BANKSTOWN AIRPORT

MASTER PLAN 2019



SYDNEY METRO AIRPORTS

BANKSTOWN



The Bankstown Airport Master Plan 2019 was approved by the Commonwealth Minister for Infrastructure, Transport and Regional Developments on 7 November 2019.

DECEMBER 2019

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FOREWORD

I am delighted to present the Bankstown Airport Master Plan 2019.

The Master Plan outlines our vision, objectives and aspirations for Bankstown Airport's future over the next 20 years.

Bankstown Airport is the State's pre-eminent general aviation airport and proud home to the majority of the State's Emergency Services aviation operations, major flying schools, small to medium air freight, aircraft maintenance, charter operations and private business flight operations. The Airport will continue to develop both as a Centre of Aviation Excellence with it's ecosystem of aviation businesses and as a major commercial centre within the Canterbury-Bankstown region.

Since our last Master Plan in 2014, the Airport has new ownership, with First State Superannuation taking over the lease of this strategically important Commonwealth-owned facility. The management structure of the Airport has also been renewed and enhanced, and there has been a strong focus on safety, aviation operations, compliance, customer service and responsiveness, improvement of facilities and environmental management.

Over the next five years, we will continue our work to strengthen our aviation operations, improve facilities, help our customers grow their businesses, as well as address outstanding issues such as airport-wide flood management and develop the South-West Precinct of the Airport as a major warehouse and light industry precinct.

We look forward to working with our Airport customers, the local community and all levels of government, in the delivery and implementation of this Master Plan.



LEE DE WINTON
Bankstown Airport CEO

EXECUTIVE SUMMARY

BANKSTOWN AIRPORT

Bankstown Airport is the premier general aviation airport and a major commercial centre in Sydney.

Bankstown Airport is operated by Bankstown Airport Limited (BAL). BAL is the Airport Lessee Company under a Head Lease from the Commonwealth Government as the owner of the Airport. BAL also manages Camden Airport under a management agreement with Camden Airport Limited (CAL). CAL is the Airport Lessee Company under a Head Lease from the Commonwealth Government as the owner of Camden Airport. BAL and CAL have common ownership, and are trading as Sydney Metro Airports.

BAL's vision is to continue to operate and develop Bankstown Airport to be:

".. a dynamic, integrated aviation and commercial centre for Sydney, including home for emergency services, general aviation, training, logistics and destination retail."

Bankstown Airport is the third busiest airport in Australia and the second busiest general aviation airport. The Airport operates on a 24/7 basis and serves as a flying base for Emergency Services, major flying schools and small to medium-size air freight, aircraft maintenance, charter and private business flights.

Home to more than 160 businesses, Bankstown Airport plays an important role as a major commercial centre within the Canterbury-Bankstown region.



MASTER PLAN 2019

BAL has prepared this Master Plan in accordance with requirements of the *Airports Act 1996* (Airports Act). The Airports Act requires BAL to prepare an Airport Master Plan every five years, setting out the 20 year strategic direction for the Airport, and a more detailed five year development strategy. This Master Plan builds on the 2014 Master Plan.

BAL presents this Master Plan as a vision and framework for the community, airport customers and all levels of government. It outlines the vision, objectives and strategic intent for future Airport growth and provides a clear direction for airport facilities development. This Master Plan also acts as an important link to planning strategies for Sydney and greater NSW.

The strategic vision for this Master Plan highlights BAL's commitment to developing the Airport as an aviation centre of excellence with an expanded role as a major economic and employment hub.

ECONOMIC SIGNIFICANCE

Airport operations currently contribute almost $1 billion annually and over 6,000 jobs to the NSW economy. This includes $697 million and nearly 4,500 jobs to the local Canterbury-Bankstown economy.

The implementation of this Master Plan will deliver significant growth in investment and employment and development of both aviation and non-aviation commercial activities.

This Master Plan forecasts new businesses and services associated with the Airport contributing $1.64 billion annually to the NSW economy, and generating 1,709 jobs over the next five years and nearly 4,000 jobs over the next 20 year planning horizons.

COMMUNITY AND STAKEHOLDER ENGAGEMENT

Bankstown Airport is a major source of jobs for the surrounding community. The Airport has a strong commitment to consultation and engagement, balancing the needs of airport customers and businesses, stakeholders, and the community.

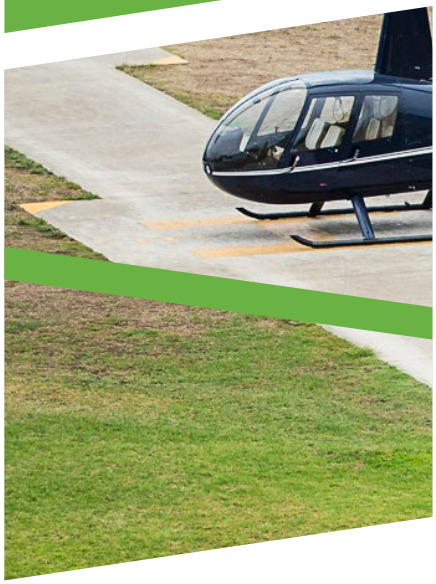
Extensive engagement with all levels of government, key stakeholders and the community will occur during Master Plan consultation.

AIRPORT FORECASTS

The objective of this Master Plan is to maintain Bankstown Airport's standing as the State's pre-eminent general aviation airport.

General aviation is forecast to grow by 3.8 per cent per annum over the next five years. Helicopters will form an increasingly important part of the aviation mix at the Airport, with helicopter movements forecast to grow by 4.6 per cent per annum during this period.

The future Western Sydney Airport will alter airspace operations in the Sydney basin in the longer term. Aviation forecasts in this Master Plan have not factored in the impact of the Western Sydney Airport, as it is not scheduled to commence operations until 2026.



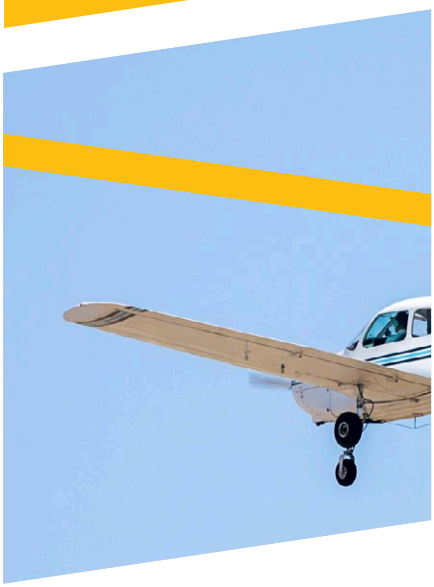
AIRCRAFT NOISE

BAL works actively with airport users, government agencies and community representatives on a range of initiatives to manage noise impacts from aircraft operations.

The most effective means for reducing the impact of aircraft noise is through the proper planning of land use for areas adjacent to the Airport. BAL works closely with Canterbury-Bankstown, Liverpool and Fairfield Councils in relation to the application of land use planning controls surrounding the Airport.

BAL has prepared forecasts which indicate minor changes in the level of noise generated by aircraft activity compared with the 2014 Master Plan. The changes are driven by a forecast increase in the number of aircraft movements.

The Airport has an established a voluntary Fly Neighbourly Procedures program.

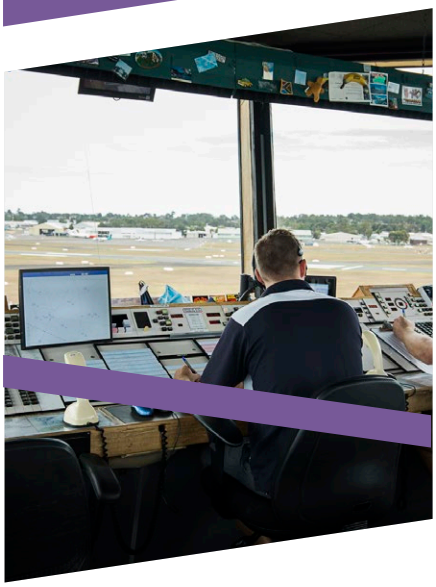


AIRPORT SAFEGUARDING

Long-term and effective Airport safeguarding is critical to ensuring aviation safety and ongoing operations.

This Master Plan describes the objectives of the Airport safeguarding strategy. These consider and build on the National Airport Safeguarding Framework, which aims to improve the following:

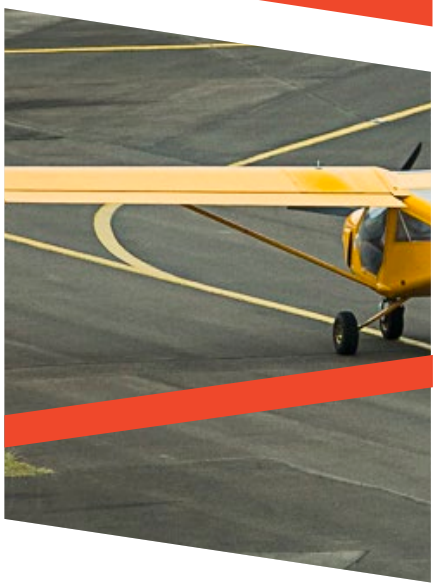
- Safety outcomes, by ensuring aviation safety requirements are recognised in land use planning decisions
- Community amenity, by minimising noise-sensitive developments near the airport
- Aircraft noise-disclosure mechanisms.



AVIATION INFRASTRUCTURE

Investment in facilities and infrastructure is necessary to facilitate continued growth in air traffic. New investment is planned to upgrade runways, taxiways, pavement, and airfield lighting.

This Master Plan retains the opportunity for a future extension of the Centre Runway (Runway 11C/29C), subject to aircraft operational demands, cost-benefit analysis and relevant approvals. It also retains the opportunity for limited Regular Public Transport (RPT) services at Bankstown Airport in the future.



LAND USE PLANNING

Land use planning at Bankstown Airport is administered under Commonwealth legislation.

The Land Use Plan features a number of updates to the 2014 Master Plan. These changes ensure the Airport meets evolving local and regional area needs, and provide more detail and visibility around the planned future for the Airport.

The planning framework is aligned with the NSW planning system.

The Airport has been divided into four zones:

1. Airport Business Zone
2. Aviation Zone
3. Commercial Zone
4. Industrial Zone.



DEVELOPMENT PROGRAM

The development program detailed in this Master Plan will increase the level of economic activity and employment generated by the Airport and meet the forecast aviation and non-aviation demand.

A major development component – a new Commercial Precinct in the south – will attract significant investment in new logistics and warehouse facilities, including retail areas with high amenity.

A major catalyst for change could be the Sydney Metro.

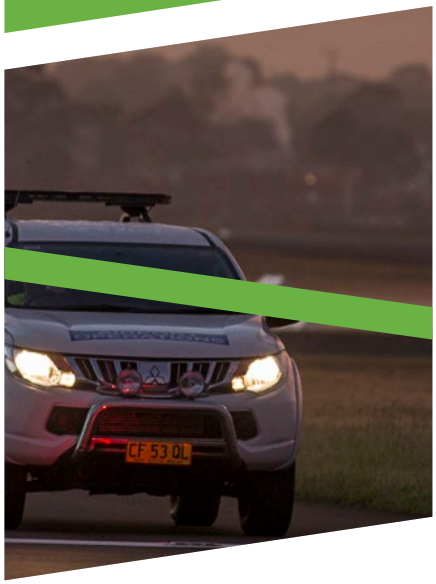


GROUND TRANSPORT

The Airport and surrounding road network are forecast to experience increased traffic due to local area development and the broader expansion of Western Sydney. The Ground Transport Plan (GTP) aims to optimise existing transport infrastructure and services over the next five years.

Development at the Airport will have some impact on traffic on surrounding roads, particularly in the South West Precinct. Upgrades to roads and intersections surrounding the Airport and construction of a new internal road will assist in mitigating some of these pressures.

In the longer term, a new passenger rail line directly connecting Bankstown and Liverpool, with a station at the Airport, would significantly enhance growth and economic development both in surrounding areas and at the Airport.



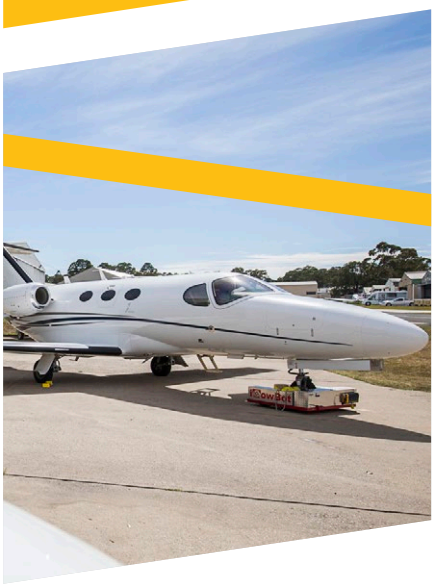
SERVICES AND INFRASTRUCTURE

BAL owns and maintains an extensive network of utilities including power, water, sewer, natural gas, telecommunications and stormwater. The Airport works closely with utility authorities to ensure that these essential services are available in sufficient quantity and reliability to support Airport operations.

