometres. The creek is about 50 kilometres long and flows from the Flinders Peak Region to the Brisbane River.

The airport is in the lower to middle reaches of the creek catchment, approximately 500m upstream of the confluence of the Oxley and Blunder Creeks. This part of the Oxley Creek catchment is urbanised, and the land along the creek is used for housing, industry, open space, and sand extraction.

The Creek is part of a regional open space and habitat corridor that runs through the southern part of Brisbane to the Brisbane River.

In the general locality (and upstream of) the airport there are some remnant paperbark (*Melaleuca nodosa*) wetlands which before European settlement would have covered most low-lying areas of the catchment and provided habitat for waterbirds, frogs, and fish.

Riverine or vine forest was the dominant vegetation on creek banks, and 'dry' rainforest grew on the well-drained floodplains. In poorer soil, a mixture of Eucalypt and wetland species grew.

In recent years Brisbane City Council has secured the land on the south side of Oxley Creek immediately to the south of the airport (extending upstream of the confluence of Oxley and Blunder Creeks) and has designated this as an 'environmental protection area' in the Brisbane City Plan. This action was taken following an unsuccessful proposal to undertake sand extraction in that area.

The south western corner of the airport has a frontage of approximately 550 metres to Oxley Creek.

Along the creek banks there is riparian vegetation that makes a contribution to the landscape and ecological values of the creek. The balance of the area is largely clear of vegetation. It is managed by grazing and occasionally slashing, consistent with current practices on many other properties along this part of the creek.

The area accommodates also important stormwater management works, including a major stormwater detention basin, and drainage outfalls.

With this in mind, the land has been designated as a 'creek buffer' in Figure 2 *Master Plan vision*, and zoned *Conservation* in Figure 19 *Airport land use zoning*.

Flora and fauna significance

In May 1997 the (then) Queensland Environmental Protection Agency (Stewart 1997) was commissioned by the Airport to advise on flora and fauna values. The study included site surveys and literature reviews. It concentrated on the Oxley Creek as, due to past and current use, and the relationship of the creek to the broader regional environment, this area was assessed to have the highest probability of containing flora and/or fauna of regional or higher significance.

The study found that:

- the vegetation of the Creek and surrounding area is considerably disturbed with numerous plant and weed species and substantial clearing of native vegetation;
- a total of 45 vertebrate species are known to occur along Oxley Creek. None are vulnerable (Schedule 3) or rare (Schedule 4) species under the *Queensland Nature Conservation (Wildlife) Regulations* 1994;
- two species of migratory birds or birds in danger of extinction, Little Curlew (*Numenius minutus*) and Sharp-tailed Sandpiper (*Calidris acuminata*) are species closely related to the short grass and wetlands of the area;
- a further species of international significance, the Rainbow Bee-eater (*Merops ornatus*) may breed in the sandy banks of the Creek;
- no mammals, frogs or reptiles were recorded along Oxley Creek during the survey; and
- no threatened or endangered species of fauna were identified.

It concluded that the creek provides essential habitat for some native fauna, but is unlikely to support populations of regional significance. Three species of local significance and three of international significance are recorded along or in close proximity to the creek.

The (then) Queensland Department of Natural Resources and Water advised in June 1999 that:

- a more comprehensive survey would probably identify frogs, reptiles or mammals in Oxley Creek;
- migratory waders *Numenius minutus* and *Calidris acuminata* are listed by DNR as being in danger of extinction. This occurrence is very transient as waders prefer coastal habitat. Waders are most likely to visit the creek during times of drought. This requires further investigation;
- historically there is a high possibility of the rare frog species *Litoria brevipalmata* occurring within the Oxley Creek catchment. If it occurs within the area its presence would be significant
- the vegetation description suggests that the existing habitat is unsuitable for any scheduled species other than *Litoria brevipalmata*; and
- conservation of remnant fauna should be concentrated along Oxley Creek.

It is noted that some species including the Little Curlew, Sharp-tailed Sandpiper, and the Rainbow Bee-eater are currently listed under the EPBC Act.

Any actions that interfere with listed threatened species, listed migratory species, or listed marine species may require a permit under the Act. This will require further investigation and assessment if there are any proposals that could include actions that might impact on species listed under the Act.

Pest animals

The airport has not been subject to excessive pest animal populations, with the exception of Fire Ants which were confirmed in 2001 and have been subject to a rigorous ongoing control program since then.

16.3.3 Potential impacts

The main potential impacts of airport activities on flora and fauna values in Oxley Creek are:

- altered surface water flow patterns (including peak flows) entering the Creek;
- water quality decline, in particular through sedimentation; lowering of pH; changes in temperature; excess nutrient loads; and pollution by hydrocarbons or metals;
- pollution from heavy industry and waste processing;
- weed and pest animal invasion; and
- vegetation removal or other changes to habitat in proximity to the creek.

16.3.4 Management of impacts

The riparian zone of Oxley Creek is likely to provide habitat for frogs, reptiles, birds and mammals, and these values have the potential to improve over time, particularly following habitat restoration by Brisbane City Council in 2014 on the land on the south side of Oxley Creek.

Identification of appropriate management measures for the creek frontage will also be addressed prior to any significant new development of land next to Oxley Creek.

AAC will continue to facilitate the Fire Ant control measures being implemented by the State government.

The use of mainly indigenous plants in landscaping works will provide some additional habitat opportunities, and reduced reliance on watering when compared with exotic species.

Bird and bat strike is a significant issue for airport management, so measures need to be implemented to manage bird and bat habitat to minimise the risk of this occurring.

16.3.5 Achievements 1998-2022

AAC has maintained the airport grounds through regular mowing, control of weeds and maintenance of landscaped features on the site.

AAC has also worked with tenants to ensure that facilities on airport are established and maintained in a tidy manner.

Fire Ant control by helicopter and motorcycle broadcasting has since 2001 been undertaken by the State government which is proactive and conducts regular inspections of the airport grounds, and carries out spraying as required.

Extensive stormwater management works were implemented in 2003-2004 in association with developments in the Beaufighter Avenue/Mortimer Road, and Central precincts. These works have replaced eroding open drains with a system of pipes, grassed swales and detention facilities. The new drainage system protects water quality and manages the peak quantity of water discharged to Oxley Creek. It has the potential to improve the habitat values of the creek over time.

Additional stormwater drainage works have been implemented with the construction of piped drainage under Runway 04L/22R and construction of a detention basin complex to the north-west of this. Extensive maintenance and restoration of stormwater drains on the southern and eastern side of the airport was also carried out in 2015/2016

New landscaping work was carried out alongside the Grenier Drive entrance road and along Ditchmen Avenue in 2012. This included replacing existing inappropriate vegetation with Tuckeroos. The areas around Hangars 5 and 6, and Buildings 8 and 9 have also been landscaped with appropriate plants. The newly landscaped areas have successfully improved the presentation of these areas.

16.3.6 Implementation targets for the 2022 AES

The area next to Oxley Creek serves as a buffer between the aviation activities on the airport, and the Oxley Creek, and is also developed with significant drainage infrastructure that assists with managing the stormwater discharges from the airport to the creek.

With the adoption by BCC of the Oxley Creek Transformation Master Plan (2018), BCC has made significant commitments to implement initiatives for managing the natural values of Oxley Creek, including the section in proximity to the airport.

AAC will continue to liaise with BCC where there are opportunities to work together to manage more efficiently and cost effectively the creekside land.

AAC will also consider options for introducing best practice grazing (including limiting stock access to the creek banks) if this can be implemented as part of a coordinated management strategy involving BCC and other landholders/land managers along this part of Oxley Creek.

AAC will consider any feasible proposals that assist in improving current grazing practices or implementing alternative management techniques, where these are consistent with the sustainable management of the airport land and the initiatives for other land included in the project.

Prior to any significant development of land in the area that is not currently intensively managed through slashing or grazing, appropriate flora and fauna investigations will be undertaken to confirm the existence of any significant species. If these are identified, appropriate nature conservation measures will be implemented.

AAC will continue to facilitate the Fire Ant control measures being implemented by the State government.

Landscaping will be provided in new developments to improve the presentation of the site. AAC will encourage the planting of mainly indigenous species on airport property.

A list of suitable plants for landscaping on AAC property has been developed and will be used when assessing landscaping works by AAC or tenants.

All developments on the airport, including flood mitigation works and site landscaping, will be carefully planned to ensure that they do not increase bird or bat populations at the airport, due to the hazard to aircraft of bird or bat strike.

AAC will also work with BCC to ensure that wildlife strike aspects are taken into account in the design implementation and ongoing maintenance of wetlands and other restoration works being undertaken on neighbouring land in the creek corridor, consistent with the NASF guidelines for the wildlife buffer zones shown in Figure 13, and discussed in Chapter 9.

16.4 AIR QUALITY AND OZONE DEPLETING SUBSTANCES

16.4.1 Objective

To minimise where practicable emissions to air from AAC and tenant related activities (except emissions from aircraft)

16.4.2 Existing conditions

The airport is located in the industrial area of Archerfield/Rocklea, which is home to general manufacturing, and service industries; transport and related activities. The area is bisected by a network of arterial and main roads including Ipswich Motorway, Granard Road, Beaudesert Road, Boundary Road, Ashover Road, Kerry Road, Mortimer Road and King Avenue/Learoyd Road.

There are no significant sources of greenhouse gas emissions on the airport. No tenants or AAC operations produce significant discharges to the atmosphere.

A detailed audit of the airport in 1993/94 identified all equipment containing ozone depleting gasses. Since then, all BFC fire extinguishers have been removed (in December 1997), and there are no remaining air conditioners filled with Freon.

Archerfield Airport has no dedicated spray painting operations. A number of tenant operations include spray paint booths as part of their maintenance activities and some tenants undertake minor painting, but as an ancillary activity.

16.4.3 Potential impacts

Experience at similar general aviation airports in Australia shows that a relatively small quantity of pollutants are released during the running of aircraft engines while on the ground for testing and maintenance procedures.

The majority of emissions are solvent vapours released either during the spray painting of aircraft bodies and components, or through cleaning of equipment.

Emissions would be similar to other spray painting and mechanical repairs establishments in the surrounding industrial areas. Due to the mix of uses and the extensive open space on airport the density of these uses is significantly lower than nearby industrial areas.

16.4.4 Management of impacts

Painting and cleaning

The main potential impact on the air environment from painting or cleaning operations is odour from solvents.

AAC has replaced its solvent based line marking paints with water based alternatives to reduce the emission of solvent vapour from this source.

For new tenancies, any potentially odorous activities will be identified and managed so that there is no unacceptable impact on neighbouring areas. If painting is proposed, consideration will be given to the acceptable scale of the activity, and any mitigation measures that will be required.

Measures for achieving appropriate odour control will be determined prior to the establishment of the tenancy, in accordance with the EMPs.

In the case of existing tenancies, if any odour emission issues arise, these will be addressed through direct negotiation (if a complaint is received) or via the periodic environmental review process.

All tenants that have trade waste discharges are required by AAC to obtain from UU appropriate trade waste disposal approvals, and maintain their operations in accordance with these requirements.

Ozone depleting substances (ODS)

AAC facilities

AAC operations will be managed to ensure that all discharges meet the requirements of relevant legislation being the *Airport (Environment Protection)*

Regulations 1997, the *Ozone Protection Act 1989* and the *National Environmental Protection Measure (NEPM) for Ambient Air Quality*.

Regular environmental reviews will identify any ozone depleting substances on site, and their phase out will be arranged.

The progressive phase out and replacement of any remaining AAC equipment containing ozone depleting gasses will also occur as replacement equipment becomes commercially available and older equipment is replaced.

Tenants

The regular environmental reviews of tenant facilities will identify any halon fire extinguishers (sometimes used in aircraft), and if any are found in service for non-essential use, the tenant will be advised to remove the equipment from service as required by State and Federal legislation.

As the presence of halon extinguishers will be readily identifiable during the regular environmental reviews, additional monitoring is not considered necessary.

16.4.5 Achievements 1998-2022

AAC has collated existing data on airshed quality from the QLD DES Rocklea monitoring site.

AAC has produced an inventory of existing airport tenants and users, as an indicative baseline for possible future air quality assessments.

Water based line marking paints are now used by AAC to reduce the emission of solvent vapour from this source.

AAC has collaborated with a number of industrial tenants located at the Beaufighter Precinct concerning dust control and suppression measures each of which have contributed to tangible improvements.

16.4.6 Implementation targets for the 2022 AES

Continue to identify the presence of ODSs in AAC and tenant reviews, and negotiate appropriate management (including decommissioning and removal wherever feasible).

Continue to advise tenants of their responsibility to obtain relevant environmental approvals in accordance with the Airports Act and Regulations.

16.5 SURFACE WATER

16.5.1 Objective

To minimise the impact of airport operations on surface water quality

16.5.2 Existing conditions

Catchment context

The airport is located in the middle to lower reaches of the Oxley Creek catchment, just upstream of the confluence of Oxley Creek and Blunder Creek. Oxley Creek discharges ultimately to Brisbane River.

The airport location relative to the Brisbane River is shown diagrammatically in Figure 1. The location of Oxley and Blunder Creeks, and the alignments of the main drainage outfalls from the airport to these waterways is shown in Figure 3 *Airport context*.

The middle and lower reaches of the Oxley Creek catchment are highly urbanised.

The *1999 Oxley Creek Catchment Management Plan* identified the following issues for the catchment overall:

- water quality within the creek system exceeds standards across all water quality parameters (suspended solids, total nitrogen, total phosphorus, faecal coliforms) in the lower urbanised part of the catchment. There was however some evidence of improvements since 1988;
- the primary causes of the existing degradation are point sources such as the Inala Sewage Treatment Plant, minor point sources (sewer overflows) and the non-point sources of sand extraction, stormwater run-off and land development, including areas using septic treatment systems;
- Brisbane River and Moreton Bay, the receiving waters of Oxley Creek, are experiencing excess sediments, nutrients and faecal coliforms, giving rise to problems of sea grass loss and algal blooms;
- further development in the upper reaches of the catchment could exacerbate flooding;
- riparian vegetation including wetlands has some critical areas requiring management and buffering; and
- soil erosion is an issue along the watercourses.

Stormwater management on the airport site needs to have regard to these broader contextual issues, and in particular to avoid causing detriment to water quality or flood conditions in Oxley Creek.

Site sub catchments

Surface water runoff from the airport falls generally into one of six main sub catchments and these are shown diagrammatically in Figure 17.

The boundaries of the sub catchments are indicative only, as there are few clearly defined watersheds across the site. In some cases, drainage infrastructure has been constructed such that stormwater flows will cross between the sub catchments as currently shown.

All surface water from the airport is discharged ultimately to Oxley Creek, and from there flows to Brisbane River and Moreton Bay. The northern and eastern part of the airport drains to Stable Swamp Creek (to the north) which enters Oxley Creek on the north side of the Rocklea industrial area.

1: Southern sub catchment

This sub catchment includes:

- grassed areas;
- sealed Runway 10R/28L and taxiways;
- hangars and businesses;
- open storage; and
- the control tower.

This stormwater drains to the main detention basin that is located between the tenancies on the south side of Beaufighter Avenue and the neighbouring Archerfield Speedway. The detention basin then discharges to Oxley Creek.

A small part of this sub catchment drains south under Mortimer Road, and through the neighbouring industrial area to Oxley Creek. This drain collects water from the eastern end of Lores Bonney Drive, and from the adjacent tenancies.

2: Beaufighter Avenue and Wirraway Avenue sub catchment

This sub catchment includes:

- the western end of the 10L/28R runway and associated taxiways;
- the western part of the Transition Estate and the other '500' tenancies on Boundary Road;
- development along Wirraway Avenue; and
- development along Beaufighter Avenue, generally west and north of sites 674 and 678.

Stormwater in this sub catchment is conveyed via a piped drainage system along Beaufighter Avenue to a concrete end wall and dissipation structure prior to entering Oxley Creek.

3: BP Truckstop

Stormwater from the BP Truck Stop site on the corner of Beaufighter Avenue and Boundary Road discharges to a drain at Boundary Road that runs north through the Rocklea industrial area before joining to the main drain to Oxley Creek.

BP has in place a Forecourt Pollution Control System (FPCS) which discharges into the stormwater system. The FPCS captures customer fuel spills occurring within the under canopy fuel dispensing area and treats captured oily liquids

via an oil-water separator. Monitoring of stormwater downslope of the separator is undertaken quarterly.

4: Central sub catchment

This sub catchment comprises the grassed areas associated with the 04/22 runway complex, most of the northern half of the 10L/28R runway, the fuel farms, and aircraft parking positions; the majority of the Transition Estate and the southern part of the Ashover precinct.

The majority of storm water in this sub catchment is collected by an on airport drainage system that falls north-west under the 04/22 runways to the detention and water quality basins in the Transition Estate, and then passes under Boundary Road.

The three bio-filtration and detention basins constructed adjacent to Boundary Road manage peak flows from Transition Estate, and from upstream sub catchments in the central part of the airport. A Gross Pollutant Trap constructed between Basin 4 and the corner of Boundary Road and Transition Drive further improves the quality of water from the central drainage sub catchment which includes parts of the Boundary, Wirraway, Ashover, Runway and Beatty precincts. The outfall from the basins runs through the neighbouring industrial area, under the Ipswich Motorway to Oxley Creek. Water in the Oxley Creek then enters the Brisbane River.

5: Eastern and northern sub catchment

The fifth catchment on airport is the eastern and northern area fronting Beatty Road, Barton Street and Balham Road.

The stormwater run-off from this area enters the Brisbane City Council drains that run parallel with Beatty Road, and a drain running north from Balham Road. At three locations along Beatty Road there are drains under the road that take stormwater to the east and then north to Stable Swamp Creek.

Underground stormwater drains in this area of the airport were examined by CCTV camera and significant repair/upgrade work was carried out to improve drainage in 2015/2016.

This part of the sub catchment is reasonably intensively developed, with extensive impervious areas (building roofs, roads, sealed aircraft parking, and manoeuvring areas).

The balance of the sub catchment has at present less impervious surfaces. Stormwater from the north-west corner of the airport (at the corner of Balham Road and Ashover Road) is conveyed to basin no. 7 constructed by AAC before being discharged to the existing piped drains to the north of the airport, and then to Stable Swamp Creek.

6: Beatty Road South

The vacant airport land on the north-east corner of Beatty Road and Mortimer Road drains to the north-east. It discharges to the main drainage line that runs parallel to Beatty Road, to Stable Swamp Creek, and then to Oxley Creek.

Stormwater quality

AAC undertakes stormwater quality analysis on an annual basis. The sampling is undertaken at the main drainage discharge points, and at locations within the airport drainage network. During drought periods, there was insufficient water at some of the sampling locations resulting in incomplete historical data.

Notwithstanding this, the program has provided useful information about site conditions.

The latest assessment completed by Environmental Management & Remediation Pty Ltd found no concentrations that posed a serious risk to the aquatic health of the primary receiving waters, being Oxley Creek.

Generally, results were within the overall trend that has been established since annual assessments commenced in 2009.

Metal results were similar to previous monitoring events with no significant changes identified that would indicate a potential risk to Oxley Creek.

Historically, total nitrogen, total phosphorous and ammonia have exceeded the AEPR guidelines. This was probably a result of fertilisers, applied to grassed areas by ground staff, being washed into the stormwater system following rain events. As surface water sampling only occurs after significant rainfall, exceedances of the AEPR guidelines for nutrients will likely continue.

There were no volatile or semi-volatile petroleum hydrocarbons ($>C_9$), or aromatic hydrocarbons (BTEX) detected in the water samples. This was generally consistent with previous monitoring events.

The current guideline values for PFAS in surface waters relate only to PFOA and PFOS. PFOA concentrations were not above the referenced guidelines for 95% or 99% protection of freshwater or marine water species. PFOS concentrations all exceeded the 99% protection level for marine and freshwater species.

At present there is no marine water guideline for PFOS or PFOA. The guidelines used are interim guidelines that are the same value as the freshwater guidelines. It is expected that a more reliable marine water guideline will be established in the future.

The risk level posed by PFOS was considered low as a comparison with a DES study on background PFOS concentrations in Oxley Creek.

16.5.3 Potential impacts

The potential impacts of stormwater drainage are:

- export of suspended solids off site leading to increased sedimentation of Stable Swamp Creek or Oxley Creek;
- transport of chemical pollutants, trace elements, or nutrients into these creeks and ultimately into Brisbane River;
- increased peak flood flows discharged to Oxley Creek, with the potential for exacerbating flooding in the creek; and
- increased peak flows into the existing main drainage system through the Rocklea industrial area, and through Archerfield, north to Stable Swamp Creek.

Onsite conditions also have the potential to affect water quality including from acid sulphate soils, current and historic airport operations including legacy firefighting and training activities, and imported fill.

16.5.4 Management of impacts

AAC is vigilant regarding stormwater management on the airport.

The following EMPs have specific relevance to managing the water aspects of the airport environment:

- Procedure AA1-*Environmental assessment of new tenancy or lease renewal*;
- Procedure AA4-*Minor spill response;*
- Procedure AA6-*Tenant environmental reviews;*
- Procedure AA7-*End of lease tenant environmental review;* and
- Procedure AA8-*Assessment of environmental effects of new works*.

For example, the procedure for new construction requires an assessment of the potential impacts of construction on all aspects of the airport environment (including stormwater drainage), and where impacts are possible, the preparation of a construction phase Site Environmental Management Plan (CEMP).

Washing of aircraft in the wash-down bay (with triple interceptor) is strongly encouraged. However, if aircraft owners wish to wash their aircraft in its parking position to remove general dirt and insects this is allowed provided biodegradable detergents are used.

If there is a risk that oil or grease will be discharged onto the ground, then the wash-down bay must be used. If there is regular washing of aircraft in parking positions, then AAC reserves the right to request soil testing to monitor for any contamination. This monitoring would be at the aircraft owners' expense.

AAC maintains a spill containment trailer that can be mobilised at short notice to deal with fuel and chemical spills from its own operations and for incidents involving aircraft.

Where appropriate, tenants are also required to have spill procedures for their operations. In addition to providing appropriately bunded storage facilities, tenants are also required to maintain stocks of spill control equipment where their operations have the potential to release environmentally hazardous materials to the environment.

16.5.5 Achievements 1998-2022

Stormwater management measures (addressing water quality and peak discharge volumes) have been incorporated where appropriate into new tenancies and into the airport development precincts.

The former open drainage line through the western part of the Boundary precinct and the west of the Beaufighter precinct (which was subject to significant scouring) has been piped, and silt traps and dissipation structures installed to moderate peak flows and manage water quality prior to discharge to the Oxley Creek.

A significant stormwater detention basin (basin 8) was constructed in the Beaufighter precinct in 1997/8, treating stormwater prior to its discharge to the Oxley Creek. The stockpile areas in the Alex Fraser Group Recycling facility drain to a sedimentation basin prior to discharge to the on-airport stormwater system.

Swale drains have been constructed along the southern boundary of the Beaufighter precinct, to direct flows from Runway 28L/10R and development in the Beaufighter precinct to the sediment basin.

Three additional bio-filtration and detention basins (Basins 3, 4 and 5) were constructed along the Boundary Road boundary of the airport in 2014 to manage peak flows from future works at Transition Estate. A Gross Pollutant Trap was constructed between Basin 4 and Boundary Road/Transition Drive to further improve the quality of water from Boundary Road and Transition Drive. These basins convey water to Brisbane City Council drainage systems,

Small rock landscaping has been introduced to localised sections of open drains showing evidence of minor soil erosion.

The drainage line under the 04/22 runways has been piped and extended into Basin 3 at the north-western end, to moderate peak flows prior to discharge to the district drainage network.

Rainwater tanks have been included in new developments, including the corporate hangars on Wirraway Avenue, the QGAir facility on Wirraway Avenue, the office and warehouse development on Beaufighter Avenue, and the warehouse and office at Site 111, the Hangar 4 redevelopment, the new logistics facility at site 581, and the Hangar 13 development.

Open earth drains have been periodically slashed and weeds removed.

The aircraft wash down bay is identified with signage. Washdown water passes through a triple interceptor prior to discharge from the site.

Surface water quality monitoring has been undertaken at various locations in the drainage network on an annual basis.

The stormwater management system for the 10L/28R runway, the associated primary taxiways and the Eastern Apron has been upgraded as part of Project AIM.

Stormwater management in the Ashover precinct has been improved with the construction of new drains for the 300 sites, the construction of Ashover Circuit, and construction of a new stormwater basin (Basin 7) at the northern end of the precinct. The new basin now manages stormwater runoff from the northern sub catchment, prior to discharge to the external BCC drainage network which runs north to Stable Swamp Creek.

16.5.6 Implementation targets for the 2022 AES

The annual surface water quality assessments will continue at spot locations, on a sub catchment basis and will be analysed for contaminants.

Where elevated concentrations are found, AAC will adopt a risk based approach to undertaking further sampling, and where appropriate will undertake further investigations within the relevant sub catchment area(s) to identify the likely cause of reduced water quality. It will work with the AEO to identify the source and improve water quality wherever feasible.

If necessary, the surface water monitoring program will be revised to assist with identifying the distribution or source of pollutants.

Water sensitive design measures, including the use of rainwater tanks for capture and reuse of stormwater flows will be incorporated into new developments wherever feasible.

16.6 GROUNDWATER

16.6.1 Objective

To minimise the impact of airport operations on groundwater quality

16.6.2 Existing conditions

Groundwater at the airport has been assessed on an annual basis since 1993.

A network of groundwater monitoring wells has been developed and expanded with the installation of six new wells since 2012.

The new wells were installed to ensure all on-airport areas are covered as well as to test contamination coming onto airport from off-site locations. All operational wells are shown in Figure 30 *Groundwater*.

The most recent assessment, the *2022 Ground Water Monitoring Event for Archerfield Airport* was completed by Environmental Management & Remediation Pty Ltd in June 2022. The findings are set out in the 'groundwater quality' section below.

Regional hydrogeology

The *2013 Annual Ground Water Monitoring Report* by Simmonds & Bristow included information about the existing site conditions as follows:

The site geology consists of Tertiary semi consolidated sediments and basalt (Sunnybank Formation). It is estimated that the basalt dips to the west. Underlying this is the Triassic-Jurassic Woogaroo Sub-group which is comprised of sandstone, siltstone, shale and conglomerate. These rocks are less permeable to groundwater flows than basalt. Alluvial deposits occur along Oxley Creek (southwest boundary) and Stable Swamp Creek further north.

Potentiometric contours have indicated that the groundwater flow across the site is in a northwest direction. This was supported by the findings of the 2014 groundwater monitoring report.

Therefore, the receiving environment for groundwater would be the section of Oxley Creek along the airport's south west boundary and in areas immediately adjacent to the creek.

Groundwater from the site would also tend to flow further northwest toward the junction of Oxley Creek and Stable Swamp Creek. The indicative flow direction is shown in Figure 29.

Beneficial uses of groundwater

Groundwater resources in the area are not used for potable supply. Various tenancies in the Beaufighter precinct use water for dust suppression.

Underground Storage Tanks

Although AAC generally discourages tenants from installing USTs, a 55,000 litre UST for storage of Adblue, was approved and installed at Site 450 in 2014.

Adblue is used in heavy vehicle exhaust systems to reduce harmful emissions. New Euro 4 and Euro 5 equipped vehicles incorporate an additional separate tank for the product which is injected into the vehicle's exhaust manifold.

Adblue is a water based solution containing 35% urea. It is not a hazardous or dangerous chemical under the NOHSC Criteria and ADG Code.

The USTs on site are required for current uses and are summarised below.

Table 8: Underground Storage Tanks

Site	Tank Reference	Fuel type	Capacity (litres)
AAC Compound (Site 652)	AAC-HMR_009	Diesel	350
BP Truckstop (Site 450)	AAC-HMR_010	Diesel	110,000

Site	Tank Reference	Fuel type	Capacity (litres)
	AAC-HMR_011	Diesel	110,000
	AAC-HMR_012	ULT-98	30,000
	AAC-HMR_013	ULP-91	50,000
	AAC-HMR_014	PULP-95	30,000
	AAC-HMR_015	LPG	30,000
	AAC-HMR_016	Adblue	20,000
AvFuel Services (Site 123)	AAC-HMR_001	Avgas	55,000
	AAC-HMR_002	Jet A1	55,000
AvFuel Services (Site 120)	AAC-HMR_006	Avgas	53,000

Above Ground Storage Tanks

The following above ground storage tanks are in use at Archerfield.