The Airport is committed to investing in services infrastructure with the objectives of:

- Improving reliability and redundancy in utility networks
- Improving the sustainability of the supply arrangements
- Continuing to support growth projected to occur at the Airport.

Demand management and alternative supply arrangements will play a key role in ensuring that utility networks are able to efficiently and sustainably to support projected Airport growth.



ENVIRONMENT STRATEGY

BAL is committed to continually improving environmental management by fostering a culture of shared responsibility in all areas of Airport operations. Major environmental aspects addressed in this Master Plan and the Airport Environment Strategy (AES) are:

- Air quality
- Heritage
- Biodiversity
- Soil and water
- Hazardous substances
- Ground-based noise.

This Master Plan features a major review and update of the AES, providing a stronger emphasis on environmentally sustainable outcomes. Working with our Airport tenants, we will identify opportunities to minimise impacts on the environment and community by reducing energy, fuel and water use and minimising waste.







1.0

INTRODUCTION



1.1 WELCOME TO THE BANKSTOWN AIRPORT MASTER PLAN 2019

BANKSTOWN AIRPORT IS THE PREMIER GENERAL AVIATION AIRPORT AND A MAJOR COMMERCIAL CENTRE IN SYDNEY.

THIS MASTER PLAN 2019 SETS OUT A LONG-TERM PLAN TO EXPAND THE AVIATION AND BROADER ECONOMIC AND COMMERCIAL ROLE OF THE AIRPORT.

SINCE ITS ESTABLISHMENT IN 1940, THE AIRPORT HAS ENABLED THE GENERAL AVIATION INDUSTRY IN NSW TO GROW. IT MAKES A SIGNIFICANT CONTRIBUTION TO THE ECONOMY.



The Airport is operated and managed by Bankstown Airport Limited (BAL). BAL aspires to develop both aviation and non-aviation activities at the Airport. Priorities for aviation activity include expanding and introducing new:

- Emergency Services
- Flight training
- Aircraft maintenance
- Specialist aviation activities.

Major non-aviation initiatives include developing the South West Precinct.

This Master Plan outlines the Airport's development over the next five years and provides a strategic vision for the next 20 years. It provides details of investment in high quality facilities that will underpin Airport growth – enabling the Airport to become a modern and sophisticated aviation and business centre.

The Bankstown Airport Master Plan 2019 was approved by the Commonwealth Minister for Infrastructure, Transport and Regional Developments on 7 November 2019.



Figure 1.1: Snapshot of Bankstown Airport today

1.2 VISION AND OBJECTIVES

"Bankstown Airport is a dynamic integrated aviation and commercial centre for Sydney, including a home for emergency services, general aviation, training, logistics and destination retail."

AVIATION: A CENTRE OF EXCELLENCE FOR AVIATION

- Provide a home for general aviation and emergency service aviation
- Grow flight training and other aviation training activities
- Enhance existing aviation infrastructure
- Ensure the safety, security, reliability and efficiency of aviation operations
- Safeguard aviation operations from incompatible development, both on and surrounding the Airport

ECONOMY: CREATING MORE JOBS AND CONTRIBUTING TO WESTERN SYDNEY GROWTH

- Continue to develop the Airport as a major economic and employment hub within the Bankstown and South Western Sydney regions
- Deliver aviation and non-aviation property development opportunities at the Airport, including the South West Precinct in the Commercial Zone
- Accommodate a major transit node on the Airport for the future Sydney Metro Southwest extension from Bankstown to Liverpool stations

ENVIRONMENT: CONTINUE TO BUILD A CULTURE OF RESPONSIBILITY IN EVERY ASPECT OF OUR BUSINESS

- Demonstrate environmental stewardship and responsibility in all Airport operations
- Achieve a balance between the development and operations of the Airport and mitigation of environmental impacts

COMMUNITY: A GOOD NEIGHBOUR

- Continue to be a good neighbour by working closely with the Canterbury-Bankstown, Fairfield and Liverpool councils and supporting the local community
- Support local employment and jobs growth in Western Sydney




Olga

2.0

THE MASTER PLAN

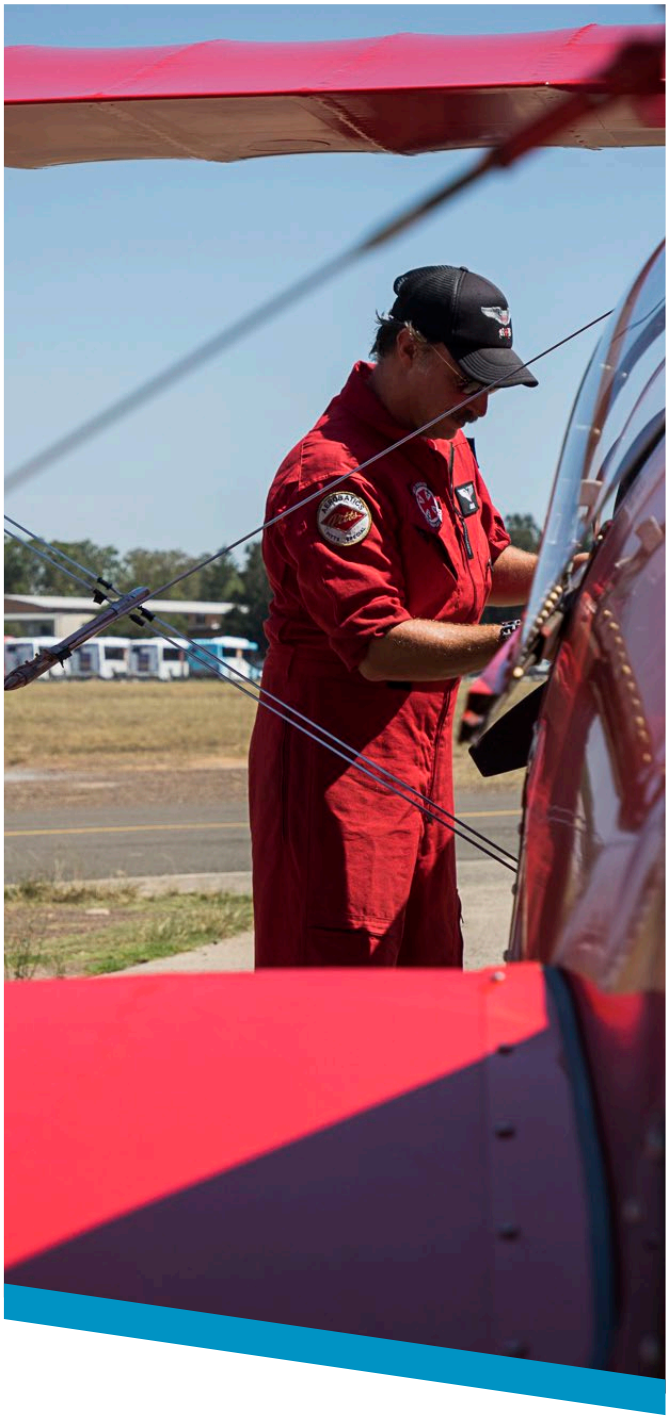


2.1 PURPOSE OF THE MASTER PLAN

This Master Plan 2019 for Bankstown Airport is the principal planning document for the Airport. It describes future aviation operations, land use, facilities and infrastructure, and the management of environmental and noise impacts.

The Master Plan:

- Provides stakeholders with a clear statement of BAL's vision and objectives for the Airport
- Presents a land use plan which balances long-term aviation requirements with new non-aviation developments
- Provides sufficient flexibility for BAL to adjust its plans to accommodate a changing commercial and operating environment
- Reflects local Canterbury-Bankstown Council and NSW planning frameworks.



2.2 REGULATORY FRAMEWORK

This Master Plan has been prepared in accordance with requirements of the Airports Act, which is administered by the Commonwealth Department of Infrastructure, Transport, Cities and Regional Development (DITCRD).

The Airports Act requires the Master Plan to:

- Cover a planning period of 20 years
- Be reviewed every five years (eight years for future Master Plans), subject to regulations
- Specify BAL's development objectives for the Airport
- Assess the future needs of civil aviation users and other users
- Specify BAL's proposals for land use and related development
- Include forecasts relating to noise exposure levels and flight paths
- Include BAL's plans for managing aircraft noise intrusion above significant aircraft noise exposure forecast (ANEF) levels
- Specify information about proposed developments for the first five years
- Assess the likely effect on employment at the Airport, and on the local and regional economy and community in the first five years of the Master Plan
- Be made available for public comment for a period of 60 business days
- Satisfy the relevant requirements of the *Airports Regulations 1997* (Airports Regulations).

The Airports Act also requires an Airport Environment Strategy to be prepared with this Master Plan.
The master planning process has regard to other Commonwealth legislation relating to:

- Land use planning and development controls
- Building and construction approval processes
- Airspace protection
- Pricing and quality of service monitoring
- Environmental management.



2.3 DEVELOPING THE MASTER PLAN

The Airports Act sets out the process to prepare the Master Plan, as shown in Figure 2.1.

The Master Plan has been prepared following extensive consultation and engagement prior to the public consultation phase, to engage with DITCRD and key stakeholders.

The formal public consultation phase for the Master Plan is detailed in Section 2.4.



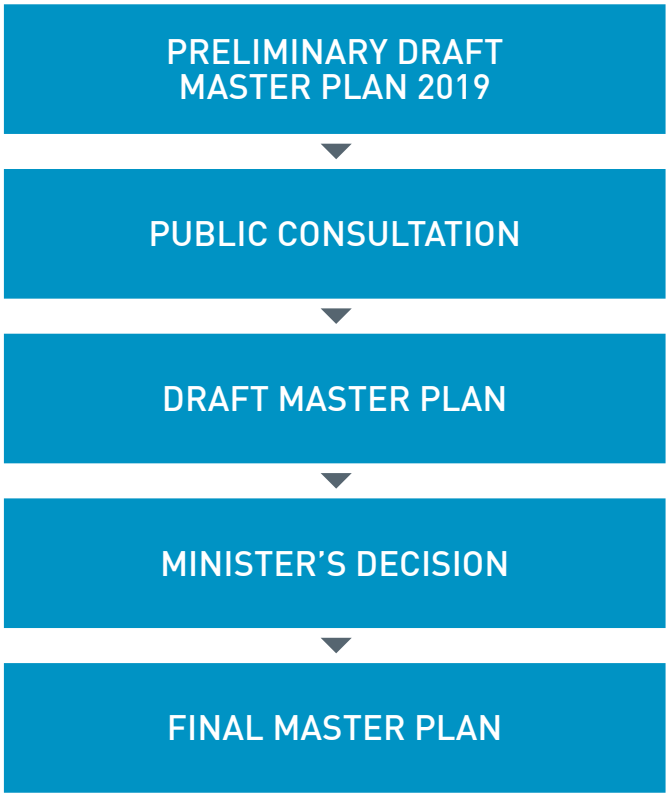


Figure 2.1: Master Plan Preparation Process

2.4 MASTER PLAN CONSULTATION

BAL is committed to continuing engagement with its stakeholders and is aware of the importance of the Airport to the local community. BAL will work with the community in relation to developing the Airport into a major economic and employment hub, and being a good neighbour to surrounding residents. BAL has demonstrated a strong track record of stakeholder and community engagement and has continued to do so during the preparation and consultation for this Master Plan.

2.4.1 ENGAGEMENT APPROACH

The following objectives have guided BAL's approach to communication and stakeholder engagement during the Master Plan preparation process:

- Provide the community with a long-term vision for the Airport
- Inform the local and wider community about the Airport's role in economic development and employment growth
- Explain how the South West Precinct development (and other projects) will facilitate the long-term vision for the Airport
- Create awareness of the Master Plan and keep the community and stakeholders informed throughout its development
- Provide a range of opportunities for stakeholders, interest groups and the wider community to be informed about the Master Plan and provide feedback
- Ensure ideas, issues, concerns and opportunities identified by stakeholders are given consideration during Master Plan preparation
- Continue to build strong stakeholder relationships and partnerships with the community, which continue beyond the Master Plan
- Create an accessible and inclusive process for stakeholder and community input.

BAL's approach to consultation has focused on creating robust, transparent and engaging communications. It has:

- Met the legislative consultation requirements in the Airports Act
- Explained the benefits of the Airport in terms of increased employment opportunities and economic growth in Western Sydney
- Reached a wide stakeholder group, including federal, state and local government, business, tenants and the general community
- Used creative, innovative and engaging communication techniques to interact with the community
- Continued to develop a positive and cooperative relationship with Canterbury-Bankstown, Liverpool and Fairfield Councils
- Used the existing Bankstown Airport Community Aviation Consultation Group (BACACG) formerly known as the Bankstown Airport Community Consultation Forum (BACCF) and Planning Coordination Forum (PCF) for ongoing consultation about Airport management.

2.4.2 AIRPORTS ACT ENGAGEMENT REQUIREMENTS

The Airports Act requires BAL, when consulting on the Master Plan, to:

- Inform DITCRD, the NSW Minister for Planning and Public Spaces, Department of Planning, Industry and Environment, and the Canterbury-Bankstown, City of Fairfield, and City of Liverpool Councils that a Master Plan has been prepared
- Publish a notice about the consultation in the Sydney Morning Herald
- Place information about the consultation on BAL's website
- Display the Preliminary Draft Master Plan at the Airport and in surrounding locations
- Have a minimum 60 business day consultation period
- Provide a summary of how comments received during consultation have been addressed.

2.4.3 STAKEHOLDER ENGAGEMENT IN THE PREPARATION OF THE MASTER PLAN

BAL regularly consults and engages with the community and key stakeholders, about future plans, developments and operations for the Airport.

As part of this ongoing commitment, a Consultation Strategy was developed to guide communications and engagement activities for the public consultation of the Preliminary Draft Master Plan. The Consultation Strategy:

- Ensured that BAL addressed its legislative requirements as outlined in Section 79 and 80 of the Airports Act
- Identified additional communication activities for the effective public consultation of the Preliminary Master Plan
- Was guided by the International Association for Public Participation Spectrum which helped to identify the most appropriate.

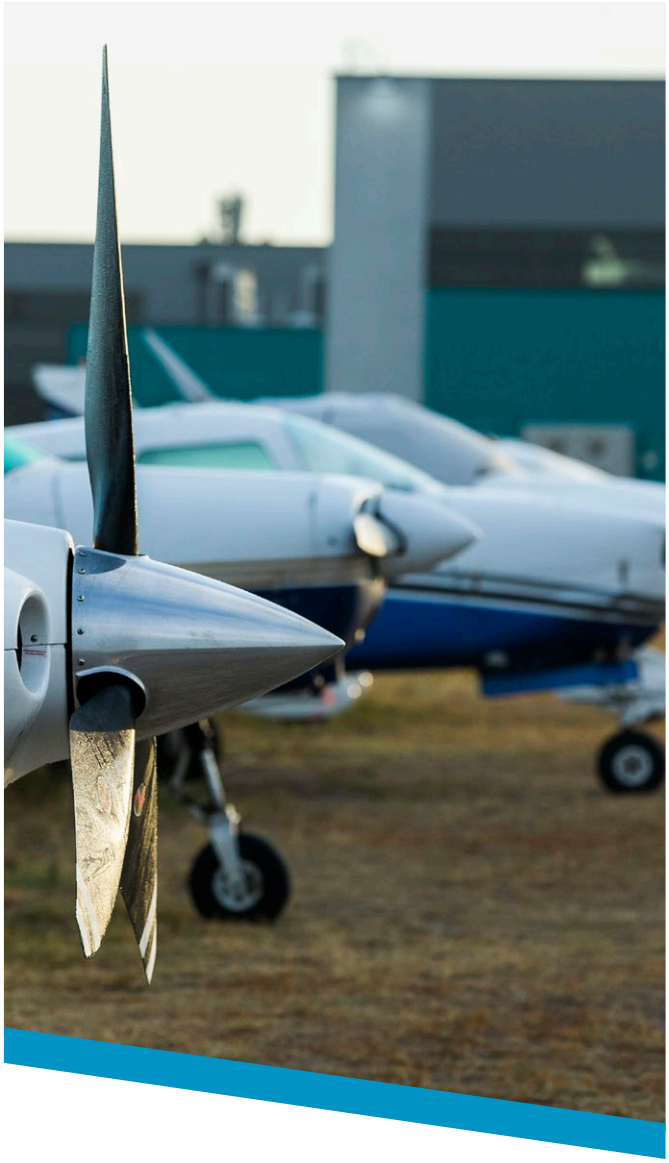
As required by the Act, the Bankstown Airport Preliminary Draft Master Plan 2019 was exhibited for public consultation for 63 business days from 26 October 2018 to 25 January 2019. Throughout this phase, a range of stakeholder and community engagement activities were undertaken, including:

- Public notification the Preliminary Draft Master Plan had been released for public comment
- Public display of the Preliminary Draft Master Plan
- A dedicated Master Plan website, email and phone line
- A notice in the Aero Flyer October edition and a special edition specifically for the Master Plan
- A Bankstown Airport Master Plan 2019 Quick Reference Guide and five fact sheets
- Community Information sessions
- Master Plan presentation to the Airport tenants.

A summary of the engagement approach and issues raised during public consultation of the Preliminary Draft Bankstown Airport Master Plan 2019 is outlined in Appendix I.

2.4.4 ONGOING CONSULTATION AND ENGAGEMENT

The BACACG (in its different forms) has operated since 2005. Representative members of the community are selected based on an open expression of interest and their ability to meet specifically-designed criteria. The BACACG's role is to enable stakeholders to be consulted and become involved in the master planning process and issues relating to ongoing Airport management. The group has been engaged on a regular basis throughout the Master Plan preparation process.



2.5 PREVIOUS MASTER PLANS

Since Airport privatisation in 2003, two Master Plans have been prepared. The *2004/05 Bankstown Airport Master Plan* was approved on 7 March 2005. The current 2014 Master Plan was approved on 19 December 2014. The 2014 Master Plan will remain in force for a period of five years from the date of approval, or until it is replaced by the Master Plan 2019.

The 2014 Master Plan outlined the strategic direction for Airport development over a 20 year period, and detailed BAL's aviation and non-aviation development concept. It also addressed key issues such as road traffic, infrastructure, environmental management and heritage protection and provided a five year implementation plan.

The 2014 Master Plan also incorporated the following items for the first time:

- An implementation plan for the first five years
- A socio-economic impact assessment of the Master Plan
- A five year Ground Transport Plan (GTP) for the Airport
- An Airport Environment Strategy, which presented BAL's objectives for and an approach to managing the environment at the Airport.

2.5.1 ACHIEVEMENTS SINCE THE 2014 MASTER PLAN

Over the past five years since preparing the 2014 Master Plan, BAL has focused on reviewing and implementing new management policies and procedures. It has also directed its energies into empowering the new management team to deliver its statutory, community and development roles for the long-term future of Bankstown Airport.

Key achievements during this period are shown in Figure 2.2.

MANAGEMENT AND OPERATIONS

- ✓ Single ownership of the Airport
- ✓ New and additional management team
- ✓ Focus on aviation operations, compliance, financial and environmental management
- ✓ Continued communication with all Airport operators



AVIATION

- ✓ Safety policies review and related compliance
- ✓ Airport inspections and upgrades to ensure compliance
- ✓ Forum on Western Sydney Airport (FOWSA) participation
- ✓ Sydney Airspace Review
- ✓ New Toll Ambulance and ACE Facility



ENVIRONMENT

- ✓ Complete ongoing environmental monitoring
- ✓ Further developed Environmental Management System
- ✓ Managing and protecting endangered / threatened species
- ✓ Vegetation maintenance and monitoring of critical endangered *Hibbertia Glabrescens MS*
- ✓ Deverall Park bush regeneration works
- ✓ Proactive governance for gathering information
- ✓ Increased engagement with Airport customers
- ✓ Increased participation in environmental audits



TECHNICAL AND ECONOMIC ASSESSMENTS

- ✓ Annual review and implementation of fire safety statements
- ✓ Airport-wide flood management modelling/strategy
- ✓ Airport-wide heritage management assessment/plan
- ✓ Review of the development approval process
- ✓ Airport-wide aviation pavement assessment
- ✓ Taxiway restructure and rename for ease of use



DEVELOPMENT

- ✓ Consolidation of South West Precinct control to BAL
- ✓ Consolidation of land/buildings controlled by Bankstown Airport Corporation Development Company (BAC Devco to BAL)
- ✓ Major Development Plan approval for NSW Police Air Wing
- ✓ New/refurbished aviation and non-aviation facilities



Figure 2.2: Key Achievements since the 2014 Master Plan



3.0

THE AIRPORT



3.1 BANKSTOWN AIRPORT

3.1.1 THE AIRPORT TODAY

Bankstown Airport is located almost 26 kilometres south-west of the Sydney Central Business District (CBD) and incorporates over 160 businesses within its 313 hectare site. Figure 3.1 provides details of the layout of Bankstown Airport today.

The Airport enables movements of fixed-wing aircraft, helicopters and related aircraft maintenance activities through its three runway complex. Aviation activities include emergency services, air freight, flight training, general aviation, charter flights and aircraft sales and maintenance.

BAL is the Airport Lessee Company for the Airport. Over the past decade, non-aviation activities including property management and development have become an increasingly important part of BAL's business.

Growth in operational revenue has assisted BAL to create a profitable Airport operating business, which has contributed to BAL's capacity to invest in and maintain infrastructure and services for all users.



Almost $1B
Annual contribution to NSW economy



248,000
Movements in 2017



3RD
Most active airport in Australia

3.1.2 HISTORY OF BANKSTOWN AIRPORT

Bankstown Airport was established as Sydney's second aerodrome in 1940 following the commencement of World War II. The Royal Australian Air Force (RAAF) and the Women's Australian Auxiliary Air Force (WAAAF) were based at the Airport before the arrival of the United States military. The Bankstown area was commonly known as 'Yankstown', with several squadrons belonging to the United States Army Air Forces located on the site during World War II.

Following the War, the Airport was used by the Department of Immigration to accommodate European migrants until mid-1950. By 1970, the Airport emerged as the largest general aviation airport in the Southern Hemisphere with more than 250,000 aircraft movements annually.

The Commonwealth Department of Civil Aviation expanded airport operations in 1980. Eight years later the Airport was operated and controlled by the Federal Airports Corporation (FAC). In 1998, the Airport was privatised and transferred to BAL.

Significant stages in the evolution of the Airport are shown in the timeline figure, Figure 3.2.

Airport heritage is important and its values have been incorporated into the Airport Environment Strategy in Section 12. BAL's approach to Airport heritage protection and management is presented in Section 12.4.2.