Table 9: Above Ground Storage Tanks

.Site	Tank reference	Fuel type	Capacity (litres)
AvFuel Services (120)	AAC-HMR_005	AVGAS	90,000
Queensland Government Air (EMG Helicopter) (412)	AAC-HMR_018	JET A1	50,000
CNA - Complete Needs Australia (665)	AAC-HMR_019	Diesel	13,000
Bondwoods Transport (AUST) (508)	AAC-HMR_020	Diesel	13,000
DDS Transport Solutions (311)	AAC-HMR_021	Diesel	10,000

BP Spill

In 2006 one of the diesel tanks at the BP Truckstop on the corner of Boundary Road and Beaufighter Avenue was found to be leaking.

The tank was removed and a soil and groundwater remediation and monitoring program was implemented by BP, under the supervision of an independent environmental assessor.

The tanks and related infrastructure were replaced with double walled tanks and pipes.

The groundwater and soil remediation works were undertaken in accordance with an Environmental Management Plan. The remediation phase has been completed, and the site is now under a monitoring and reporting program.

Groundwater quality

Groundwater quality is assessed on an annual basis, with AAC records going back to 1993. The 1993 study found that BTEX, TPH and metal concentrations were below method detection limits in all monitoring wells.

In 2003-4 AAC reviewed its water quality monitoring program and serviced and upgraded monitoring wells.

In 2013, following a review of the monitoring program, four new bores were installed along the area bounded by Mortimer Road, Wirraway Avenue and lower Beaufighter Avenue. The new bores were sited to provide more comprehensive analysis of off-site and on-site activities including near MW4 and MW9. The review also found that off-site activities behind MW2, MW3 and MW6 had an impact on the levels of heavy metals in the groundwater.

The subsequent groundwater monitoring report, in October 2016, concluded that, overall, the groundwater concentrations reported do not indicate that a serious risk exists to the water quality or aquatic ecosystem of Oxley Creek.

The most recent sampling and analysis was completed in June 2022 by Environmental Management & Remediation Pty Ltd. The purpose of the annual assessment is to identify whether there have been changes in groundwater quality that may present a potential risk to human health or the environment.

The 2022 assessment concluded the inferred groundwater flow direction was broadly towards the west-northwest, generally consistent with the findings of previous assessments. The flow direction however in the northwest and western portions of the site appeared to follow a south to southwest trend (see Figure 30 *Groundwater*).

Changes in groundwater quality and general findings have been summarised as follows:

- The dissolved heavy metal concentrations were mostly below the laboratory detection limits or AEPR guidelines except for minor exceedances of the freshwater guidelines for copper and/or zinc (MW2, MW4 and MW9) and one exceedance of the marine water guidelines for copper and nickel (MW10).
- As the marine water exceedances were minor, it was concluded that there were no potential risks to the receiving environment, that being the aquatic health of Oxley Creek.
- Consistent with the previous annual assessments, TPH/TRH/BTEXN concentrations were either not detected or well below AEPR guidelines for samples MW4, MW5, MW14, MW15 and MW16. As a result, fuel storage (past or present) was not affecting the aquatic health of Oxley Creek.
- PFAS compounds were detected and all PFOA concentrations were below NEMP 2.0 freshwater and marine guidelines for 95% and 99% species protection.
- All PFOS concentrations exceeded the NEMP 2.0 freshwater and marine water guidelines for 99% species protection, and there were some exceedances of the 95% species protection level.

The assessment concluded that future monitoring should determine if the PFAS concentrations are trending upwards and if this trend is having an adverse impact on the downgradient groundwater quality.

At present the risk profile has not changed from past annual monitoring assessments based on the current groundwater analytical results.

AAC continues to monitor sampling results and works closely with the AEO to attempt to identify the source/s of any contamination.

16.6.3 Potential impacts

Impacts in groundwater from activities on airport could arise from:

- leaking USTs and related infrastructure (pumps, pipes etc.);
- inappropriate storage, handling or disposal of hazardous materials;
- buried waste (including from past occupiers);
- potential PFAS contamination as a result of legacy AFFF storage, use and training activities from past government agencies (e.g. ARF);
- spills from the UU sewer pump station off Beaufighter Avenue (and near Oxley Creek); or
- material spills.

Onsite conditions also have the potential to affect water quality including acid sulphate soils, current and historic airport operations including legacy firefighting and training activities using foams containing PFAS, and imported fill.

Similarly, there is the potential for areas surrounding the airport to impact on the groundwater conditions on airport. The past and present industrial uses, wartime developments, and the former quarry on the north side of Mortimer Road (next to the south-east corner of the airport) are all potential sources. These need to be considered in any groundwater monitoring program.

Ipswich Motorway
Boundary Road
Existing pipe under road
Existing pipe under road
Balham Road
Barton Street
Ashover Road
Beatty Road
Stormwater basin
'300' tenancies
Northern helipad
Boundary Road
ARCHERFIELD
BP Truck Stop
Transition Logistics Estate
Logistics Drive
Transition Drive
Beaufighter Avenue
Wirraway Avenue
'500' tenancies
Stormwater basins
Runway 04L/22R
Runway 04R/22L
Charlie
Delta
Golf
Hotel
Juliet
Aircraft parking
Aircraft washdown bay
ARP
Central helipad
Foxtrot
Airport administration and terminal
Kerry Road
God's Acre cemetery
Grenier Drive (main entry)
Corporate hangars
QGAir
UU sewer pump station
OXLEY CREEK
Drain discharges to Oxley Creek via dissipation structure
Runway 10L/28R
Runway 10R/28L
Bravo
Alpha
Echo
Fuel farm
Turbine parking
Eastern Apron
Beaufighter Avenue
'600' tenancies
Stormwater detention basin
Archerfield Speedway
Go kart track
Colebard Street West
Control tower
Lores Bonney Drive
Lombank St
Disused quarry
Mortimer Road
Key
Inferred groundwater flow direction
Groundwater contours (to AHD)
Groundwater monitoring well
Airport boundary
Note: Past groundwater monitoring wells 1 (2010), 11 and 12 (2017) are disused and are not shown
0
500 m
N

Archerfield
Brisbane's Metropolitan Airport

Archerfield Airport preliminary draft Master Plan 2022-2042

Figure 30 **Groundwater**

DRAFT September 2022

PlannedFX
Planning Environment Strategy Design

16.6.4 Management of impacts

AAC has in place a number of measures to protect groundwater from contamination by airport activities.

These include:

- annual monitoring of groundwater via the network of bores on site;
- provision of spill containment equipment for deployment by AAC in areas under its direct management;
- decommissioning of old and redundant USTs;
- discouraging tenants from installing new USTs if bunded above ground storage is feasible;
- requirements in the EMPs for new tenants to address hazardous materials storage and containment in their plans; and
- consideration of spill containment during tenant reviews.

Any new UST and related infrastructure must be installed and operated in accordance with industry standards.

Existing tanks and related pipe and pumping infrastructure require ongoing monitoring to confirm the integrity of the fuel storage system. Any losses from the system need to be identified early so that remedial action can be taken.

This needs to be addressed by each tenant, and AAC needs to confirm during the environmental reviews of each tenancy with USTs that monitoring is being undertaken.

16.6.5 Achievements 1998-2022

The network of groundwater sampling bores has been periodically serviced and was upgraded in 2003.

A new groundwater monitoring well was established in the area between Beaufighter Avenue and Oxley Creek for the 2010 monitoring cycle. This provides baseline data about groundwater conditions and movement in the south-western part of the airport.

An additional 6 new wells were installed along the Mortimer Road boundary and Beaufighter Avenue boundary between 2012 and 2015 and two unserviceable wells in other locations were repaired.

The annual groundwater monitoring program by AAC has continued throughout the planning period and now provides data for the past 20 years. The scope of ground water monitoring has also been increased to sample for a larger range of contaminants of potential concern (CoPC).

Annual integrity testing is carried out on AAC's underground diesel tank. No loss of product has been identified.

All tenants with USTs have in place gain/loss monitoring systems.

Various USTs and infrastructure have been removed as part of redevelopments at sites 108, 109 and 121 (which included the decommissioning and removal of a 55KL jet A1 fuel tank and a 55Kl avgas tank).

16.6.6 Implementation targets for the 2022 AES

The annual groundwater monitoring and analysis program will continue. Attention will be given to determine the likely reasons for any elevated levels. The monitoring program will be updated if required.

AAC will during the cyclical environmental reviews follow up tenants with USTs to ensure that monitoring for losses is being undertaken.

AAC will continue to undertake annual integrity testing of the diesel UST in the AAC grounds maintenance compound. If any discrepancy is identified immediate remedial action will be taken. These actions will be in accordance with Australian Standard AS4897–2008, *The Design, Installation and Operation of Underground Petroleum Storage Systems*.

Any new USTs will be subject to either an integrity testing plan or an appropriate gain/loss monitoring system. The testing, monitoring, and reporting regime will be in accordance with the relevant industry standards.

16.7 SOIL

16.7.1 Objectives

To minimise the potential for soil contamination to occur

To continue to manage contaminated sites in accordance with relevant legislation

16.7.2 Existing conditions

Soil conditions at the airport consist of silty and sandy clays that overlay weathered basalt. The basalt becomes less weathered as depth increases.

Soil contamination

In July 1993, a *Background Investigation Report* (Otek 1993) identified several potential areas of subsurface contamination associated with the airport. These included a number of USTs, scrap yards, a battery recycling operation, maintenance shops, painting facilities, and drum storage areas.

A subsequent more detailed environmental investigation (Otek September 1993) found that Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX) and Total Petroleum Hydrocarbon (TPH) levels were below method detection limits in all borings tested. Metal analyses indicated elevated levels of lead in proximity to the former battery recycling facility. The study concluded that detectable concentrations of nickel, copper, cadmium, and chromium were consistent with background concentrations and were within applicable criteria.

Analyses for volatiles, pesticides, and PCBs showed no concentrations above the method detection limits.

The study found no adverse impact on the environment from the USTs.

The minimal localised soil contamination detected in the Otek environmental reviews was well within the current acceptable environmental standards.

Otek, in 1993 also undertook soil sampling in the open unlined drains along the northern and western perimeters of the site. The analysis of the samples concluded that there was no detectable soil contamination.

In 2006 BP advised that one of the diesel tanks at the BP Truckstop on the corner of Boundary Road and Beaufighter Avenue was found to be leaking. BP subsequently replaced all tanks and implemented a soil and groundwater remediation and monitoring program, under the supervision of an independent environmental assessor. This is subject to ongoing assessment and reporting.

An independent environmental assessor has overseen the containment of pollution and the implementation of the remediation works, and the monitoring program which is still in place. Contaminated soil was excavated to the maximum feasible extent (some allowance had to be made for protection of canopy foundations and other structural elements). The soil was farmed on adjacent land on the airport for approximately six months, before being disposed of off-site.

The USTs on the site have been replaced with double walled tanks and related infrastructure.

Environment Site Assessments (ESA) are completed across the airport and the results of which are entered into the Airport Environment Site Register. Such investigation can be triggered as a result of a new building activity, lease commencing, lease end requirement and/or incidents. Soil sampling is a primary function of the ESA.

Soil samples have also been tested from Site 635, at Site 668 (formerly occupied by Australian Paving Services (APS) and at Building 9. In all instances, no contamination above accepted levels was detected.

Acid sulfate soils

As part of the Brisbane City Plan, Brisbane City Council has collated information about acid sulfate soils in the Council area, and made available a potential and actual acid sulfate soils overlay which identifies land subject to the requirements of the State Planning Policy (SPP).

The Department of Environment describes acid sulfate soil as follows:

> *Acid sulfate soil is the common name for soils that contain metal sulfides. In an undisturbed and waterlogged state, these soils may pose no or low risk. However, when disturbed or exposed to oxygen, acid sulfate soils undergo a chemical reaction known as oxidation. Oxidation produces sulfuric acid which has led to these soils being called acid sulfate soils.*

In Brisbane, acid sulfate soils are generally found in land at or below 5m Australian Height Datum (AHD) and in Holocene sediments (organic-rich sediments and silts). They are usually associated with coastal lowlands and estuarine flood plains. Under natural conditions the soils are usually located below the water table.

The only parts of the airport at or below the 5 metre contour are found in the south-west corner of the site, next to Oxley Creek. The 5 metre contour is shown in the *Existing conditions* drawing.

The Department of Environment notes that acid sulfate soils may affect the following key environmental values or uses, and provides examples of how these values are affected:

Table 10: Potential effect of acid sulfate soils

Environmental values	Impact or potential impact
Aquatic ecosystems	Aquatic ecosystems may be affected by changes to water and soil quality. This can lead to negative effects on the species and ecological communities that depend on this ecosystem.
Primary industries	Irrigation water may be acidic and/or have high concentrations of metals, which may affect stock drinking water, infrastructure and machinery, and crop growth and yield. Commercial fisheries may be affected by poor water quality that may cause fish kills or disease, and affect human consumption of aquatic foods.
Recreation and aesthetics	An environment may not be able to be used or enjoyed to the same extent for recreational purposes due to factors including acidic water, odours, loss of aesthetic appeal, loss of fishing amenity and acid-tolerant mosquitoes increasing in number.
Drinking water	Water quality may be unsafe for human consumption due to factors such as pH change, changes to the concentration of dissolved metals or load of suspended metals and tastes and odours.
Industrial water	Water may not be suitable for certain industrial purposes. For example, acidified water may corrode metals in the manufacturing process.
Cultural and spiritual values	Areas of cultural and spiritual significance may be degraded or may not be able to be used for cultural, recreational or consumptive uses. Significant fish and plants may be affected by acidic water, metal contamination or oxygen depletion in water.

16.7.3 Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

There is potential for a range of manufactured chemicals known as per- and polyfluoroalkyl substances (PFAS), in particular perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), to exist on airport.

PFAS are non-biodegradable chemicals that are highly persistent in the environment, can bio-accumulate, and can be harmful to animals and human health.

PFAS have wide ranging applications and their presence in an airport context is often linked to historical fire-fighting incidents, training, maintenance of equipment, industrial uses, storage or other activities.

There is also the potential for PFAS in soil or groundwater to originate from activities on adjacent or nearby land, including from use in industrial, commercial and residential applications,

To gain an understanding of the background levels of PFAS on airport and coming from off-site areas. Testing undertaken to date has shown no concentrations have been high enough to pose a risk.

AAC has taken proactive measures to not only identify, monitor and mitigate PFAS contamination, but also to actively ensure all airport tenants and contractors are aware of the potential for, and risks associated with PFAS contamination.

Maintenance, new building activities and developments are required to comply relevant national guidelines when appropriate, e.g., the PFAS National Environmental Management Plan Version 2.0 – January 2020 (Heads of EPA Australia and New Zealand).

AAC is committed to working with environmental experts, as well as relevant local, state and federal government agencies, to address and responsibly manage any potential PFAS concerns.

Periodic ground and surface water monitoring events have incorporated PFAS testing into the scope with the aim of identifying, tracking and monitoring PFAS datapoints and trends throughout the airport.

Additionally, PFAS soil screening may be completed as part of any new building activity (where indicated from a risk assessment). Results of all PFAS testing completed on airport are added to the PFAS datapoint tracking tool.

AAC will continue to liaise with DITRDCA on this issue, to ensure that the most appropriate actions are implemented for environmental assessment, ongoing monitoring or for remediation of any contamination that might be identified.

16.7.4 Potential impacts

The main potential impacts of airport activities are:

- soil contamination from USTs;
- soil contamination from chemical spills;
- soil contamination from oil leaks from aircraft and motor vehicles; and
- soil contamination from PFAS.

16.7.5 Management of potential impacts

AAC will continue to review activities on airport to identify any potential sources of soil contamination. For AAC operations and areas under AAC management, this will occur on an ongoing basis. Individual tenancies will be assessed during the tenant reviews, and at the end of lease assessment.

Underground storage tanks and businesses associated with the storage and use of potential contaminants (including waste materials) will attract specific surveillance.

All new AAC leases have the requirement for tenants to monitor for contamination, and where issues arise, to remediate. These activities will in each case be addressed through a tenant *Site Environmental Management Plan* for construction and/or operation phases (as applicable).

Tenants will be required to provide AAC with independent validation of site clean-up works.

AAC will encourage tenants to decommission underground tanks, regardless of condition, due to the significant potential liability associated with the ageing underground tanks. In the future, all storage tanks installed on the site (apart from fuel services) will wherever possible be above ground with appropriate containment, including bunding.

Bunding of hazardous materials storage equipment (containers and conveying infrastructure) will be required where there is the potential for spills.

AAC's PFAS Desktop Assessment will be applied to any development or works involving minor excavation. Additional PFAS sampling and analysis will be completed as part of the Environment Site Assessment (ESA) process required for more extensive building activities.

Any future development in the lower lying land in the south-west corner of the airport, immediately adjacent to Oxley Creek, needs to take into account the possibility of acid sulfate soils. This should be addressed in an assessment to be undertaken as part of the formulation of any development proposals for the land at or below the 5 metre (AHD) contour.

In addition, if excavation of more than 100m^3 is proposed at or below 5m AHD on land with a natural surface level of between 5m and 20m AHD, appropriate consideration will be given to acid sulfate soils in the design and construction of the works.

16.7.6 Achievements 1998-2022

The former battery recycling site has been remediated by removal of the contaminated soil and reclamation with clean fill in 1994. The remediation is described in report reference B94C094/C1 prepared by OTEK Australia Pty Ltd dated 14 December 1994.

The former Airport Rescue and Fire Training Area was closed and remediated in 1994. The site remediation is also described in the 14 December 1994 report by OTEK Australia Pty Ltd.

The former underground storage tanks used by Mobil, Air BP and Shell were decommissioned and the sites remediated over the period 1997 to 2000. More recently, USTs associated with site 121 in the fuel farm have been removed and the sites remediated.

he assessments indicate that only small contamination issues such as oil leaks from aircraft and motor vehicles exist on the airport.

16.7.7 Implementation targets for the 2022 AES

All tenants operating or proposing to install underground storage tanks will be required to institute programs to ensure tanks do not leak. Tenants will be required to carry out annual testing of tanks, or alternatively implement a continual monitoring program as detailed in the Australian Institute of Petroleum's Code of Practice, *'CP4 1998, Design, Installation and Operation of Underground Petroleum Storage Systems'*.

Bunding will be required for all new storage facilities for hazardous materials.

AAC will continue to apply EMPs (and in particular the *End of lease tenant environmental review*) to ensure that leaseholds are appropriately managed and any contamination is identified and rectified.

An assessment for acid sulphate soils will be undertaken before any development requiring ground excavation in the south-west corner of the airport, at or below the 5 metre contour.

16.8 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

16.8.1 Objectives

To minimise the use of hazardous materials, where practicable

To minimise the quantities of waste produced where practicable

To maintain current information on hazardous materials on the airport

To ensure that wastes are properly handled, stored, transported, and disposed of

To encourage recycling of materials

16.8.2 Existing conditions

Effluent

The airport is serviced with reticulated sewer and is connected to the metropolitan network (including for trade waste).

UU has a sewer pump station in the south-west corner of the airport, adjacent to Oxley Creek, and a second low pressure sewer system services Transition Estate and the Ashover precinct, discharging to the sewer network in Ashover Road.

Hazardous materials

AACs objective is to minimise where practicable the use of hazardous materials and to ensure that where hazardous materials are used, their impact on the surrounding environment is kept to a minimum.

Hazardous materials are stored in a variety of locations at the airport, and while some storage locations are fairly well designed, others require some improvement. There is also a need for constant vigilance to ensure that the storage methods and signage are appropriate to the types of product storage currently in use. Australian Standards will apply.

Potentially contaminated building materials

A comprehensive survey of buildings conducted in 1994/1995 and reviewed regularly since then has found evidence of some in situ building materials likely to contain asbestos. These materials are mostly in sheet 'fibro cement' form and have been used most commonly for cladding some buildings, and roofing in particular. There are also incidences of asbestos in other building materials including flooring.

The survey found that this is confined to older existing structures, and, provided it is not disturbed from its current state, is regarded as not presenting any hazard.

The survey also identified a limited amount of asbestos fibre used in pipe lagging.

In 2003 Asbestos Audits Queensland Pty Ltd completed its *Asbestos Materials Report and Register for Archerfield Airport.* The report addressed all AAC buildings on the airport and included an inventory of asbestos, and recommendations for its management.

In 2006 the asbestos register was upgraded to include a risk assessment and Management Plan, which was updated as developments occurred, buildings were demolished, and buildings came into the ownership of AAC.

In 2012 Asbestos Audits Queensland Pty Ltd prepared a new *Asbestos Management Plan and Register for Archerfield Airport* – which incorporated new buildings and recognised 2011 codes of practice.

This register and management plan was again updated and reissued in 2015 and 2022. AAC updates the plan as asbestos is removed.

Recycling

AAC's objective is to comply with current waste management standards and to minimise waste. It will ensure that it adopts the most recent recycling practices.

Where possible during tenant reviews opportunities to minimise waste or utilise waste from other activities on site will be identified.

16.8.3 Potential impacts

The potential impacts of ground based airport activities include discharge of hazardous materials or waste to soil, surface or groundwater; and litter pollution of the site or neighbouring land.

16.8.4 Management of impacts

AAC maintains a current register of asbestos in its buildings. Asbestos material is marked with hazard stickers, and the asbestos register is made available to tenants and contractors undertaking work on the airport.

The asbestos register is updated as works are undertaken, and any changes are included in the annual environment report to the Commonwealth.

If buildings containing asbestos are to be demolished or modified, this work will be undertaken in accordance with an Environmental Management Procedure applying precautions stipulated under the *Work Health & Safety Act* and regulations, applicable codes of practice and other relevant guidelines

Monitoring of the quality and quantity of waste materials on site, and the actions taken to recycle this material will continue as part of environmental reviews of tenant operations.

Ongoing reviews will ensure environmental issues previously identified are addressed appropriately, as well as identifying any new issues related to the management and disposal of hazardous materials and wastes.

Environmental reviews will include an inspection of storage facilities and work practices, identification of unacceptably large waste stockpiles and a review of tenant records concerning the proper disposal of industrial wastes.

The regular environmental reviews will be supplemented by the on-going vigilance of all AAC staff. AAC personnel noticing unacceptable work practices, such as improper storage or leaking wastes will report their findings to AAC management for action.

The Archerfield EMPs require prospective new tenants (tenants or renewing their lease) to provide details of the materials they propose to store and use on site, and how these will be managed.

16.8.5 Achievements 1998-2022

AAC has conducted regular inspections of tenancies to identify all materials storage and handling, waste management and disposal and other aspects of the activities conducted in the tenancy that could potentially impact on the safety of the airport, or on the environment.

Brisbane City Council regularly tests sewage entering its treatment system from the airport. Any non-conformances are reported to AAC and the tenant (if applicable) for action.

In May 2003 Asbestos Audits Queensland Pty Ltd completed its *Asbestos Materials Report and Register for Archerfield Airport.* The register was maintained until 2006 when a risk assessment and management plan was formulated.

This guided decisions on the ongoing management of asbestos until 2012 when the *Asbestos Management Plan and Register for Archerfield Airport* was implemented. The 2012 plan is subject to ongoing review and updating as works are completed.

A significant quantity of asbestos was removed between 2012 and 2015 as a result of extensive repair and upgrade works to various hangars and buildings.

AAC has compiled a register of chemical and hazardous materials for its grounds maintenance and works activities (2009).

The HAZMAT Register is provided to the Department annually as part of the Airport Environmental Reporting (AER) process and contains details of all large volumes of fuel stored on airport.

16.8.6 Implementation targets for the 2022 AES

Maintain the AAC asbestos register, management plan and risk assessments.

Review AAC operations and expand the Hazardous Materials Register as required.

Develop a Hazardous Materials Register for relevant tenancies and prepare baseline snapshot.

Monitor hazardous materials on airport through tenant reviews and record quantities of hazardous materials in a Hazardous Materials Register.

Ensure that tenants have hazardous materials licences where applicable and have a HAZMAP located at the site entrance.

Monitor the quality and quantity of waste materials on the airport.

Comply with regulations relating to the management of PFAS on airport.

16.9 USE OF NATURAL RESOURCES AND ENERGY

16.9.1 Objectives

To identify opportunities for cost effective reductions in consumption of natural resources and energy

To encourage efficient use of water and energy

To encourage the use of alternative sources of energy and water

To reduce airport use of non-renewable resources

16.9.2 Existing conditions

Archerfield Airport is supplied with reticulated water, mains power and other utility services from the Brisbane urban infrastructure networks.

Water

Sustainable Solutions International Pty Ltd prepared a *Water Efficiency Management Plan* (WEMP) for Archerfield Airport in April 2008.

The WEMP included a detailed assessment of past and existing water usage, and identified opportunities for more efficient use of water. It was prepared at a time when SEQ was in a protracted drought, and State government implemented legislation to conserve water use. The Government subsequently abolished The Queensland Water Commission and its permanent water conservation measures on 1 January 2013.

AAC encourages tenants to minimise use of potable water and to recycle water wherever possible.

Alex Fraser Group uses water from its detention basins for dust control, Veolia Environmental Services (Australia) Pty Ltd uses recycled water for dust management, and Q-Crete recycle water from its triple interceptor for its operations.

Water tanks are installed with new developments. Tenants are discouraged from hosing out hangars.

Electricity

The airport is connected to the Brisbane grid. Electricity is supplied directly to the airport substations, and the airport distributes the electricity to tenants on serviced sites.

AAC has also installed a 86kW solar electricity generation system on Building 111 in the Beatty Precinct, providing renewable energy.

16.9.3 Potential impacts

Efficient use of energy and water at Archerfield will become increasingly important in coming years.

Water scarcity is expected to be more prevalent due to climate change and increasing demand for water to serve population and economic growth in South East Queensland.

Energy usage will also become a significant issue, from the perspectives of cost, and carbon emissions in particular.

AAC is committed to securing the economic sustainability of the airport, and is working hard to attract additional enterprises and people to the site.

It recognises that water and energy consumption overall could increase due to:

- occupation of vacant leasehold premises, or connection of existing sites to the reticulated network;
- increased staff and visitor numbers on airport;
- construction activity; and/or
- increased production by tenants (particularly those with higher water usage requirements).

With growth in airport activity, the focus will be on achieving best practice efficiencies in water and energy use in new enterprises; use of renewable energy (including on site generation where feasible); and encouraging progressive improvements in existing AAC operations and tenancies.

Management of impacts

The management of water use will include:

- ongoing monitoring of consumption by AAC and tenants using the AAC metered supply, to identify opportunities for reductions;
- harvesting and reuse of water on site as a replacement (or supplement) for potable water (for suitable aviation and non aviation purposes); and
- use of water efficient fittings and appliances in AAC facilities and new developments.

As part of on-going improvements, the following water reduction initiatives have been identified:

- sub metering of tenancies with high water usage, to identify and address unaccounted for uses and possible leakages;
- use of water efficient fixtures with a minimum of 3 WELS stars at the airport; and
- a leak identification and monitoring program including repair of known leakages.

In addition, drought tolerant indigenous vegetation will be used where possible in new landscaping, to minimise the need for irrigation.

Improvements in recent years includes new landscaping work alongside the Grenier Drive entrance road and along Ditchmen Avenue in 2012. This included replacing existing undesirable vegetation with Tuckeroos. Upgraded and new landscaping has been provided at Hangars 4, 5, & 6; Building 8; Building 9; Building 581 (in Transition); and Building 676, and a number of other sites in the Beaufighter precinct.

A staged reduction in energy usage will be pursued, through initiatives such as:

- specification of energy efficient appliances and fittings (including lighting) in refurbishments and new developments;
- achievement of energy efficiency in the siting, design, building fabric and specification of services for new development by AAC and tenants;

- at the planning stage of new developments investigating opportunities for on site generation of electricity from renewable sources; and
- encouraging tenants during environmental reviews to implement reduction strategies.

Improved efficiency in water and energy use will be pursued in new airport and commercial development.

AAC has implemented such measures in the refurbishment of the Airport Terminal and Administration building, the corporate hangars, the new warehouse on site 676 on Beaufighter Avenue, Building 581, Hangar 13, and the Aviall building on Ditchmen Avenue.

16.9.4 Achievements 1998-2022

Use of natural resources and energy has been considered in tenant assessments.

The airport has secured a number of recycling operations. These businesses promote the reuse of resources and reduce the energy used in producing these raw materials.

Water efficiency initiatives by AAC since the 2005/06 baseline year include:

- upgrade of all taps, showers, toilets and urinals at AAC owned buildings to more efficient fittings;
- installation of rainwater tanks; and
- upgrading of water meters.

Rainwater tanks have been installed for the Q G Air complex (for washdown for operational purposes), the corporate hangar development on Wirraway Avenue, the warehouse and office on Beaufighter Avenue, and the Aviall warehouse/office building on Ditchmen Avenue.