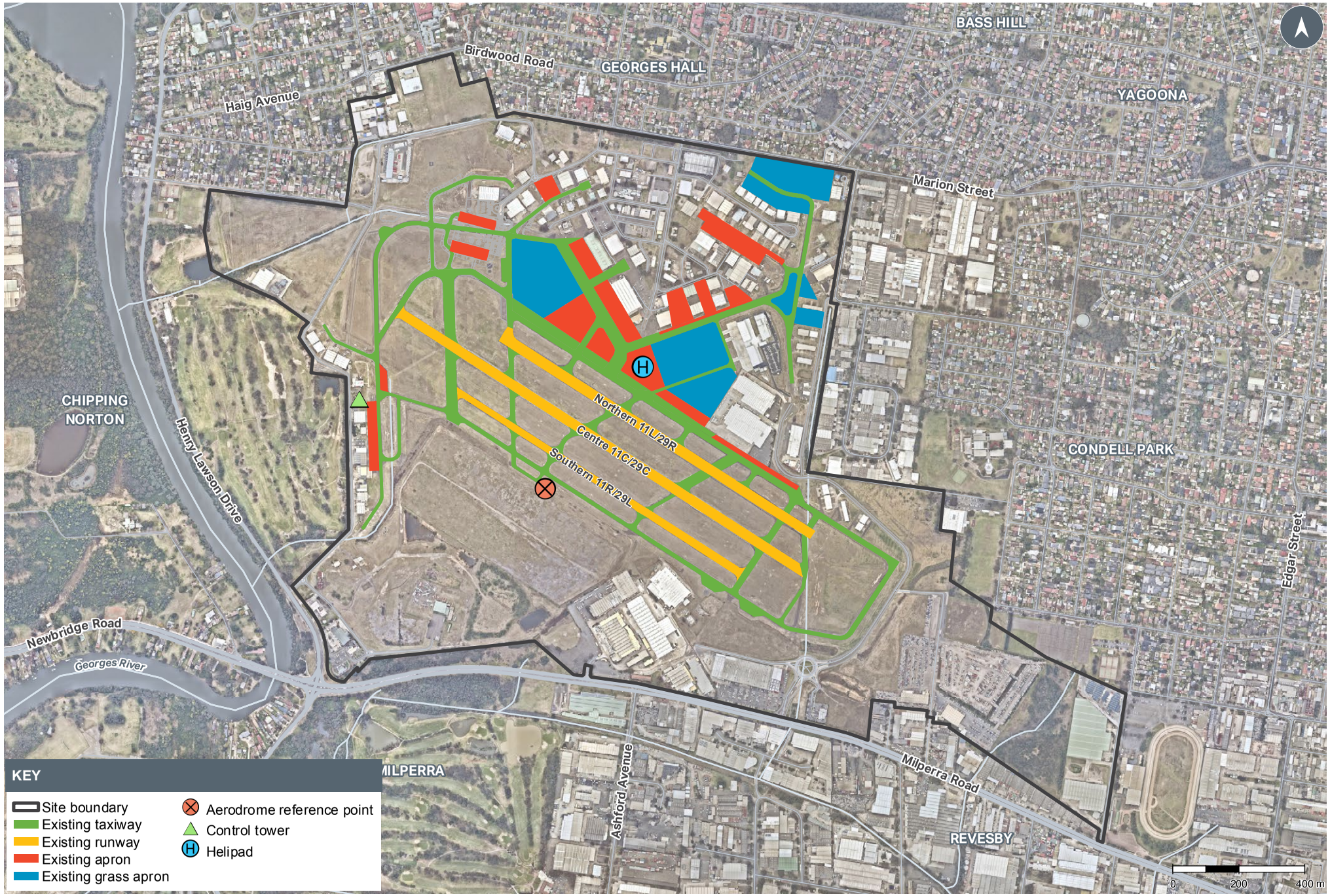


Figure 3.1: Bankstown Airport Today

EARLY BEGINNINGS

1940-1945
Bankstown Airport was first a RAAF station, then a United States Army Air Corps base and then a Royal Naval Fleet Air Arm Station (HMS Nabberly).



1952
A gravel runway was constructed in the 11/29 direction (914m).

1962
New operational procedures were introduced using three runway directions (11/29, 18/36 and 05/23). A second 1,190 metre runway was constructed also in the 11/29 direction. The centre runway (11C/29C) was strengthened to F27 standard for operations by Sea Venom jets.

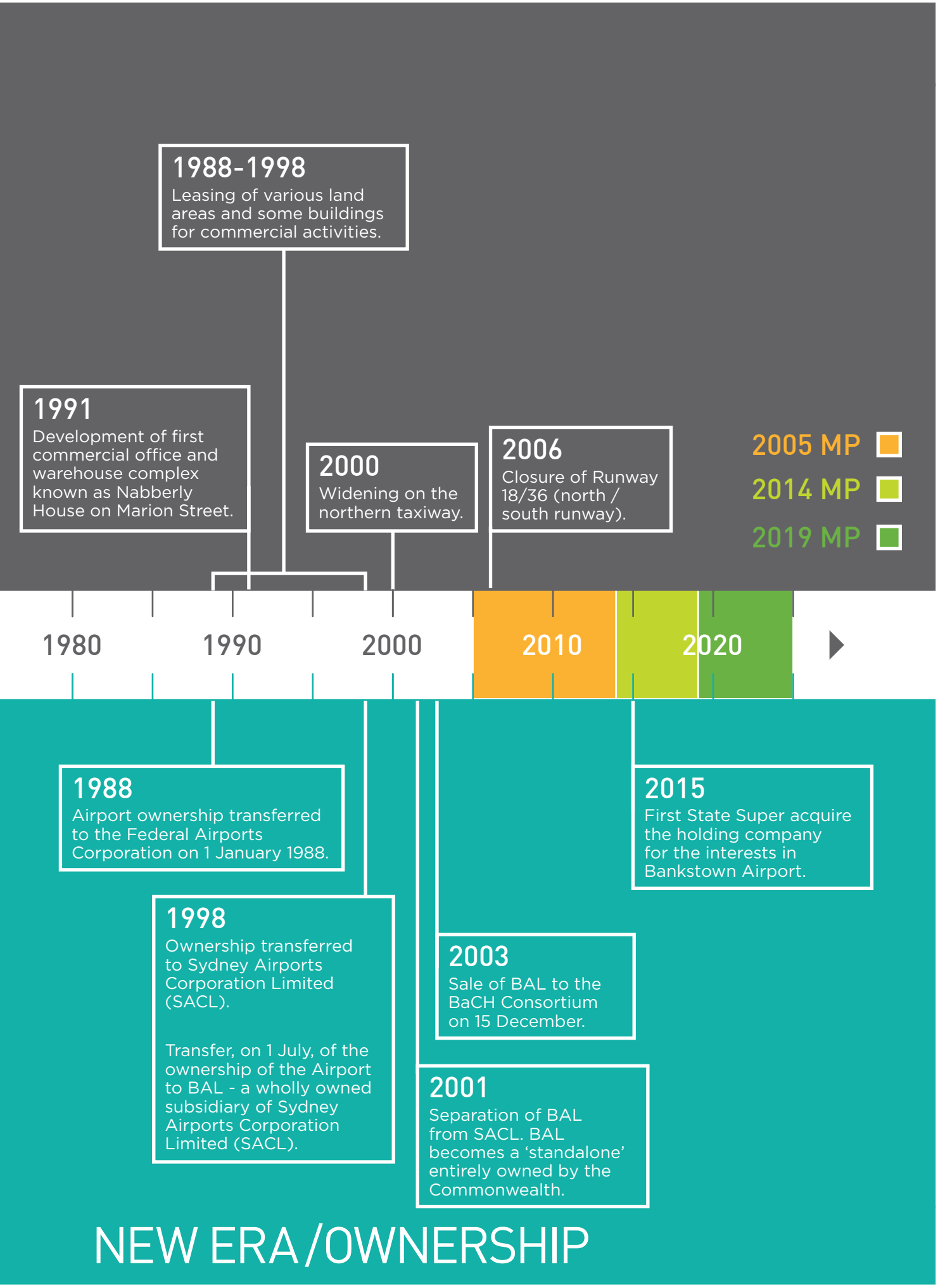
1920 1930 1940 1950 1960 1970

1929
The Bankstown Airport site was identified by the (then) Department of Civil Aviation (DCA). The intention of the DCA was to develop the site as a second or training airport for Sydney.

1948
The Commonwealth Government approves the development of the Mascot site as the international airport. Control of Bankstown Airport passed to the Department of Civil Aviation in November 1948.



Figure 3.2: Bankstown Airport Timeline



NEW ERA/OWNERSHIP

3.2 AIRPORT OPERATIONS

Bankstown Airport accommodates an average of 700 aircraft movements each day. It operates on a 24/7 basis and currently averages approximately 247,500 movements each year, with capacity for up to 450,000 movements. The Airport is the third most active airport in Australia in terms of aircraft movements.



3.3 ROLE OF BANKSTOWN AIRPORT

Bankstown Airport serves as a flying base for emergency services. These services include the NSW Police Aviation Support Branch, the National Parks and Wildlife Service and NSW Ambulance.

Major flying schools are located at the Airport and include the UNSW School of Aviation, TAFE NSW (Sydney Flight College), Soar Aviation and Basair Aviation College. Airport operations also include small- to medium-size air freight, charter and private business flights. Aviation-related services at the Airport include aircraft sales, service and maintenance for general aviation aircraft.

There is currently no Regular Public Transport Services (RPT) at the Airport. However, a passenger terminal capable of supporting passenger aircraft operations by both turbo prop and regional jet operators is provided should limited RPT be reinstated in the future.

The Airport provides a location for significant non-aviation activities including wholesale and retail trade, manufacturing, transport services, construction and education.

Development of the Western Sydney Airport at Badgerys Creek has implications for the Airport's future role. Changes will need to be made to airspace use within the Sydney Basin once the Western Sydney Airport commences operating in 2026. BAL is working closely with the Western Sydney unit within the DITCRD as well as an Expert Steering Group on this matter.



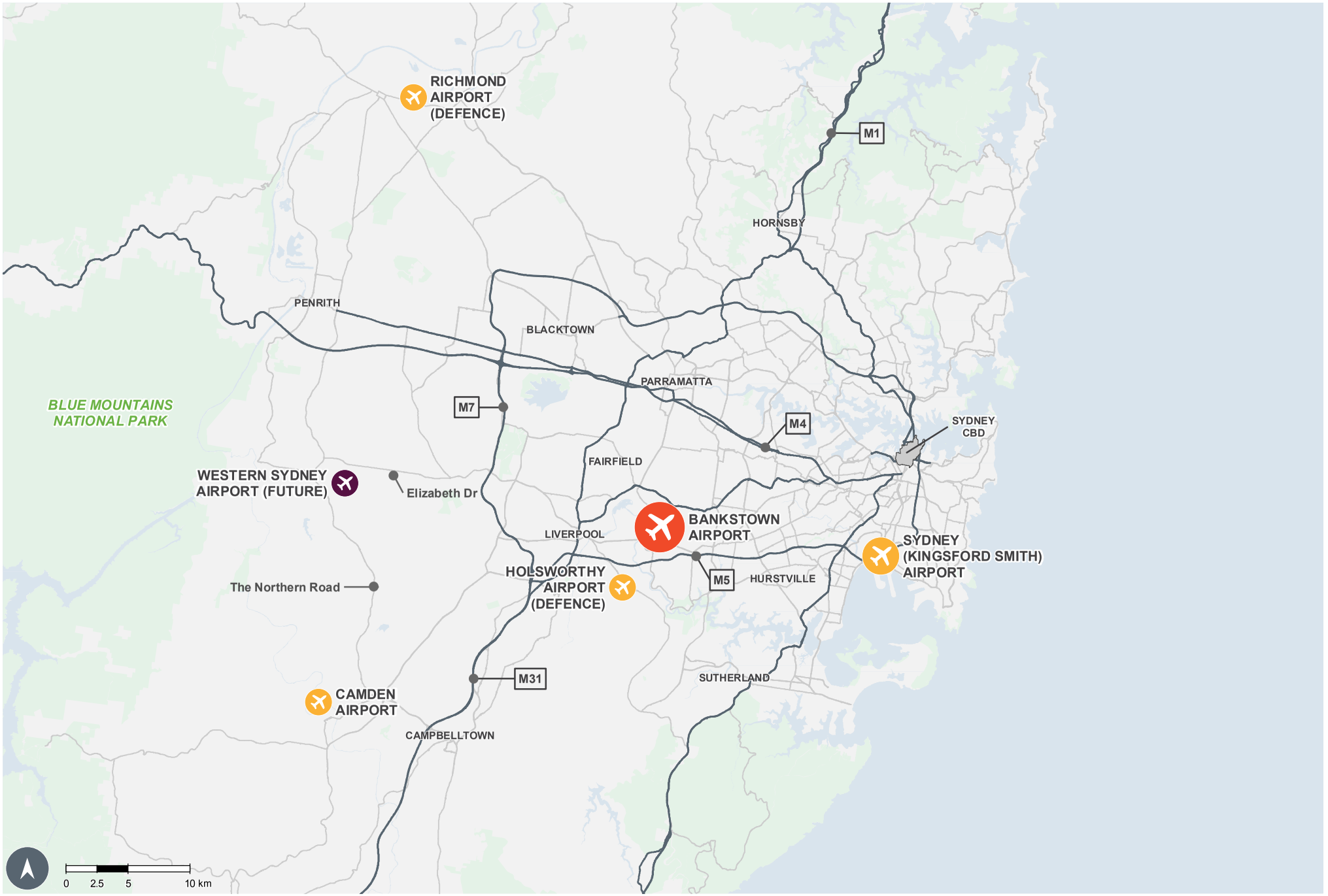


Figure 3.3: Regional Context for Bankstown Airport

3.3.1 BANKSTOWN AIRPORT'S CONTRIBUTION TO SYDNEY AVIATION

Bankstown Airport's central location within metropolitan Sydney provides an advantage in terms of its accessibility from the Sydney CBD and Western Sydney business hubs. The Airport will continue to play a significant role as a specialist airport for emergency services, aviation training, freight and charter aircraft services.

There is potential for the Airport to accommodate additional general aviation activity as Sydney Airport becomes more constrained.

Figure 3.3 shows Bankstown Airport's location in relation to other major airports in the Sydney region, including the future Western Sydney Airport. Details of these airports are provided below.

SYDNEY AIRPORT

Sydney (Kingsford Smith) Airport is Sydney's major airport, providing passenger services to international, interstate and regional destinations. Located approximately 17 kilometres to the east of Bankstown Airport, Sydney Airport serves as Australia's gateway to the international air transportation system. The two airports are connected via the M5 Motorway.

Boeing and Airbus aircraft frequently take-off and land at Sydney Airport. Current aircraft models include B747s, B787s, B777s, B767s, B737s, A340s, A320s and A380s.

General aviation activity includes helicopters, corporate and charters. In 2012, this constituted 6.7 per cent of total aircraft movements at Sydney Airport (Sydney Airport Master Plan 2033).

Sydney Airport is approaching its maximum capacity and may need to relocate smaller aircraft to other airports within the Sydney Region in the future (Sydney Airport Master Plan 2033).

CAMDEN AIRPORT

Camden Airport is 30 kilometres south-west of Bankstown Airport and two kilometres north-west of the town of Camden. Camden Airport occupies a 196 hectare site and has two general aviation runways, and two grass strips for glider activity. It is used for sport aviation, private flying, flying training and ballooning activities, and is the regional gliding centre for Sydney. The airport site also supports some aviation and non-aviation related commercial enterprises.

RAAF RICHMOND

The RAAF base in Richmond is located 50 kilometres north-west of Sydney CBD and approximately 40 kilometres north-west of Bankstown Airport. RAAF Richmond occupies a 270 hectare site, which houses the military aviation activities for the RAAF Heavy Lift Group with a single sealed runway with a length of 2,134 metres.

Some civilian general aviation activity is allowed, including practice instrument landing system (ILS) approaches and gliding activity on weekends.

The operation of RAAF Richmond is significant due to the impact it has on air traffic control and airspace management in the Sydney Region.

HOLSWORTHY (MILITARY) AIRPORT

Holsworthy Airport is located within the Holsworthy Military Reserve, which has restricted public access. This airport is 26 kilometres south-west of the Sydney CBD and eight kilometres south of the Airport. Access to the airport is restricted and only suited to use by light aircraft, with a runway length of 580 metres.

3.3.2 PROPOSED WESTERN SYDNEY AIRPORT

In April 2014, the Commonwealth Government announced Badgerys Creek as the site for a new airport in Western Sydney. An opening date of 2026 has been established for the airport, which has been planned with an initial single 3,700 metre runway and terminal and other support facilities.

On opening, the Western Sydney Airport will be a full-service airport offering domestic, international and freight air services. It is anticipated that this new airport will accommodate 10 million passenger movements per annum within the first five years of operation, and transport 265,600 tonnes of freight per annum.

As Sydney Airport approaches its full capacity, it is anticipated that Western Sydney Airport will absorb a significant proportion of future demand for passenger and freight services. Beyond the initial stage, Western Sydney Airport will be further developed in line with demand to include a substantial terminal, support and commercial facilities. As demand approaches 37 million passengers per year, anticipated by 2050, a second parallel runway may be required. Western Sydney Airport is expected to be capable of handling approximately 82 million passengers per year by 2063.

Western Sydney Airport operations will alter airspace arrangements within the Sydney Region. Over the long term, flight training movements and other activities originating from Bankstown Airport may be impacted by these airspace changes.

Due to this potential impact, BAL has engaged with the DITCRD, CASA, and Airservices through both FOWSA and direct contact, to provide possible operational options to reduce the impacts on those using Bankstown Airport once Western Sydney Airport begins operations in 2026.

WESTERN SYDNEY AEROTROPOLIS – LAND USE AND INFRASTRUCTURE IMPLEMENTATION PLAN – STAGE 1: INITIAL PRECINCTS

The NSW Government in August 2018 released the *Western Sydney Aerotropolis – Land Use and Infrastructure Implementation Plan – Stage 1: Initial Precincts.* This Land Use and Infrastructure Implementation Plan (LUIIP) sets out a planning framework to support all levels of government and spread the benefits of population and economic growth across Greater Sydney. The draft Stage 1 plan provides a foundation for a conversation with the community and industry, enabling a collaborative approach to the finalisation of the Plan, which will set the strategic direction for the Aerotropolis.

The LUIIP aligns with the Greater Sydney Region Plan and provides the initial framework for developing the Western Sydney Aerotropolis, focussed on the planned Western Sydney Airport.

3.4 ECONOMIC SIGNIFICANCE TODAY

Bankstown Airport serves as a major economic and employment hub within the Canterbury-Bankstown Local Government Area (LGA) and south-western Sydney region.

This section provides an overview of the Airport's economic contribution and forecast growth. Implementation of this Master Plan is forecast to deliver significant growth in investment and employment through aviation and non-aviation commercial activities development.

Current airport operations contribute nearly $1 billion annually and over 6,000 jobs to the NSW economy. Locally, it contributes $697 million and nearly 4,500 jobs to the Canterbury-Bankstown economy. A high proportion of employment is in manufacturing, aircraft repairs, construction and pilot education, with a smaller proportion of jobs in retail trade, business services and public administration.

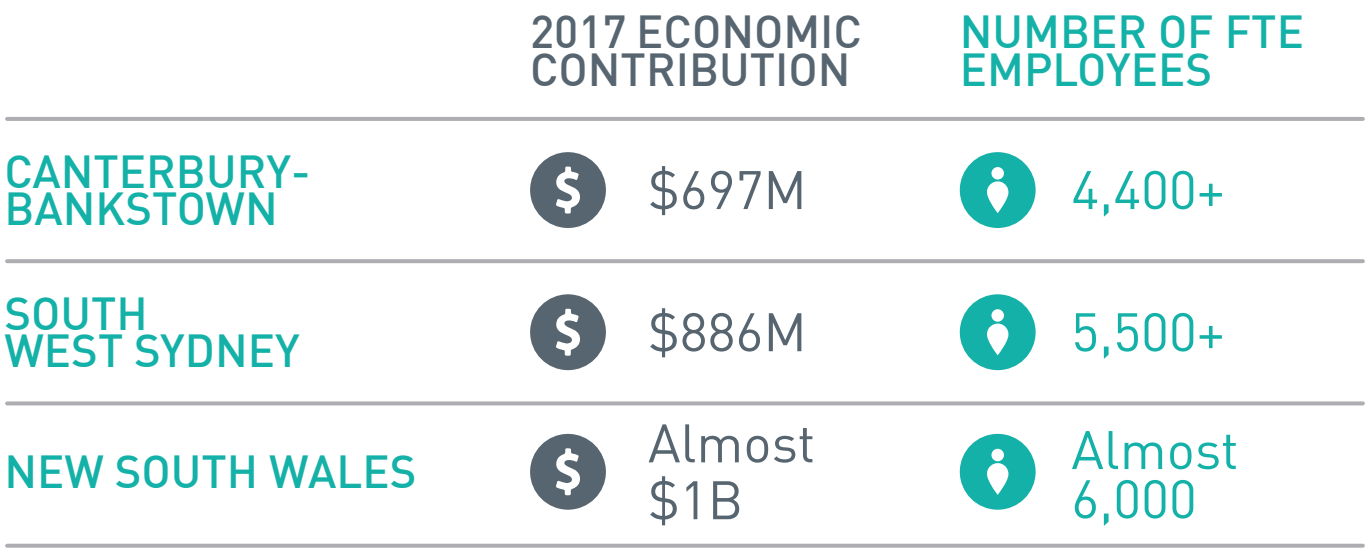


Figure 3.4: Bankstown Airport Regional Economic Impact 2017 (Source: Hudson Howell 2018)

Table 3.1: Regional Economic Impact 2017 (Source: Hudson Howell 2018)

Current	Canterbury - Bankstown	South West Sydney	New South Wales
Airport Operations			
Economic Contribution ($m)	$691.6m	$875.6m	$951.1m
Employment	4,449	5,484	5,928
Capital Investment			
Economic Contribution ($m)	$5.2m	$10.1m	$15.0m
Employment	35	65	96
Total Economic Impact (2017)			
Economic Contribution ($m)	$696.7m	$885.7m	$966.2m
Employment	4,483	5,550	6,024

3.5 REGIONAL SIGNIFICANCE

3.5.1 STRATEGIC ATTRIBUTES OF BANKSTOWN AIRPORT

The strategic attributes driving the development concept in this Master Plan include:

- Strategic location of the Airport within the Greater Sydney context
- A growing emergency services role and general aviation focus on training and maintenance
- The Airport's role as a trade gateway in Western Sydney
- Significant land development opportunities within the Airport site, particularly adjacent the Milperra industrial area in the South West Precinct of the Airport.

The New South Wales Government recognises Bankstown Airport as an important strategic asset. It has plans to protect airport operations from encroachment and incorporate non-aviation development at the Airport into its economic plans for the region.

3.5.2 GREATER SYDNEY REGION PLAN

The *Greater Sydney Region Plan*: Our Greater Sydney 2056 (Greater Sydney Regional Plan) prepared by the Greater Sydney Commission in 2018 sets out a 40-year vision for the city's future and a plan for the next 20 years. The vision for Sydney is based on the concept of 'a metropolis of three cities' comprising the current CBD, the emerging CBD of Parramatta and a new western Sydney CBD to be planned as part of the future Western Sydney Airport. Key elements of the plan are show in Figure 3.5, which identifies Bankstown Airport as a significant 'Trade Gateway'.

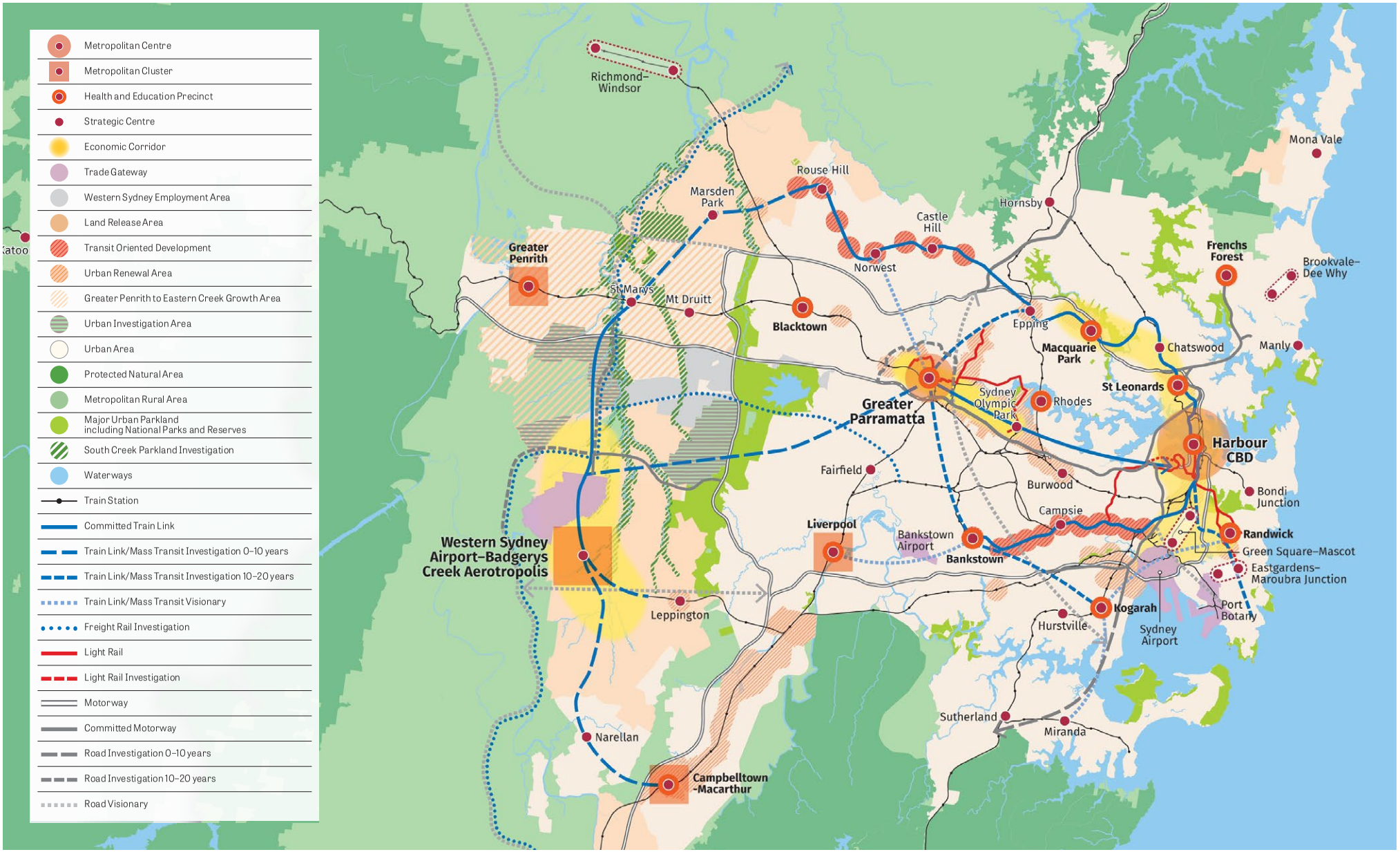


Figure 3.5: Greater Sydney Region Plan (Source: Greater Sydney Commission 2018)

3.5.3 SOUTH DISTRICT PLAN

Bankstown Airport is located within the South District of Greater Sydney. The *South District Plan* (South District Plan) prepared by the Greater Sydney Commission in 2018 is a guide for implementing the Greater Sydney Region Plan at a District level and sets out specific aspirations and proposals for the South District.