Energy and water efficiency were key considerations in the refurbishment of the administrative offices in the historic Administration and Terminal building. Since completion, AAC energy consumption relating to administration and related activities has been reduced by almost half saving around 5000 kg of greenhouse gas emissions per annum.

Since commissioning the 86.6KW solar array at the Beatty Precinct, AAC has produced energy that, had it not been from a renewable process, would have emitted the equivalent of 170,863kg of Carbon Dioxide (CO_2).

Energy requirements for airport operations have also been addressed. AAC has as part of Project AIM installed a new runway/taxiway lighting control system and replaced runway and taxiway lighting with LEDs which will result in on going energy savings.

16.9.5 Implementation targets for the 2022 AES

Use of natural resources and energy in AAC operations, and by tenants will continue to be monitored through the cyclical environmental review process.

Tenants will be encouraged to reduce natural resource and energy use, and initiatives will be recorded and reflected in management plans (as appropriate).

AAC will consider energy efficiency, water efficiency, and sustainable design when designing and specifying future projects or reviewing proposals by new or existing tenants.

Opportunities for increasing the uptake of on site generation of electricity from renewable sources will continue to be investigated, and implemented where feasible.

16.10 NOISE

16.10.1 Objectives

To minimise within the scope of AAC's responsibility ground based noise disturbance associated with airport operations.

16.10.2 Existing conditions

Aircraft noise

The major contributor of noise and vibration associated with airport operations is aircraft in flight.

Aircraft noise is modelled and mapped for each airport as an Australian Noise Exposure Forecast (ANEF). The ANEF shows the expected noise effects on land around the airport. It is reviewed and endorsed by Airservices Australia.

AAC in 2022 prepared an updated ANEF for Archerfield Airport that illustrates the noise modelled to 2042 (Figure 13). This ANEF was developed in consultation with Airservices Australia, BCC and the State Government and was endorsed in August 2022.

The Archerfield Airport ANEF identifies forecasted noise impacts. It takes into account current standards, the projected aircraft movement patterns, likely aircraft mix, and maximum aircraft volumes forecast for the Airport Master Plan.

The approved ANEF provides useful information for planning decisions for land around the airport. It identifies areas that are not suitable for noise sensitive uses unless mitigating measures are implemented in the siting, design and construction of any buildings.

BCC and the State Government take the ANEF into account when they prepare the planning scheme for land around the airport, or consider development proposals near the airport.

Under the *Civil Aviation Act 1988* noise due to aircraft in flight, landing, taking off or taxiing is under the direct control of Airservices Australia (AsA). It is exempted from being the responsibility of the ALC under the *Airports (Environment Protection) Regulations 1997*.

Any complaints received concerning aircraft movements are immediately directed to the responsible officer at Airservices Australia.

The Airservices Noise Enquiry Service can be contacted by phone on 1800 802 584 (freecall), by mail at PO Box 211, Mascot NSW 1460, or by email at: *community.relations@airservicesaustralia.com*

AAC works with AsA and aircraft operators on any aspects that involve AAC's areas of responsibility or interest.

AAC developed a Fly Neighbourly program in 2015, and this was reviewed and updated in 2021. AAC also works with AsA and aircraft operators to minimise the impact of aircraft on the community and on any aspects that involve AAC's areas of responsibility or interest.

Aircraft noise management is addressed in quarterly coordination meetings between AAC and AsA, and also on an as needed basis if an issue arises.

Other noise sources

Noise emitted from an airport (other than discussed above) may be caused by activities including:

- ground running of aircraft;
- noise from aircraft parked near buildings;
- operation of engine test cells;
- construction operations;
- noise from non-aviation activities ; and
- road traffic movements.

These sound sources may affect the area immediately surrounding the airport.

16.10.3 Management of impacts

Noise levels due to ground based aircraft engine activities are minimised by restricting ground running and testing procedures to appropriate locations on the airport, distant from sensitive land uses.

Helicopters are directed to pod Tango for run up, jet engine testing is only allowed at the run up bay to Runway 10L, and truck based dynamic engine test beds are directed to pod Tango.

Evening or night time activities of this nature rarely occur.

AAC investigates any complaint due to the ground running of aircraft. The approach to this is addressed in the EMPs, and is subject to monitoring for effectiveness, and periodic review.

AAC considers that its noise control strategy described above is suitable, and that noise monitoring or changes in noise management practices does not appear to be warranted.

If current circumstances change significantly then the need for monitoring and further controls will be reassessed and actions taken. Changes that would trigger further assessment could include proposals to commence a new 'noisy' process, or a significant increase in the frequency of ground based engine operation.

With respect to other potential noise sources, there has not been a significant history of complaints. Since 1999, all new leases have included clauses relating to the environmental management obligations on tenants.

Under the current environmental management regime, tenants assessed as having the potential to generate nuisance noise are required to develop and implement a *Site Environmental Management Plan* (operations) to address potential off site impacts. Implementation of these management plans will be subject to ongoing monitoring and periodic review by the AEO.

16.10.4 Achievements 1998-2022

Over the past 24 years all complaints relating to noise from ground running of aircraft have been addressed in accordance with AAC procedures.

Noise emissions from tenancies on airport are managed in accordance with the EMPs and any environmental management plan in place for their operation.

The Fly Neighbourly program, first introduced in 2015 has been has been recently reviewed and the updated program is being implemented.

Aircraft noise management is addressed in regular coordination meetings between AAC and AsA, and as required to address specific issues that arise on an operational basis.

16.10.5 Implementation targets for the 2022 AES

Continue with noise management initiatives adopted by AAC which include:

- working with AsA at the planning stage of significant new aviation projects, to identify any potential aircraft noise implications and any mitigation measures;
- working with AsA to identify and implement solutions to any noise complaints that relate to AAC's areas of direct responsibility as airport operator;

- monitoring and reviewing the use of airport facilities (including ground running and testing procedures) with the view to minimising the noise impact on the community;
- ensuring if a significant issue arises that appropriate consultation processes are put in place to resolve the issue;
- working with Brisbane City Council and other relevant government agencies to ensure that structures built near the airport have taken noise into consideration and that off airport land is appropriately zoned; and
- assisting neighbouring landholders with advice on anticipated noise from airport operations, and options for minimising potential noise impacts on the use or development of their land.

Ensure that all AAC personnel know of the noise complaints process (as set out in the EMPs). Advise new employees during initial induction and refresh all personnel annually.

Develop guidelines for when tenants are able to produce noise and the noise limitations that apply.

17 Consultation on the Master Plan

17.1 CONSULTATION FOR THE PREPARATION OF THE PRELIMINARY DRAFT MASTER PLAN

Consultation is integral to the successful formulation and delivery of the Master Plan, and implementation of the vision, strategies and actions described in the plan. AAC is committed to frank and open consultation. It wholeheartedly embraces the opportunity to receive constructive feedback on its plans for the airport.

The 2022-42 Master Plan retains the core principles of the current approved 2017 Master Plan.

It has been updated and refined to recognise the range of projects that have been implemented at the airport since 2017, including:

- the modernisation of aviation infrastructure (reconstructed, strengthened and lengthened main runway; improved lighting for the 10L/28R runway, primary taxiways and Eastern Apron; new navigation aids, upgraded and widened primary taxiways and Eastern Apron, new run up bays) with Project AIM Stages 1-3;
- redevelopment of Hangar 4, to provide a modern aviation facility;
- development of Hangar 13;
- upgrading and refurbishment of Hangar 5, and facilitation of refurbishment of Hangar 3;
- further development of Transition Estate (including construction of a new building on 581, and provision of additional supporting infrastructure);
- development of additional stormwater drainage infrastructure including a new Basin 7 in the Ashover precinct; and
- construction of Ashover Circuit and related utility services and civil works to create a series of new sites in the Ashover Precinct.

The Master Plan and Environment Strategy also:

- provides an updated assessment of heritage values, and sets out how these will be managed, drawing on the findings and recommendations of

the recently completed Archerfield Airport Heritage Management Plan (2021)

- provides updated aircraft movement figures to 2022, and forecasts to 2042;
- includes a recently endorsed 2042 ANEF, as required under the Airports Act, and N70 mapping to assist with interpreting the pattern of noise from aircraft in flight;
- includes updated OLS/PANS-OPS plans, consistent with the upgrading of runway 10L/28R completed for Project AIM;
- includes updated information on management of lighting and wildlife in the vicinity of the airport, to minimise hazards to pilots in the Archerfield airspace;
- includes additional and updated information on ground transport (Chapter 10) including refinements to the road access strategy for the Barton and Beatty precincts, and updated information about the roads servicing the Ashover and Boundary precincts;
- identifies the primary areas for the development of future aviation capacity; in the Wirraway precinct (adjacent to taxiway Bravo and the main runways); in the area between the Eastern Apron and Beatty Road (which has direct access to the apron, the primary taxiway system, and the main runways; and will be accessible directly from Beatty Road); 2ha of aviation land between taxiways Hotel and Juliet; and multi purpose industrial and aviation tenancies at the northern end of the Beatty precinct (with airside and ground access);
- further refines the land use strategy for each precinct, acknowledging the changes that have been implemented in each area since 2017, identifying opportunities to respond to emerging needs, and improving the interfaces to surrounding land; and
- provides additional information about how AAC will manage developments and other initiatives anticipated within the first eight years of the Master Plan.

The key initiatives and major components of the 2017 Master Plan, including: the proposed realignment of the secondary grass runway complex; the proposed extension of the Wirraway Precinct for further high-end aviation developments; the air traffic mix; and flight paths have not changed significantly.

These concepts were the subject of extensive consultation that was undertaken in the preparation of the 2011-31 and 2017 Master Plans, and involved a range of people and organisations with an interest in the future of the airport.

Since 2011, AAC has operated the *Archerfield Airport Community Aviation Consultation Group* (AACACG) which meets three times a year to discuss any matters affecting the airport, including facets of the Master Plan. Community bodies, airport tenants and Government agencies provide information to the

group on issues and policies that may affect the future operations of Archerfield Airport.

In addition, AAC established a Planning Co-ordination Forum (PCF) in June, 2014. The forum involves representatives of AAC, BCC, State Government, and the Commonwealth (through DITRDCA) and currently meets three times per year to discuss a range of strategic issues including noise, traffic, land use, airport protection, infrastructure services and community consultation.

PCF meetings with BCC have included representatives from City Planning and Sustainability, and Infrastructure.

AAC has since the approval of the 2017 plan also liaised with:

- DITRDCA on regulatory and policy matters, and the Master Plan's direction;
- CASA on standards issues, airspace management, airspace protection, the proposed realignment of the secondary grass runway complex, and prescribed airspace approval;
- Airservices Australia on airspace management including the introduction of a new Cat C and RNAV-Z (GNSS) approach for runways 10L and 28R; navigation aid requirements; future aircraft instrument procedure design; prescribed airspace approval; flight tracks; noise management; and review and endorsement of the 2042 ANEF;
- Queensland Department of State Development, Infrastructure, Local Government and Planning on regional planning initiatives (including the SEQ Regional Plan), aviation planning, and airport protection;
- Queensland Department of Transport and Main Roads on road, rail and aircraft noise forecasting aspects; and
- Brisbane City Council on airspace, aircraft noise forecasting and other airport safeguarding aspects, land use planning (including responding to referral of external developments), road network and transport requirements (including resolving site access requirements for new airport developments, and progressing implementation of priority aspects of the *Ground transport plan*), infrastructure services requirements and funding, environmental management (including weed control in area along the Oxley Creek), and economic development.

17.2 BACKGROUND STUDIES

17.2.1 Optimising the aviation operations

In 2008 AAC made significant investments in resources and new technologies to help better understand the aviation operations of the airport.

AAC engaged technical expert aviation engineers to analyse detailed data and to suggest improvements to help realise the full potential of Archerfield Airport.

These studies primarily focused on the utility of the secondary grass runway complex. They found that the secondary grass runways were periodically

unavailable due to wet conditions, and were not optimally oriented having regard to wind patterns.

For example, these runways were continuously closed for all but two weeks between December 2010 and September 2012. This was due to rain events and the 2011 floods causing significant erosion and degradation of the grass runways complex and a 'Soft Wet Surface'.

Continued rain prevented reconstruction works throughout this period, rendering the grass runways and taxiways unserviceable, and in effect quarantined approximately 60 hectares, or nearly one quarter, of the airport's total land mass for almost two years.

This experience confirmed that a rethink was required so that this otherwise underutilised area of land can contribute to both the aviation and non-aviation activities (and therefore the economic viability) of the airport. This will enable the airport to grow, achieve its highest and best use and remain poised for aviation opportunities that present themselves in the future.

A number of options to improve the utility of the grass runways were considered, including paving them in their current positions. In accordance with CASA regulations, upgrades to runways must take into account current standards. The existing runways do not meet the current standards due to their longitudinal peaks and troughs. Dispensations that currently exist, no longer apply at commencement of upgrade works.

The runways would require approximately $1.8 million in fill alone to bring them up to current ICAO standards. On top of this, more than $6 million would be required to construct an appropriate pavement and bitumen overlay. Parallel and connecting taxiways would also require pavement and bitumen works to complement the runways. These costs were considered excessive given the utility that would be achieved and far too onerous to pass on to existing GA operators and airport users.

17.2.2 Grass runway utilisation and proposed improvements

A review of NOTAMs (Notices to Airmen) relevant to Archerfield was conducted to ascertain the period of time that the grass runway complex is typically closed due to 'Soft Wet Surface' conditions.

Data from 20 years of records (from 1988 to 2008) revealed that on average, both of the grass runways had been unavailable 26.25% of the time over that period. This data shows that on average, nearly one-quarter of the airport's land mass is effectively quarantined for a quarter of each year.

In addition to this study, AAC invested in technology and reporting tools to enable analysis of individual runway movements.

The findings of the 20 year NOTAM study, together with airport specific wind data were analysed by a team of experts who concluded that a crosswind runway alignment would be required at Archerfield Airport, for daytime

operations only, approximately 12% of the time. This requirement is primarily to cater for ab-initio students flying light aircraft who can sometimes find it difficult learning in crosswinds.

It was also found that in conjunction with the existing 10/28 runways, and following the removal of the 13/31 runways in the 1980's, a realignment of the grass runways was commended by wind data and their usage could be improved by rotating them around 20-30 degrees counter-clockwise.

The various options considered for the realignment of the secondary runways included the construction of a single, sealed runway to replace the existing secondary grass runways.