The South District Plan identifies the potential for the Airport to further benefit South District and NSW economy. The South District Plan recognises the need for the Airport to be strategically planned in the context of the Western Sydney Airport and Badgerys Creek Aerotropolis. In doing so, the South District Plan identifies the need to manage airspace and the future distribution of regional and freight aviation services.

The Airport is identified as one of four Trade Gateways in the South District and its development as an economic catalyst for the South District is identified as one of the overall 18 Planning Priorities (Planning Priority S8).

The South District Plan references Bankstown Airport Master Plan 2014, recognising the development opportunity of 130 hectares of land within the Airport site adjacent to the Milperra industrial land for future non-aviation uses, with the aim of developing an industrial economic and employment hub. The South District Plan identifies that the Airport site and the established Milperra industrial area, have ready access to air transport, road and rail freight networks, the proposed Moorebank intermodal terminal, Liverpool and Bankstown activity centres and the Liverpool health and education precinct.

The South District Plan supports the aim of developing an industrial economic and employment hub on this part of the Airport site. It also notes that public transport for workers could improve with the potential expansion of the Sydney Metro Southwest from Bankstown to Liverpool.

Based on identified strategic opportunities, the Airport and the adjoining Milperra industrial area have been collectively identified as one of nine Collaboration Areas in the South District. The Plan states that the Greater Sydney Commission will work with Canterbury-Bankstown Council, the New South Wales Government, the Commonwealth Government, BAL, industry and the community to develop a long-term economic strategy for the area. This strategy will seek to:

- Improve transport connections to the broader District
- Integrate planning for the Airport with planning of surrounding lands
- Coordinate infrastructure delivery
- Facilitate advanced manufacturing and innovation
- Expand opportunities stemming from Western Sydney University Bankstown Campus and the UNSW School of Aviation at the Airport.

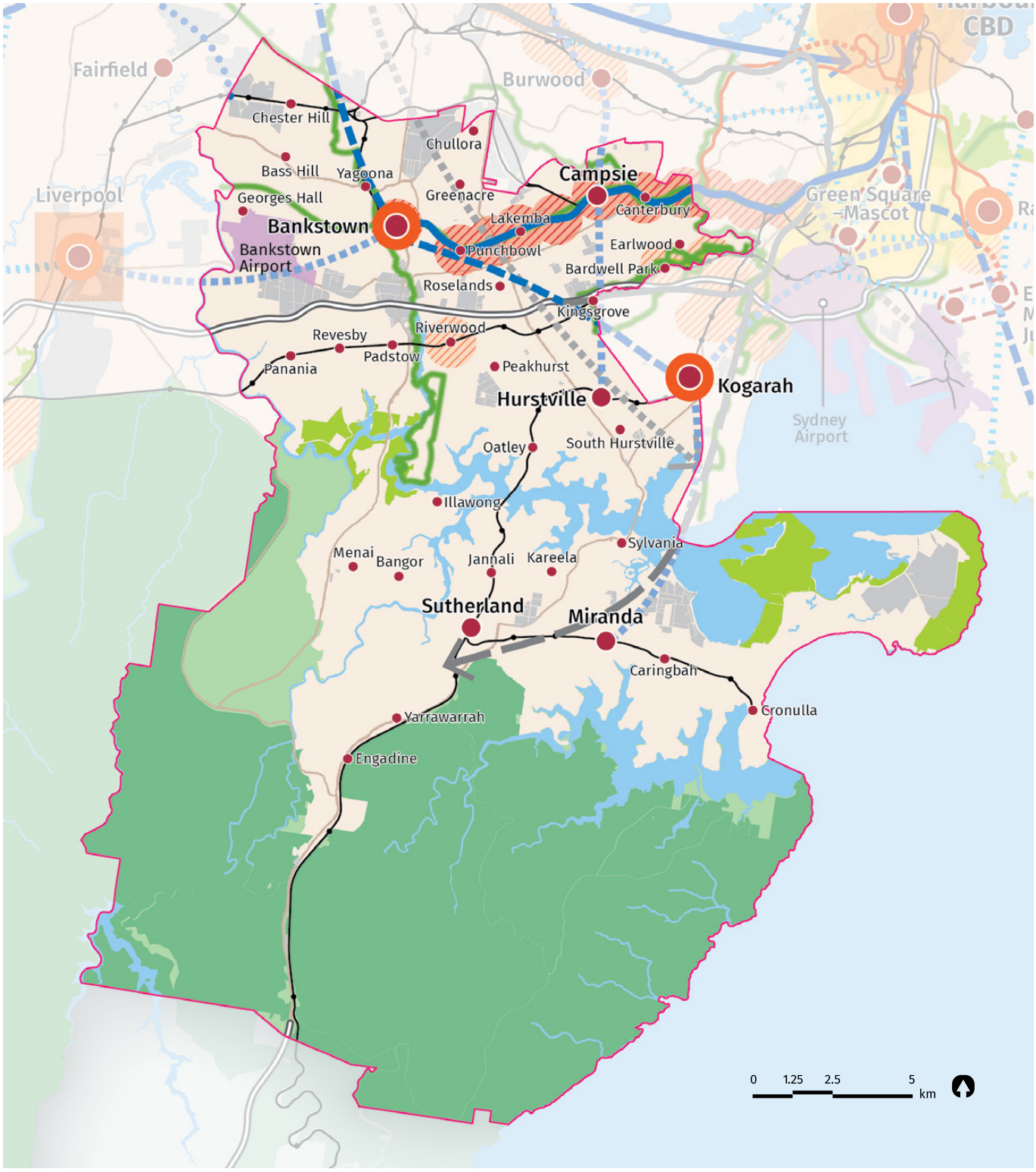


Figure 3.6: South District Plan (Source: Greater Sydney Commission 2018)

3.5.4 FUTURE TRANSPORT STRATEGY 2056

The NSW Government Future Transport Strategy 2056 (Future Transport 2056), released in March 2018, provides an update to the 2012 Long Term Transport Master Plan for NSW. Future Transport 2056 seeks to ensure that NSW is prepared for rapid changes in technology and innovation to create and maintain a world class, safe, efficient and reliable transport system over the next 40 years.

Future Transport 2056 has been developed to meet six outcomes:

- Customer focused
- Successful places
- A strong economy
- Safety and performance
- Accessible services
- Sustainability.

Aligned with the Greater Sydney Region Plan, which is built on a metropolis of three cities for Greater Sydney, Future Transport 2056 seeks an integrated network of corridors between these cities to support the efficient movement of people and goods. Such an integrated network of corridors is based around the following corridor hierarchy:

- City-shaping corridors
- City-serving corridors
- Centre-serving corridors.

City-shaping corridors are major trunk road and public transport corridors providing higher speed volume connections between the cities and centres that shape locational decisions of residents and businesses. Future Transport 2056 recognises the need to strengthen connections between Sydney Airport, the Harbour CBD, Greater Parramatta, and Western Sydney Airport.

The Strategy also identifies a strategic freight network for Greater Sydney which identifies the most significant corridors that support the movement of goods. This includes corridors connecting trade gateways, freight precincts and centres across Greater Sydney as well as corridors that connect the region with outer metropolitan areas and regional NSW.

In relation to Bankstown Airport, Future Transport 2056 recognises:

- City-shaping network improvements – a mass transit/train network extension between Bankstown and Liverpool (adjacent Bankstown Airport)
- City-serving network improvements – an on-demand or high frequency transit service between Bankstown and Liverpool (adjacent Bankstown Airport)
- Strategic freight network improvements
- The use of drones to support future transport and the need to develop and review policies around the management of airspace and air safety to enable a potential future of aerial mobility.

Greater Sydney Strategic Transport Corridors

Corridors represent the way people move around using multiples modes of transport

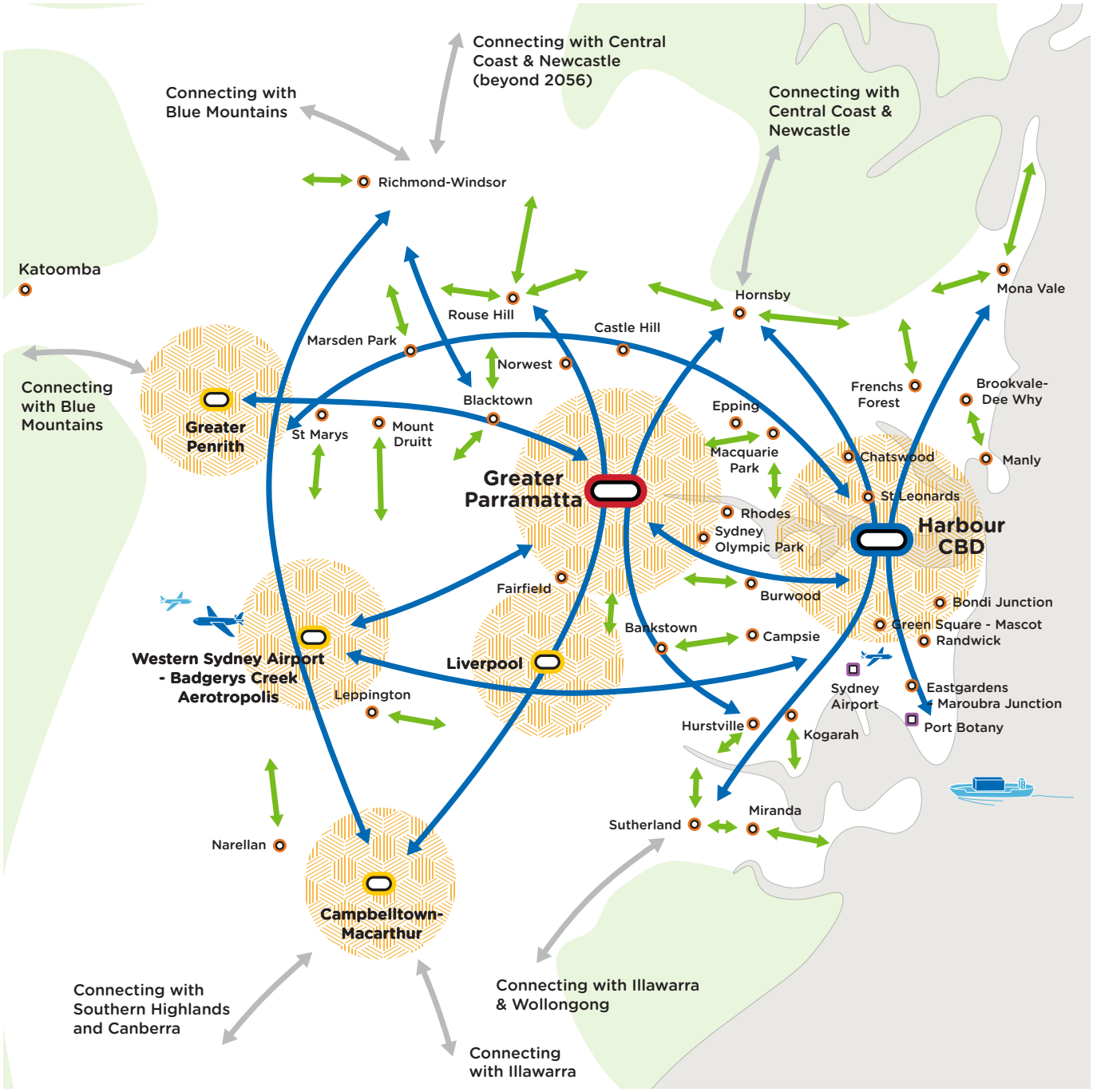


Figure 3.7: South District Plan (Source: Greater Sydney Commission 2018)



4.0

AIRPORT FORECASTS



4.1 OVERVIEW

IN 2017, BANKSTOWN AIRPORT WAS THE THIRD BUSIEST AIRPORT IN AUSTRALIA AND THE SECOND BUSIEST GENERAL AVIATION AIRPORT.

Aviation activity at Bankstown Airport primarily consists of single-engine and twin-engine piston aircraft (more than 80% of aircraft movements), with helicopters accounting for a further 16%, as shown in Figure 4.2.

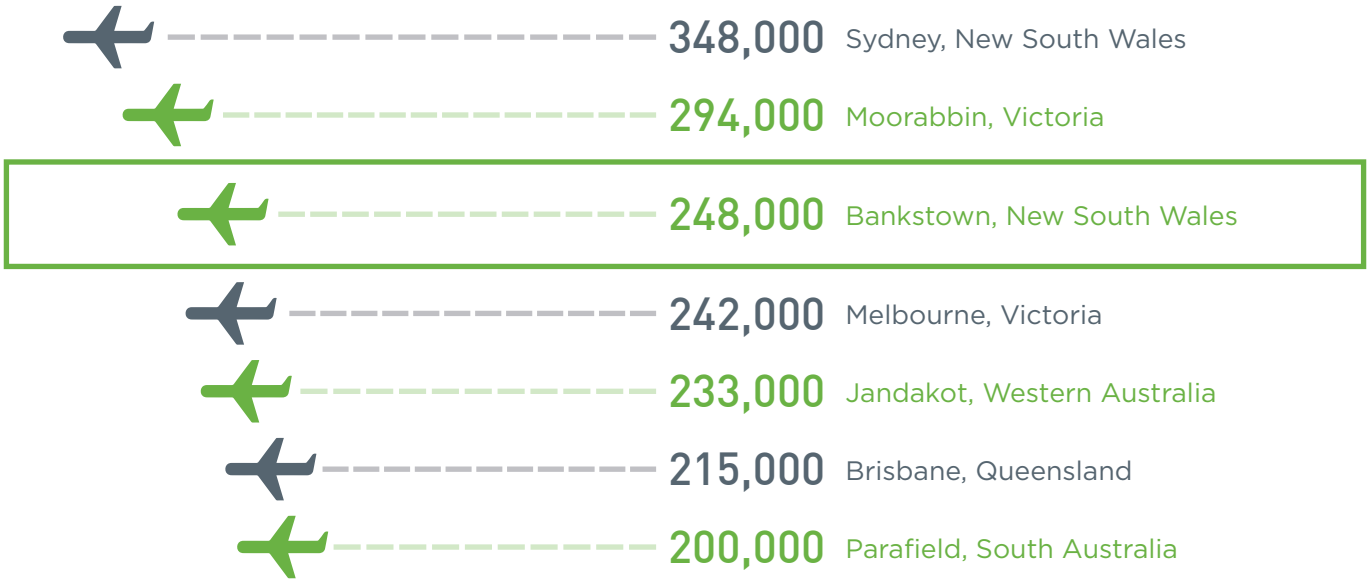


Figure 4.1: Australian Airport – Annual Aircraft Movements 2017 Calendar Year (Source: Airservices)

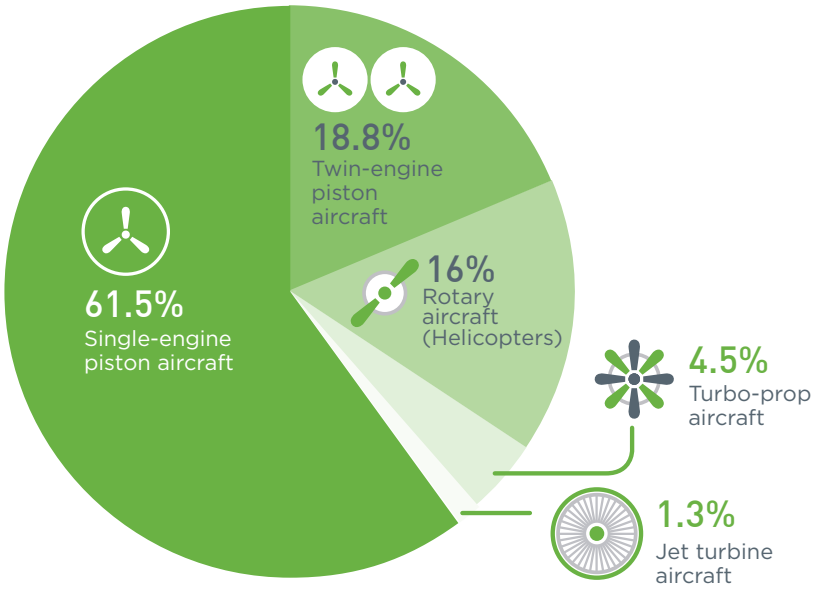


Figure 4.2: Aircraft Type using Bankstown Airport

4.2 AIR TRAFFIC MOVEMENTS

Forecasting aircraft movements and aviation-related developments relies on a detailed understanding of prevailing and future economic conditions. These directly affect the main drivers for airport activity. The Australian economy strongly influences general aviation activity. Bankstown Airport has experienced a reduction in air traffic during the past decade. This is a similar trend with other Australian general aviation airports.

Figure 4.3 charts aircraft traffic movement at the Airport over two periods, 1985-1999 and 2000-2017. Over the decade to 2017, annual air traffic declined from 360,000 to 247,506 movements (Airservices Movements at Australian Airports Calendar Year 2017). Moorabbin, Parafield and Jandakot also experienced a decline in general aviation activity over this same period.

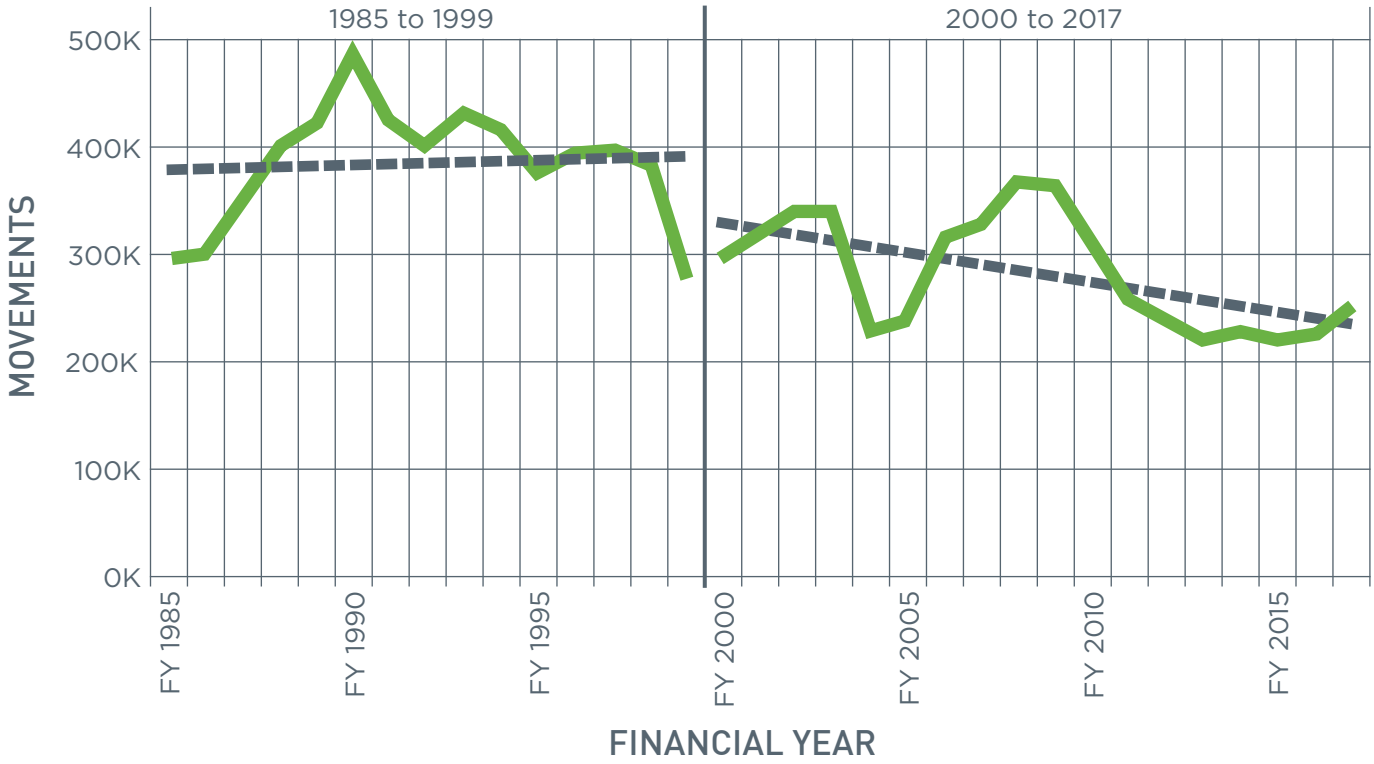


Figure 4.3: Bankstown Airport, Total Aircraft Movements (Source: TFI)

A large number of events have contributed to the overall long-term decline in aircraft movements at all Australian general aviation airports, including at Bankstown Airport. These events include:

- General economic conditions that are linked to demand for travel, aircraft demand and pilot demand
- Major economic events, such as recessions, in the Australian and global economy
- A higher Australian Dollar over recent years, which has increased the cost of education, new aircraft and aircraft parts in Australia
- Aviation-related events, such as the collapse of Ansett in 2001
- Terrorist attacks and health events (pandemics), which slow travel growth and impact airline revenues and profits
- Increases in aviation fuel prices
- Increases in user charges and general aviation compliance costs
- Technological changes increasing the use of flight simulators for pilot training and use of drones in agriculture and other aerial activities.

Increased air traffic movements at Bankstown since 2015 (as shown in Figure 4.4) are considered to be due to increased aviation training and general aviation activity.

In contrast to the overall long term decline in general aviation, helicopter movements at Bankstown Airport have increased from 30,000 movements in 2007 to almost 44,000 movements in 2017 (as shown in Figure 4.5). This increase is primarily due to a growth in helicopter pilot training.

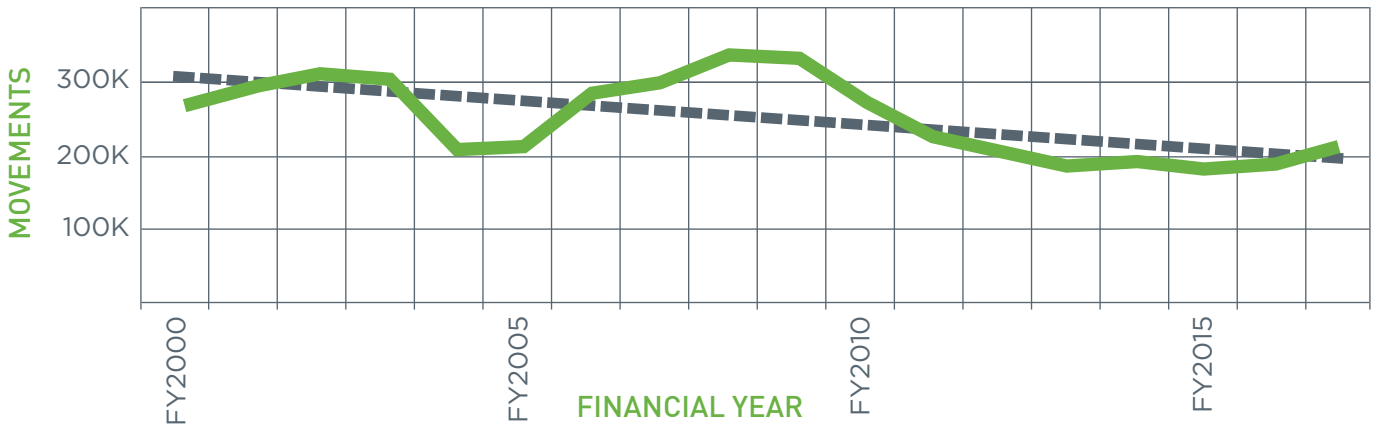


Figure 4.4: Bankstown Airport, Total Movements by Fixed-Wing Aircraft, 2000-2017 (Source: TFI)

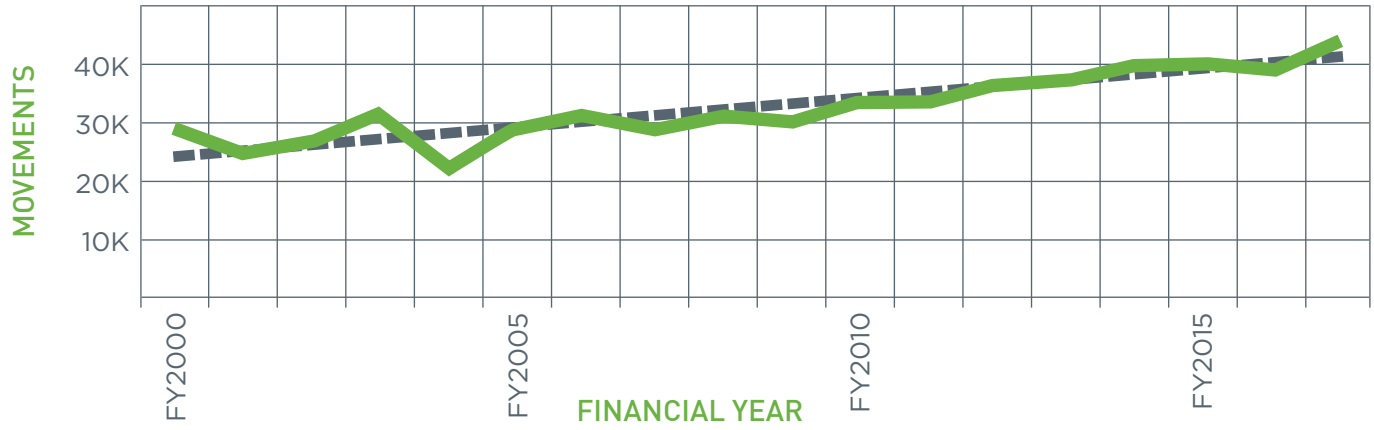


Figure 4.5: Bankstown Airport, Total Movements by Helicopters, 2000-2017 (Source: TFI)

4.2.1 AIR TRAFFIC FORECASTS FOR BANKSTOWN AIRPORT

Total aircraft movements are forecast to grow from 244,612 in 2017 to 340,057 by 2039 (based on financial year). Table 4.1 shows a higher rate of growth in the period 2017-2024. This forecast is based on a survey of aviation service providers at the Airport, which indicates an increase in planned activity.