The Commonwealth Administrative Appeals Tribunal between 2012 and 2015 undertook a thorough review of the Minister's decision to approve the 2011-31 Master Plan. Deputy President P. E. Hack SC, who presided over the case, concluded *"I am then satisfied that the re-alignment of the 04/22 runways will likely improve useability; it certainly will not reduce it."*

A Major Development Plan (MDP), including further consultation with potentially affected stakeholders, and approval by the Minister under the *Airports Act* will be required before realignment of the secondary grass runway complex can proceed.

17.2.3 Aviation land use planning

In parallel with the work associated with the proposed improvements to the grass runway complex undertaken for the 2011-31 Master Plan, AAC conducted extensive consultation and spent considerable time on land use planning issues.

This included analysis of the strategic land use context of the airport; the interfaces to surrounding land; and consideration of the role and function of Archerfield as depicted in State, regional and local planning strategies and the Brisbane City Plan.

The consultation and analysis assisted with clarifying the short to medium term plans of a number of airport users and tenants, identified opportunities for the expansion of aviation facilities, and concepts for changes to runway and taxiway layouts to cater for emerging needs, and AAC has revisited the findings during the process of preparing the subsequent master plans.

From this consultation, it was also clear that from a land use perspective Archerfield Airport is a major and strategic feature of Brisbane and South East Queensland, and that planning strategies and policies recognise this.

As discussed in chapter 3, the airport is an important part of the South West Industrial Gateway of Brisbane, and has the potential to make a significant contribution to the consolidation of this employment area, as a transport hub, and as a site for further development. The underutilised land on the airport has the potential to cater for a mix of land use types, and scales, including large

scale tenancies that cannot be accommodated elsewhere in this district due to scarcity of land and existing development commitments.

The investigations and consultation reinforced also the importance of incorporating appropriate transitions to the surrounding area, including by matching the types of land uses with those on neighbouring land, and providing appropriate transitions in the scale and form of developments. The State and BCC reviewed and supported these land use aspects of the 2011 Master Plan, and these were carried forward into the 2017 plan, and the draft for 2022-42.

17.2.4 20 year ANEF

The Airports Act requires that each Master Plan must include a new ANEF, prepared by AAC and endorsed by Airservices.

AAC engaged specialists to prepare the 2042 ANEF, and as part of that process, engaged with a range of stakeholders. A draft ANEF, together with plans showing the flight tracks, and background information about how the ANEF was being prepared and assessed for endorsement by Airservices were provided to Brisbane City Council and the Queensland State government.

The flight tracks were developed in consultation with Archerfield Air Traffic Control (ATC), and the final tracks were accepted by ATC as an appropriate basis for the noise modelling. ATC, and Airservices are responsible for allocating aircraft movements at Archerfield, and managing the operation of the airspace.

The 2042 ANEF makes provision for the realignment of the secondary grass runways and includes noise levels associated with the current grass runway alignment up to approximately 175,000 movements.

Comments from BCC and State were taken into consideration and included in the final ANEF report and chart that was sent to Airservices for review and endorsement.

A MDP, including additional investigations and further consultation with potentially affected stakeholders will be required before realignment of the secondary grass runways can proceed.

17.2.5 Required upgrades for future RPT, freight or larger aircraft

Technical studies were also conducted early in the planning stages for the 2011-31 Master Plan to examine the likely requirement, and alterations that would be required to existing infrastructure, for RPT operations.

Archerfield Airport has a long history of performing RPT operations and the Corporation has a desire to continue the option for RPT in the event that it is required again by the greater community in the future.

In line with the current approved plan, the 2022-42 preliminary draft Master Plan includes 12 arrivals and 12 departures per day following conversations with RPT operators and taking into account the future growth of the region. The ANEF modelling includes these aircraft movements.

The Master Plan also includes options for future freight operations. With its location within the South West Industrial Gateway of Brisbane, one of Australia's fastest growing regions and a designated Regional Economic Cluster, both of these scenarios are seen as likely requirements.

The technical reports recommended the strengthening and lengthening of the existing main runway by means of reconstruction.

These works have now been implemented through Project AIM, and also included improvements to navigation, lighting, and upgrading of taxiway Bravo and associated linkages to the main runway to a Code C standard, and upgrading of the Eastern Apron and Hotel. adequate provision for on airport parking, and any effects on other airport operations.

17.3 EXHIBITION OF THE PRELIMINARY DRAFT MASTER PLAN

This preliminary draft of the 2022-2042 Master Plan (pDMP), incorporating the 2022 Airport Environment Strategy (AES) will be exhibited from 10 October 2022 to 11 January 2023.

Copies of the 2022-42 pDMP (incorporating the AES) are available for viewing or purchase during office hours at the AAC offices at Archerfield Airport, and on the AAC web site.

18 Implementation

18.1 PLANNING PROCESS AND PRIORITIES

The *Airports Act* and regulations define a planning regime for Archerfield Airport that comprises:

- a *Master Plan* that sets the long term framework for development of the airport, having due regard to its physical, economic and community context (and its relationship to surrounding areas), and the need to plan for the long term viability of aviation services;
- an *Environment Strategy* that identifies all relevant current and potential impacts of the Airport on the environment, and sets out strategies, actions, monitoring and review procedures required to address these impacts; and
- *Major Development Plans*, for significant projects. Major developments include projects with a value in excess of the benchmark set in the Regulations (currently $25M), proposals for new runways or taxiways, or proposals that could have a significant environmental impact.

The Master Plan sets the framework for the timely, equitable and efficient provision of general aviation services, facilities, and supporting infrastructure.

It also defines AAC's plans for non-aeronautical land. These plans show how the potential of the airport as a strategic part of the greater Brisbane area (and South East Queensland), can be realised.

The proposals build on the ideas originally identified by both the Commonwealth and the Federal Airports Corporation many years ago, and refined more recently by AAC and BCC.

It also sets the parameters for land use and development decisions for proposals that interface with the airport, particularly those on neighbouring land.

The Master Plan is dynamic and subject to ongoing improvement and review.

It needs to be flexible to accommodate adjustments to market conditions, economic performance, operating requirements, standards and technologies.

18.2 KEY INITIATIVES

The development initiatives listed in the table below reflect the current and future needs of the airport as at the time of preparation of this Master Plan.

The timing and final form of specific projects is not guaranteed at this time. There are many interrelated factors that will influence the form, feasibility and timing of these proposals and much of this is outside the control of AAC.

Notwithstanding this, AAC will work diligently to realise the full potential of both the aviation and non-aviation aspects of the airport, with a view to securing its long term sustainability.

Table 11: Possible developments and planning initiatives

Project	Catalyst
TIMING	
0–8 years	
Continue to overlay and repair operational pavements.	Maintenance inspection results.
Investigate with Airservices Australia the siting requirements for the Airport Control Tower and its relocation if required.	Decision to prepare Major Development Plan for realignment of the grass runways
Investigate possible relocation of fuel farms.	Decision to prepare Major Development Plan for realignment of the grass runways or for improved airport operations
Further develop the aviation area in the Wirraway Precinct to the west of QGAir	Commitment by operators of new or expanded aviation activities/facilities.
Consolidation and/or redevelopment of sites along the east side of the Eastern Apron (through to Beatty Road), maximising aviation uses and benefits of landside access from Ditchmen Avenue and Beatty Road	Commitments to new or upgraded facilities by existing or new tenants
Implement realignment of the 04/22 grass runways.	Major Development Plan approved.
Rezoning of SP5 and general and low impact industrial land to reflect the zoning shown in Figure 19.	Realignment of the grass runway complex.
Encourage new aviation developments, for RPT, freight, emergency services, aeromedical, flying training, air taxi, Advanced Air Mobility and emerging technologies, corporate aircraft and charter.	Market/industry interest in available serviced sites and/or following the realignment of the grass runways when new sites become available.
Further develop the Boundary precinct (Transition-Archerfield Logistics Estate)	Market/industry interest in available serviced sites.
Further develop the Beaufighter and Mortimer precincts.	Market interest in sites.
Improve the safety and efficiency of access to Archerfield Square from Beatty Road.	Initial planning investigations commenced. Airport property adjacent to the intersection of Kerry Road and Beatty Road secured by AAC to provide options for extension of Kerry Road into the airport, or alternative solutions. Construction scheduled once agreement reached with BCC on configuration of intersection at Kerry

Project	Catalyst
	Road (or alternative access arrangements).
Implement pro active building maintenance/replacement program.	Availability of funding and tenant commitments / market interest will determine priorities
Upgrade hangars 1 and 2 along Qantas Avenue	Commitments to upgrade facilities by existing or new tenants
Design and implement the initial stages of redevelopment of Barton Precinct, including road access from Barton Street/Balham Road and Beatty Road	Realignment of the grass runways. Commitments from tenants of proposed development
Encourage commuter operations to Archerfield Airport.	Potential operators identified.
Reconstruct taxiways and aprons/develop new taxiways and aprons	Needs arising from increased movements/larger aircraft
9–20 years	
Reconstruct runways, taxiways and aprons.	In accordance with AAC maintenance program.
Continue with program of developing new and upgraded facilities in each precinct	Commitments to new or upgraded facilities by existing or new tenants
As required	
Prepare development plans for development precincts.	Critical mass of bona fide (and feasible) development proposals received by AAC.
Upgrade navigational facilities	Need demonstrated by airport users. AAC satisfied with viability of investing in system to attract additional movements, or to facilitate existing or new operators.
Upgrade runway/taxiway lighting	Current system no longer viable to maintain Extension or alterations to main runway complex or taxiways
Review of Master Plan and Environment Strategy	Airports Act requirements for cyclical review.

The airport contains some significant landside development and redevelopment opportunities that will be realised by AAC.

The detail of these projects will evolve over the coming years, as bona fide proposals are secured and their feasibility proven to the satisfaction of AAC.

Within the framework of the Master Plan, AAC will at times draw on the advice of BCC and other agencies (as appropriate) to ensure that, before a decision is taken on a significant project, the full planning and development implications are known.

AAC has over the past 24 years worked with BCC and other agencies to develop a constructive and cooperative approach on matters where there are shared interests.

Where there are opportunities for mutually beneficial decisions to be made about the airport and the surrounding area, AAC is committed to pursuing these through respectful consultation and consideration.

AAC facilitates the *Archerfield Airport Planning Coordination Forum*, and the *Community Aviation Consultation Group* which includes representatives from the airport businesses and users, the communities around the airport, local businesses, other local stakeholders, and relevant agencies and authorities with a role in the planning and/or operation of the airport.

Further information about these initiatives is described in Chapter 18.11.

18.3 PLANNING APPROVALS PROCESS

18.3.1 AAC planning obligations and operation of the Master Plan

Under the provisions of the *Airports Act*, the airport is exempt from the local planning controls in the Brisbane City Plan.

Instead, AAC is responsible for devising a land use plan as part of the Master Plan and administering the provisions of that plan. The plan must be generally consistent with relevant aspects of the Brisbane City Plan, and the State Planning Policy and strategies.

The land use zoning and requirements for development precincts are presented in Chapter 12.

The land use proposals in the Master Plan are generally consistent with the strategic direction for land use and development as described in the City Plan and State Planning Policy and guidelines.

AAC has adapted to the airport the zone descriptions used by BCC in its City Plan, and will also refer to relevant Codes and related provisions in the City Plan when assessing development applications.

Administration

Within this strategic framework, land use and development approvals are granted, either by the Airport Building Controller, or in the case of major developments, through the exhibition and approval of a MDP.

In the case of projects requiring the approval of a MDP (as defined in the *Airports Act*) AAC will undertake a range of consultation activities with relevant parties including BCC, in accordance with the Act.

18.3.2 Role of AAC in land use planning and development external to the airport site

Land use and development decisions relating to land in the vicinity of the airport have the potential to impact on the sustainable, safe and efficient operation of Archerfield Airport.

Key aspects are:

- maintaining obstacle clearances to allow for safe aircraft movement and aviation communications (in accordance with the obstacle limitation surfaces and PANS-OPS shown in Figures 11 and 12);
- controls over lighting to minimise the potential for adverse effects on pilots approaching landing at the airport (in accordance with the light intensity zones shown in Figure 13);
- consideration of the colours and finishes of external building materials on and in the vicinity of the airport, to avoid creating excessive glare or reflection that could adversely affect pilots;
- identifying areas that are forecast to be subject to aircraft related noise, ensuring that new noise sensitive uses are not located in these areas, and that appropriate noise amelioration measures are implemented (in accordance with AS2021: *Acoustics – Aircraft Noise Intrusion – Building Siting and Construction*);
- management of the concentration of birds and other wildlife in the areas around the airport, to minimise strike hazards for aircraft;
- identification of areas in the vicinity of the runways that are sensitive to wind shear; and
- adherence to the public safety areas and other relevant provisions of the *State Planning Policy* and related guideline.

AAC will continue to work with BCC, State Government and other authorities responsible for land use and development decisions to ensure that these aspects are addressed, and that the provisions of the *National Airports Safeguarding Framework* are implemented consistently.

AAC will assist with providing advice on current obstacle clearances, wildlife buffer management, appropriate colours and finishes, wind shear, lighting requirements and forecast noise distribution.

18.4 NEW FACILITIES/APPLICATIONS

AAC will require new tenants or proponents of new aviation or non-aviation facilities or activities to apply for approvals as provided for in the *Airports Act, 1996*.

In addition to the requirements of the Airport Building Controller, the application for approval will need to detail:

- the activities and operations proposed, in accordance with the Archerfield Airport Environmental Management Procedures (EMPs);
- any chemicals to be used or stored on the site including type and maximum quantities;
- evidence that the proposal meets any applicable legislative requirements and guidelines for the construction and operation of the activity or site; and
- evidence that the proposal will meet any applicable occupational health and safety, storage and placarding requirements.

Procedures for this and relevant forms are set out in the Airport EMPs.

These include:

- Procedure AA1-*Environmental assessment of new tenancy or lease renewal*;
- Procedure AA8-*Assessment of environmental effects of new works*;
- EMP1 *Lease proposal/tenant questionnaire*; and
- EMP6 *Environmental management checklist for new works*.

The information provided with applications will assist AAC and the tenant/proponent to identify all potential issues or impacts, and to also clarify applicable legislative requirements and best practice management guidelines that will be applied. If required, the AEO will be provided with this information.

In cases where a proposal has the potential to impact sites or features of heritage value (as identified in the AES), the application must include an appropriate assessment in accordance with the procedures in the AES.

18.5 ASSESSMENT

The assessment of new works will consider the implications of the proposal for:

- compliance with CASA standards in relation to new works proposed within the Master Plan;
- airside operations;
- existing land uses on and adjacent to the airport, including through the emission of noise, dust or odour;
- existing utility services, and any connections required during and following construction;
- efficient use of water;
- access to and within the airport;
- significant native flora;

- Aboriginal cultural heritage, and built heritage values, as described in the AES and Heritage Management Plan);
- potential risk of soil or air pollution;
- noise impacts;
- groundwater, including potential changes to groundwater levels on or off airport, and/or water quality;
- surface water, including potential changes to peak volumes entering existing drainage lines, diversion of existing stormwater flows and/or impacts on water quality;
- containment of asbestos, where works relate to buildings or plant listed in the airport asbestos register;
- the potential for the works to result in the introduction or spreading of Fire Ants; and
- the appearance of the site and the airport.

If on reviewing the proposal potential impacts are identified, AAC will work with the proponent to identify how impacts can be mitigated. The preparation of an Environmental Management Plan for the construction and/or operational phases may also be required.

18.6 CONSULTATION ON DEVELOPMENT APPLICATIONS

All new proposals for the airport land will be reviewed by AAC against the Master Plan, the AES, and other relevant policies, guidelines or standards. Where the *Airports Act 1996* requires consultation with the wider community, AAC will facilitate this.

The AEO will be involved in assessing and advising on the environmental aspects of any major new developments on the airport site, including any Environmental Management Plan for the construction or operational phases.

If in the opinion of AAC, the development could result in a significant off-site impact, AAC will identify and consult with relevant stakeholders including Brisbane City Council, and possibly State agencies and/or the community and their comments taken into consideration.

Information concerning new proposals will be provided to the AEO, in accordance with the Airport EMPs.

All comments received will be reviewed and considered by AAC before deciding on whether the proposal should proceed, and if relevant, under what conditions.

Where the *Airports Act 1996* requires consultation with the community (such as in the case of a Major Development Plan), AAC will initiate an appropriate consultative process. Comments received by external parties will be taken into account by AAC when deciding whether the proposal should proceed.

18.7 BUILDING APPROVAL REQUIREMENTS

DITRDCA has appointed an Airport Building Controller (ABC) who is responsible for ensuring that activities at Archerfield Airport meet the appropriate building and engineering standards.

The ABC must be notified in writing of all proposed construction and building activities, including minor repairs, alterations and signs. Some minor works are exempt from formal approval.

In summary, the following standards and considerations will apply to all works on the airport:

- *Airports (Building Control) Regulations—Building Code of Australia* as applied in Queensland (adopted by reference), and other relevant standards;
- structures must have a wind rating in accordance with *AS 1170 Part 2 - Structural design actions – Wind actions* (2011);
- all structures and site features must comply with the Obstacle Limitation Surfaces applicable to Archerfield. Any development constituting a 'controlled activity' should be dealt with in accordance with the relevant regulations;
- regard must be had to noise attenuation requirements, or arrangement of activities to minimise adverse exposure of occupants, taking into account the characteristics of the intended use, and whether it is temporary or permanent;
- landscaping must be provided to provide screening, shade and an attractive setting, and be consistent with the overall landscaping theme for the precinct within which the building sits;
- individual developments must include adequate provision for car parking, service and emergency vehicle access, loading and storage facilities;
- the relevant provisions of the AES, environmental management plans, and the environment protection requirements of relevant regulatory bodies must be met; and
- in assessing proposals, AAC will have regard to best practice building development and environment protection practices, including those adopted by State Government and BCC.

Building and construction must comply with the Building Code of Australia (BCA) as operational in Queensland and any other relevant standards. Where the BCA does not apply (for example in relation to civil engineering works) the relevant Australian Standard or international standard will apply. The ABC identifies the appropriate standards.

The structural design will be required to be certified by an appropriately qualified Structural Engineer to meet the appropriate wind rating.

A Certificate of Compliance for Occupancy is required for all building or construction work that requires formal approval by the ABC. A Certificate of Compliance for Occupancy is issued before a building can be occupied, and a Certificate of Compliance for Use is required before engineering works, electrical works or other utility services can be used.

The consent of AAC is required before the ABC can approve a development application. AAC is responsible for ensuring that all development proposals are consistent with the airport Master Plan and AAC's planning objectives. AAC will in each case assess the impact of the proposal on infrastructure and the operations of the Airport, and may impose conditions on building activities.

18.8 LEASING CONDITIONS

For all new leases, conditions will be included that ensure that facilities are constructed and operated in accordance with the Master Plan, the AES and relevant environmental requirements.

Following construction of the facility, AAC will inspect the premises and verify compliance with any requirements stipulated in the development approval.

18.9 BUILDING PRESENTATION STANDARDS

AAC seeks to encourage the progressive improvement of the airport environment, and is particularly concerned to see improvement in the quality and presentation of buildings on the site. This includes the standard and quality of building design and layout, the materials and finishes used, and the landscaping provided.

The principal objective is to ensure that the profile and presentation of the airport is continuously upgraded from the state to which it had deteriorated prior to privatisation.

AAC will require that landscaping surrounding new developments will be of a standard complementary to the expectations of BCC.

AAC will apply appropriate siting and design guidelines to all applications for advertising signs proposed on airport. When assessing an application for a sign, AAC will refer to signage guidelines applied elsewhere by BCC. This will assist AAC to ensure that the character of the airport and surrounding neighbourhood is protected and where possible enhanced.

18.10 IMPLEMENTATION OF THE AES

18.10.1 AAC's role in implementing the AES

AAC recognises that the successful implementation of the Environment Strategy requires the constructive involvement and commitment of a number of parties both on and off airport. AAC will facilitate this by:

- providing information about the AAC environment protection policy; its objectives, environmental issues, management and mitigating measures, actions to be taken, and outcomes of ongoing monitoring and review, to interested parties;
- working with key stakeholders with a common interest or responsibilities to address environmental issues;
- disseminating information about environmental issues and initiatives being undertaken;
- training AAC personnel on the environmental management needs of the airport, according to their obligations under the Airports Act and Regulations, and requiring airport tenants to also undertake environmental training;
- encouraging others operating from, or using the airport to develop and apply environmental awareness, consistent with the Airport Environment Strategy;
- continuing to include environmental management requirements in airport leases and development approvals; and
- reporting on achievements and outstanding matters to assist all stakeholders to monitor the implementation of the Strategy.

AAC is committed to ensuring that the Environment Strategy and Master Plan remain focused on the relevant current and future planning and environmental requirements of the airport.

To this end, it will consider and address all future proposals for improvement to, or refinement of the Environment Strategy and the Master Plan. These improvements will be formally consolidated in revised documentation arising from periodic reviews.

18.10.2 Annual environmental performance report

An environmental performance report is supplied to DITRDCA—Airports Division every 12 months, and copied to the AEO. The performance report details:

- the results of any site environmental reviews which have been conducted over the previous 12 months;
- achievement of AAC's environment protection and management objectives and targets;
- progress in implementing the strategy;
- the results of the groundwater and surface water quality monitoring program;
- a summary of any environmental incidents that occurred over the previous 12 months and the findings of any incident investigations; and
- a summary of complaints received and actions taken.

AAC will also advise the AEO if monitoring indicates that discharges from the site were excessive.

Contact will also occur following any spill of material that may adversely affect either the on-site or off-site environment.

BCC and the Queensland DES will also be advised if environmental impacts have occurred external to the site.

18.10.3 Continuous improvement

AAC will advise relevant tenants of the findings of its environmental reviews.

AAC will also communicate with tenants on related environmental issues on an as needed basis, for example when tenants first arrive, or following an environmental incident.

In exceptional circumstances, the AEO will also be involved to ensure the implementation of the AES is achieved.

Airport Environmental Management Procedures

The EMPs are dynamic and subject to regular review and refinement.

The main opportunities for improvement are anticipated to arise from:

- monthly AEMF meetings involving the AAC, AEO and the ABC;
- monthly management reviews by AAC of key issue areas;
- cyclical tenant reviews; and
- revisions and recommendations arising from the annual environmental management report to DITRDCA.

AAC will undertake a general review of the EMPs every two years

Authority for revision of the procedures in the EMPs rests with the Airport General Manager. Policy and strategies can only be revised with the approval of the AAC Board.

18.10.4 Monitoring and review

As a part of maintaining the ongoing responsibilities identified in this AES it is important that there are mechanisms in place to monitor and identify any potential or emerging issues.

Key environmental aspects will be monitored through the following actions:

- an ongoing, annual assessment of groundwater quality on the airport;
- annual reviews of airport tenants that have hazardous chemicals on site, to monitor compliance with chemical handling and storage requirements;
- cyclical environmental reviews of each airport tenant to determine the environmental performance of the activities carried out and achievement

of environmental management objectives against their Site Environmental Management Plan (where applicable);

- maintaining a register of known hazardous materials (including wastes) that are on the airport site;
- ensuring that with each new building application the appropriate environmental systems and considerations are put in place. This will involve working closely with the AEO;
- annual assessment of the quality of the airport stormwater run-off. AAC will continue the past practice of conducting assessments each year with sampling taken in each sub catchment on airport, and will maintain these data on a data base;
- ensuring that tenants secure any Trade Waste Agreement required prior to commencing activities on the airport;
- monitoring and reviewing products and chemicals used by AAC to ensure that environmental issues are considered and best practice is applied; and
- investigating any complaints about nuisance noise relating to ground based activities, including those by tenants.

The AEO will be advised if monitoring indicates that any discharges are excessive.

There are currently no other known emissions to the environment that warrant monitoring. If an issue arises, or is identified during environmental reviews of activities or works by AAC or tenants, a monitoring program will be implemented as required.

The achievement of the AES objectives and action plan targets will be monitored by AAC and the AEO on a six-monthly basis.

AAC will review the Airport Environment Protection Action Plan on a 12 monthly basis. It will check on the risk rating given to each action, progress on individual actions, and whether the Plan needs to be modified. It will provide the results of this review to DITRDCA and to the AEO.

18.11 OTHER CONSULTATIVE PROCESSES

18.11.1 Consultation during implementation of the Master Plan and AES

AAC will continue to consult in a variety of ways to provide for appropriate and timely input to its decision making processes.

Similarly, AAC will seek to have input to planning and development decisions by others, where those decisions may have implications for the operation, amenity or safety of the airport.

AAC is particularly concerned that other parties are cognisant of AAC needs and requirements and seeks to work in partnership with its neighbours where there are common issues to be resolved.

AAC is engaged in a continuing program of consultation with parties involved in the airport, both on the site (tenants and operators) and external to the site.

Key aspects include:

- facilitation by AAC of the Archerfield Airport Environmental Management Forum (AAEMF);
- a rolling program of reviews of tenant operations;
- community consultation on major projects;
- regular 12 monthly reporting of environmental matters to the Commonwealth Government; and
- environmental awareness training and education.

Archerfield Airport Planning Coordination Forum

There are a number of ongoing issues that AAC shares with BCC, State Government and Commonwealth agencies responsible for the environment, roads, and planning. These include:

- planning for, and providing utility services infrastructure required to support the planned developments at Archerfield;
- land use and development controls to ensure that on airport activities are consistent with the Master Plan, complementary to the strategic direction of the City, and are compatible with neighbouring land use;
- opportunities to enhance the South West Industrial Gateway by the provision of complementary aviation services, and land uses;
- land use and development controls to ensure that land around the airport is used and developed in a way that will allow the continued safe and efficient operation of the airport, and minimise the opportunity for activities to establish that are intolerant to aircraft noise or other aspects of airport operation;
- airspace protection and removal of obstacles;
- identifying and conserving features and areas of heritage and natural significance;
- managing emissions to the environment; and
- facilitating the timely and equitable upgrading of the regional and local road network, to address existing capacity problems, particularly relating to Beatty Road.

AAC will continue to work to address these issues with the relevant authorities.

The strategic planning meetings that took place as part of the master planning process for the 2011-31 Master Plan provided a valuable opportunity for a number of these issues to be clarified and further considered by AAC, DITRDCA, the State Government and BCC.

The ongoing consultation is now facilitated by the *Archerfield Airport Planning Coordination Forum* which meets on a regular basis to discuss strategic issues relevant to the implementation of the Master Plan and plans for the areas around the airport, and disseminate information.

The meeting frequency is resolved with the forum members, and depends on the issues that need to be addressed. There is also the flexibility for special meetings to be arranged to address specific issues as required.

Community Aviation Consultation Group

AAC recognises the importance of effective consultation with the range of community stakeholders with an interest in the airport. The issues are often complex, and attract divergent views.

AAC has through this and past master plans identified and implemented various approaches to consulting with stakeholders, and providing information on the strategic issues shaping the airport.

There is always scope to improve these processes, and with this in mind, AAC established the *Archerfield Airport Community Aviation Consultation Group*.

The group meetings provide the opportunity for dissemination of information about airport related issues, and provide feedback to AAC.

The inaugural meeting of the group took place on 2 November 2011. It was attended by approximately 30 people, including individuals and representatives of community groups from the areas around the airport, airport businesses and business groups, other local businesses, BCC Councillors, BCC officers, CASA, Airservices Australia, DITRDCA, and the State Department of Transport and Main Roads (DTMR).

The group has an independent Chairperson, and currently meets three times per year.

Airport Environment Management Forum

The *Archerfield Airport Environment Management Forum* (AAEMF) provides a forum for AAC, the ABC and the AEO to discuss current and emerging environmental issues, monitor aviation activities, and disseminate information relevant to the environmental management of the airport and its environs.

It is facilitated by AAC and meets quarterly. It was established as part of AAC's commitment to implement an appropriate on-going consultation process.

Consultation with airport tenants and airport users

AAC publishes newsletters which are circulated to the individuals and organisations on the AAC contact list. The newsletters are circulated via email and are where appropriate included in other mail correspondence with tenants and airport users, and are also posted on the airport notice board in the Terminal Building.

AAC also holds meetings with airport tenants and users, at which information about current issues is presented and discussed.

18.11.2 Major developments

Major developments, including the proposed realignment of the secondary grass 04/22 runway complex, or the provision of new or lengthened runways as part of the 10/28 complex will require the preparation and approval of a Major Development Plan under the *Airports Act 1996*.

AAC will consult with potentially affected stakeholders in accordance with the requirements of the Act. The *Planning Coordination Forum* and the *Community Aviation Consultation Group* will be engaged in these consultation processes.

18.11.3 Other information

AAC maintains a range of literature and other publicly available documentation relating to the safe and efficient operation and management of the airport. This information currently includes:

- historic records about the airport;
- standard guidelines and other information about appropriate land use and development on the airport site (and in proximity to the airport);
- obstacle clearance requirements for Archerfield;
- brochures describing environment management at airports and the development approvals process;
- the current Airport Environment Strategy;
- the current approved ANEF;
- N70 modelling showing potential noise effects of the airport when operating at practical capacity; and
- fact sheets and other material that describes key aspects of the Master Plan.

AAC is proactive in working with any party that could either be impacted by airport operational requirements, or have the potential to compromise airport functionality, to ensure that the safety, operational needs and amenity of the airport is maintained.

18.12 EXTERNAL INFRASTRUCTURE

During the process of preparing the 2011-2031 Master Plan, BCC and AAC agreed to work together to determine:

- the infrastructure requirements for the developments described in the Master Plan;
- the likely sequence, timing and triggers for the delivery of required infrastructure; and

- any contributions from AAC toward the cost of providing infrastructure adjacent to the airport that is required as a consequence of airport developments.

This consultation process has continued over the intervening years, as specific projects (such as the development of the Transition Estate) have progressed.

Any infrastructure works, or other contributions such as the provision of land for road works (such as widenings or intersections) required for airport developments will be implemented in accordance with agreements to be negotiated between BCC and AAC.

Appendix A-Glossary of terms

AAA	Airline Academy of Australia
AAC	Archerfield Airport Corporation
AAEMF	Archerfield Airport Environment Management Forum
AEPAP	Airport Environment Protection Action Plan
ABC	Airport Building Control Officer
ACN	Aircraft Classification Number
AEO	Airport Environment Officer (Commonwealth)
ALC	Airport Leasing Company (AAC)
ANEF	Australian Noise Exposure Forecast
ARFL	aircraft reference field length
AsA	Airservices Australia
ATC	Air Traffic Control
ATS	air traffic services
BAC	Brisbane Airport Corporation Limited
BCC	Brisbane City Council
BOM	Bureau of Meteorology
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulations* 1998, and relevant provisions of *Civil Aviation and Civil Aviation Safety Amendment Regulations* 2009 (No. 1)
CTAF	common traffic advisory frequency
DES	Department of Environment and Science (State)
DITRDCA	Department of Infrastructure, Transport, Regional Development, Communications and the Arts (Commonwealth)
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning (State)
DTMR	Department of Transport and Main Roads (State)
EMPs	Archerfield Environmental Management Procedures
FAA	Federal Aviation Administration (US)

GA	general aviation
GAAP	General Aviation Aerodrome Procedures
GPS	Global Positioning System
ICAO	International Civil Aviation Organisation
IFR	instrument flight rules
ILS	instrument landing systems
MATS	Manual for Air Traffic Services
MOS 139	Manual of Standards Part 139-Aerodromes
MTOW	maximum take-off weight
OLS	obstacle limitation surfaces
PAPI	Precision Approach Path Indicator lights
PAL	Pilot Activated Lighting
PALC	Pilot Activated Lighting Control
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
PCN	Pavement Classification Number
PSP	Precinct Structure Plan
RPT	regular public transport
SEQ	South-East Queensland
Tenant	All occupiers of AAC land or facilities at Archerfield Airport (other than AAC), including lessees and sub lessees.
Tie Down	aircraft parking position
VMC	visual meteorological conditions
White Paper	National Aviation Policy White Paper: *Flight Path to the Future* (2009)

Appendix B-Legal register

The following is a list of Commonwealth and State planning, environment protection, health and safety or dangerous goods management acts and regulations that may apply to Archerfield Airport and/or its various tenants.

COMMONWEALTH LEGISLATION AND REGULATIONS

Aboriginal and Torres Strait Islander Heritage Protection Act 1984
Airports Act 1996
Airports Regulations 1997
Airports (Building Control) Regulations 1996
Airports (Protection of Airspace) Regulations 1996
Airports (Environment Protection) Regulations 1997
Airspace Act 2007
Airspace Regulations 2007
Australian Heritage Council Act 2003
Aviation Transport Security Act 2004
Aviation Transport Security Regulations 2005
Civil Aviation Act 1988
Civil Aviation Safety Regulations 1998
Environment Protection & Biodiversity Conservation Act 1999 and Regulations 2000
Ozone Protection and Synthetic Greenhouse Management Act 1989

STATE LEGISLATION AND REGULATIONS

Aboriginal Land Act 1991
Aboriginal Cultural Heritage Act 2003
Coastal Protection and Management Act 1995
Environmental Protection Act 1994
Environmental Protection (Air) Policy 2019
Environmental Protection (Noise) Policy 2019
Environmental Protection (Water) Policy 2019
Environmental Protection Regulation 2019
Native Title (Queensland) Act 1993
Nature Conservation Act 1992
Planning Act 2016 and Planning Regulation (2017)
Torres Strait Islander Cultural Heritage Act 2003
Waste Reduction and Recycling Act 2011

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Appendix D-Environment Protection Action Plan

Action	Risk rating	Action by:	Cycle	Start date	Finish date
ENVIRONMENTAL MANAGEMENT SYSTEM					
Review core Environmental Management Procedures (EMPs).	Minor	AAC and AEMF	2 yearly	2010	Ongoing
Prepare additional EMPs as required.	Minor	AAC, Tenants	As required	As required	N/A
Provide framework for preparation of EMPs to those tenants undertaking activities that could cause environmental harm.	Minor	AAC, AEO	As required	As required	N/A
Administer Complaints Register.	Moderate	AAC	N/A	Ongoing	Ongoing
Ensure all new lease agreements for Airport tenants include the requirement that tenants address relevant environmental issues.	Moderate	AAC	Prior to grant/ renewal of lease	Prior to grant/renewal of lease	On signing of lease
Identify new legislative requirements, relevant standards and guidelines for AAC activities.	Moderate	AEMF	Monthly	Ongoing	Ongoing
INFORMATION, EDUCATION AND TRAINING					
Provide AAC staff with copies of quarterly newsletter and alert them to any new or emerging environmental issues or requirements that might impact on their work.	Moderate	AAC	Quarterly	Ongoing	Ongoing
Train AAC staff in environmental responsibilities, key environmental issues for the airport, and actions.	Major	AAC	Annual	2010	Ongoing
Educate staff on new legislation requirements.	Moderate	AAC	As required	As required, on release of new requirements	Ongoing
Inform tenants of their obligations under the AES and provide copies of relevant AAC EMPs if requested.	Moderate	AAC and AEO	N/A	As required	N/A

Encourage tenants to work with AAC and the AEO in formulating appropriate and workable EMPs to meet their environmental management obligations.	Moderate	AAC and AEO	N/A	As required	As required

Action	Risk rating	Action by:	Cycle	Start date	Finish date
Include on AAC web site the AES, relevant Environment Management Procedures (EMPs) and EMP forms; standard environmental requirements for leases; summary information about regulatory requirements under the Airports Act 1996 and its regulations; fact sheets; and updates on any current environmental issues.	Moderate	AAC	As required	2010	Ongoing
Provide current airport-related environmental information to tenants via quarterly newsletter/email, AAC website environment section or summary with tenant invoices.	Major	AAC	Quarterly	Ongoing	Ongoing
HERITAGE					
Facilitate the conservation works at God's Acre cemetery by Friends of God's Acre Inc.	Minor	AAC	N/A	Ongoing	Ongoing
Apply the findings and recommendations of the *Heritage Management Plan* (2021) to proposals for development of sites of identified heritage value.	Major	AAC, AEO, ABC	N/A	In planning phase of potential projects	Ongoing
FLORA AND FAUNA					
Ensure new development does not cause an increase in bat or bird populations (due to drainage works, settlement ponds, storage of materials, or bird attracting landscaping).	Catastrophic	AAC, ABC and AEO	N/A	On assessment of each proposal	Ongoing
Encourage use of mainly indigenous plants in landscaping works.	Minor	AAC	N/A	Ongoing	Ongoing
Prior to any major development in areas along Oxley Creek not already intensively managed, investigate fauna and flora values.	Moderate	AAC	As required	As required	N/A

Action	Risk rating	Action by:	Cycle	Start date	Finish date
EMISSIONS TO AIR AND OZONE DEPLETING SUBSTANCES (ODS)					
Continue to identify the presence of ODSs in AAC and tenant reviews.	Moderate	AAC and AEO	At tenant reviews	Ongoing	Ongoing
Advise tenants of their responsibility to obtain relevant environmental approvals for use of ODSs.	Major	AAC and AEO	At tenant reviews	Ongoing	Ongoing
SURFACE WATER					
Continue surface water monitoring for each sub catchment.	Moderate	AAC	Annual	Ongoing	Ongoing
Carry out further investigations to identify pollution source(s) if results exceed acceptable limits in a catchment.	Major	AAC and AEO	Annual	As required	As required
Prepare management plan if pollution is attributed to AAC or tenant(s).	Moderate	AAC and AEO	As required	As required	As required
GROUNDWATER					
Conduct annual assessment of groundwater quality.	Moderate	AAC	Annual	Ongoing	Ongoing
Review with AEO findings of annual groundwater monitoring reports and determine likely reasons for any elevated levels. Update monitoring program if required.	Moderate	AAC and AEO	Annual	2010	Ongoing
AAC and tenants with USTs to monitor net quantities to identify any losses. Immediate integrity testing required if losses are identified.	Major	AAC and tenants	Annual	Ongoing	Ongoing
SOIL AND GROUNDWATER CONTAMINATION					
Assess storage of potential contaminants, work methods, and equipment during tenant reviews to identify potential for contamination.	Major	AAC	At tenant reviews	Ongoing	Ongoing

Action	Risk rating	Action by:	Cycle	Start date	Finish date
Encourage tenants to install bunded above ground tanks, rather than USTs where feasible.	Major	AAC, tenants	Ongoing	Ongoing	Ongoing
Ensure all new tenant lease agreements cover contamination monitoring and remediation requirements.	Moderate	AAC	As tenancies are let or renewed	Ongoing	Ongoing
Require tenants to remediate any contamination.	Major	AAC	As required	As required	As required
HAZARDOUS MATERIALS AND WASTE MANAGEMENT					
Implement recommendations of *Asbestos Management Plan and Register for Archerfield Airport* and keep asbestos register current.	Moderate	AAC, tenants modifying existing structures and services	As building demolition, works or modifications are undertaken, AAC acquires buildings	2003	Ongoing
Maintain up to date Hazardous Materials Register for AAC operations.	Major	AAC	Ongoing	Ongoing	Ongoing
Record hazardous materials at minor tenancies during environmental reviews	Moderate	AAC and tenants	At tenant reviews	2010	Ongoing
Monitor hazardous materials on airport through tenant reviews and record quantities of hazardous materials in Hazardous Materials Register.	Major	AAC, tenants	12 monthly	2011	Ongoing
Ensure that tenants have hazardous materials licences where applicable and have a HAZMAP located at the site entrance.	Major	Tenants	12 monthly (with reviews)	2010	Ongoing
Monitor the quality and quantity of waste materials on airport.	Moderate	AAC and AEO	Ongoing	Ongoing	Ongoing

Action	Risk rating	Action by:	Cycle	Start date	Finish date
USE OF NATURAL RESOURCES AND ENERGY					
Encourage tenants to reduce energy and water use and make greater use of recycling by highlighting opportunities for resource recovery and reuse during environmental reviews of tenancies.	Minor	AAC, AEO and tenants	At tenant reviews	Ongoing	Ongoing
Include in new AAC developments rainwater harvesting where feasible.	Minor	AAC	Ongoing	At planning stage of project	Ongoing
Identify opportunities in new developments for water conservation and reuse, efficient use of energy, natural light, and ventilation; and implement where feasible.	Minor	AAC	Ongoing	At planning stage of project	On completion of each project
NOISE					
Investigate any noise complaints related to on airport activities and consult with relevant stakeholders. If necessary, conduct noise monitoring.	Moderate	AAC, AEO and tenants	Regular follow up if issue identified	On receipt of noise complaint	On satisfactory completion of investigation and remedial action
Meet with AsA on an ongoing basis to identify and address any noise management requirements arising from aviation operations at Archerfield; and implement agreed actions that fall within AACs responsibilities.	Moderate	AAC, AsA	Quarterly	2022	Ongoing
Ensure that all AAC personnel are familiar with the noise complaints process, and the different responsibilities of AAC and AsA. Advise new employees during initial induction.	Minor	AAC	Annual	Ongoing	Ongoing
ENVIRONMENTAL MONITORING AND REVIEWS					
Maintain updated tenant review schedule, in accordance with tenant risk classification.	Moderate	AAC and AEO	N/A	Ongoing	Ongoing

Action	Risk rating	Action by:	Cycle	Start date	Finish date
Conduct tenant environmental reviews	Major	AAC, AEO	At tenant reviews (12 monthly for tenants with hazardous materials, others as scheduled)	Ongoing	Ongoing
Identify opportunities during tenant reviews for improved waste management by AAC and tenants through cleaner production and potential synergies between activities on the airport.	Minor	AAC and tenants	At tenant reviews	Ongoing	Ongoing
Audit sites prior to tenant departure to confirm environmental condition, removal of plant and equipment, condition of utility services, and to identify any remediation or reinstatement required by tenant.	Major	AAC, AEO	Lease end	3 months before tenant vacates premises.	2 months before tenant vacates premises
Ensure compliance of tenant with any actions arising from audit	Moderate	AAC and AEO	N/A	1 month prior to tenant vacating	Prior to release of tenant from lease
Investigate and report on received complaints	Minor	AAC	As required	On receipt of complaint	On satisfactory completion of investigation and remedial action
COMMUNICATION AND CONSULTATION					

Facilitate the Archerfield Airport Environmental Management Forum (AAEMF).	Minor	AAC	Quarterly	2000	Ongoing
Undertake consultation with relevant stakeholders on major projects	Minor	AAC	As required	As required	As required

Action	Risk rating	Action by:	Cycle	Start date	Finish date
CONTINUOUS IMPROVEMENT					
Review progress of implementation of the Environment Protection Action Plan.	Moderate	AAC and AEO	6 monthly	July 2010	Ongoing
Review contents of Environment Protection Action Plan and revise as required, consistent with the AES.	Moderate	AAC	Annually	June 2011	Ongoing