The modelling results indicate strong aircraft movement growth for both fixed-wing and helicopter movements in the next five years at the Airport. Helicopter movements are anticipated to continue to grow more rapidly than fixed-wing general aviation movements.

Research undertaken by Tourism Futures International (TFI) in 2018 concluded that incomes and population growth are the two most significant factors determining demand for aviation and non-aviation activities at the Airport. Following is a summary of assumptions used to forecast future demand for aviation at the Airport:

- Income. The stronger the economy, the greater demand there is for aviation training, engagement in recreational and business-oriented flying, and purchasing aircraft.
- Population growth. This increases the demand for flying overall.
- Commercial aviation sector growth, both domestically and internationally. This influences the demand for pilot training.
- Aviation operating costs. These include the cost of aircraft, spare parts, fuel, airport charges, and regulatory compliance
- Exchange rates. Changes in the exchange rate influence the cost of oil, aircraft and spare parts in Australian Dollars.

TFI uses specific indicators to forecast growth in demand for aviation at the Airport. These include:

- NSW economic performance
- NSW and Sydney population growth
- Currency exchange rates
- Oil prices
- Committed and proposed aviation development projects.

The compound annual growth rate (CAGR) used to generate aviation forecasts for the Airport varies between one and three per cent per annum. The variation is primarily to forecast changes in economic conditions. The growth forecasts are summarised in Table 4.1.

Table 4.1: TFI Projections of Air Traffic Movements at Bankstown Airport - Financial Year (Source: TFI)

Years end 30 June	Movements*			CAGR Period	CAGR movements (%)		
	Fixed Wing	Helicopter	Total		Fixed Wing	Helicopter	Total
2012	203,530	36,336	239,866				
2017	201,929	42,683	244,612	FY12 to FY17	-0.2%	3.3%	0.4%
2024	247,888	46,343	294,231	FY17 to FY24	4.2%	1.7%	3.8%
2029	259,945	49,807	309,752	FY24 to FY29	1.0%	1.5%	1.0%
2034	272,300	52,883	325,183	FY29 to FY34	0.9%	1.2%	1.0%
2039	284,489	55,568	340,057	FY34 to FY39	0.9%	1.0%	0.9%
				FY17 to FY39	**1.6%**	**1.2%**	**1.5%**
				FY24 to FY39	**0.9%**	**1.2%**	**1.0%**

* Figures based on Financial year

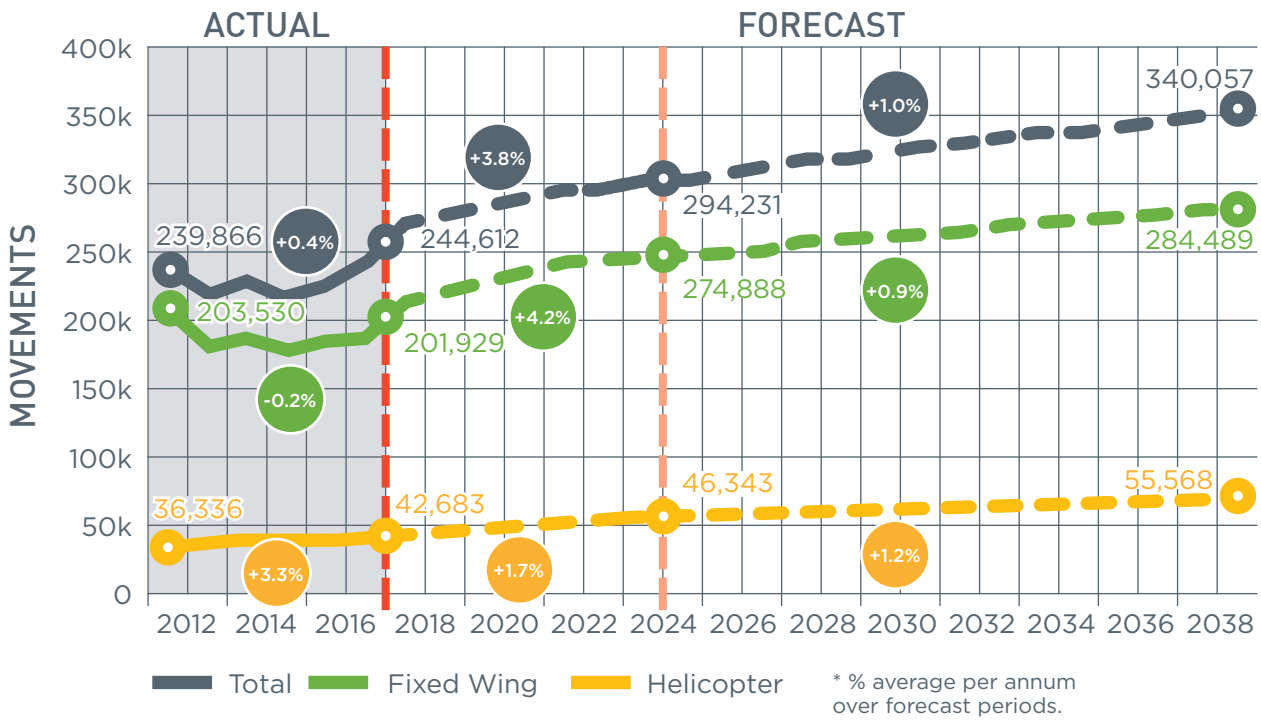


Figure 4.6: Aircraft Movements at Bankstown Airport (Actual FY12 to FY17, Projections from FY18 (Source: TFI)

General Aviation continues to be the predominant form of aviation activity at Bankstown Airport and is forecast to grow by 3.8 percent per annum to 2024. This is reflected in the commitments that current operators at Bankstown Airport have made for growth of their existing businesses.

For the remainder of the Master Plan period, general aviation growth is forecast to slow down to one per cent annual growth. However, helicopters will continue to form an important part of the aviation mix at the Airport and are forecast to grow steadily over the 20 year period to 2039.

Further growth in global pilot training and the potential expansion of such activities at Bankstown Airport may significantly impact upon annual growth estimates.

The future Western Sydney Airport is likely to impact on operations at Sydney and Bankstown Airports in the longer term. Impacts on airspace and potential competition for general aviation traffic in the Greater Sydney Region may exert pressure (both positive and negative) on general aviation. The forecast and projections in this Master Plan have not factored in the impact of Western Sydney Airport, which is scheduled to commence operating in 2026.

4.2.2 RUNWAY CONFIGURATION

Bankstown Airport has one of the most extensive runway and taxiway complexes of any general aviation airport in Australia, with three parallel runways and almost 12 kilometres of taxiways. Refer to Figure 7.1 in Chapter 7.0 Aviation Infrastructure for aviation infrastructure at the Airport.

The Airport's three parallel runway system essentially operates as a single entity.

The three parallel runway system provides a combined estimated capacity of approximately 450,000 aircraft movements per year. With current movements around 247,500 annually (combined fixed-wing aircraft and helicopters), the runways have significant additional capacity available.

The basic functions of each runway are described below:

NORTHERN RUNWAY ▶ 11L/29R

The Northern Runway typically is the main airport runway, servicing flying training and general aviation arrivals and departures. The runway is Code B.

CENTRE RUNWAY ▶ 11C/29C

The Central Runway is the overflow runway for the Northern Runway; and is used for large aircraft and aircraft departing into controlled airspace. Turbojet aircraft are restricted to the longest and strongest runway located in the centre. This runway is the only Code C runway which operates on a 24-hour basis. There is an opportunity to extend the runway to allow for RPT services.

SOUTHERN RUNWAY ▶ 11R/29L

The Southern Runway typically provides for flying circuit training. The runway is Code B and is the least used runway.

Under visual conditions, the outer runways operate simultaneously with contra-rotating circuits and the Centre Runway must be operated in conjunction with the outer runways. This is permitted under section 2.1.2.3 of the Civil Aviation Safety Authority Manual of Standards (MOS), but must be made compliant if the runway is replaced or upgraded. Operational management of runway spacings is conducted by Air Traffic Control, through the use of separation requirements stipulated in the *Manual of Air Traffic Services (MATS) Section 10.9.8.2 – Independent Runways.*

Based on the aircraft movement growth forecast, the runway capacity will not be realised within the 20 year planning horizon for this Master Plan.

4.2.3 HELIPAD CONFIGURATION

The main Helicopter Landing Site (HLS) for the Airport is located on the northern side of the airfield within the Aviation Zone near the terminal building. The designated HLS will continue to meet the needs of the existing and future helicopter operators based at the Airport. Larger helicopters can also arrive and depart from the runways.

A secondary HLS located within the north-western portion of the airfield was referenced in the 2014 Master Plan. This secondary HLS was established temporarily to assist with anticipated increases in helicopter traffic for the 2000 Sydney Olympic Games. Following environmental assessments relating to the proposed development of the new NSW Police Force Aviation Support Branch (NSW Police Air Wing) facility, this secondary HLS will be decommissioned following consultation with users. Helicopter operations at the Airport continue to be available from the runways, main HLS, or those other areas designated by Bankstown Airport Limited (if any) following relevant safety case/ risk assessments.

4.2.4 HELICOPTER TRAINING AREA

An area in the north-western portion of the Airport, within the Airport Business Zone, is currently used for low altitude helicopter training and manoeuvres.



5.0

AIRCRAFT NOISE



5.1 OVERVIEW

AIRCRAFT NOISE IS CONSISTENTLY IDENTIFIED AS ONE OF THE MAJOR ENVIRONMENTAL IMPACTS FROM AIRPORT OPERATIONS. BAL WORKS ACTIVELY WITH AIRPORT USERS, GOVERNMENT AGENCIES AND COMMUNITY REPRESENTATIVES ON A RANGE OF INITIATIVES TO MANAGE NOISE IMPACTS FROM AIRCRAFT OPERATIONS.

The most effective means for reducing the impact of aircraft noise is through the proper planning of land use for areas adjacent to the Airport. BAL works closely with Canterbury-Bankstown, Liverpool and Fairfield Councils in relation to the application of land use planning controls surrounding the Airport. This is further addressed in Chapter 6.0.

Aside from land use planning, other noise mitigation measures include the use of alternative runway alignments, flight paths, restrictions of aircraft movements and aircraft operational procedures aimed at reducing noise.

Airservices implemented a detailed noise monitoring program around Bankstown Airport in 2013. This program produced an in-depth analysis of aircraft movements, including numbers of aircraft operating, seasonal variations in aircraft movements, time of operations, runway usage and types of aircraft operating at the Airport. Such data, along with the detailed flight path data from the previous Master Plan, have provided a base of information about the spread of approaching and departing aircraft and circuit training around the Airport.

The Airports Act requires this Master Plan to forecast noise levels resulting from the operation of the Airport. The Australian Government has specified the use of a computer-based Integrated Noise Model (INM) which produces Australian Noise Exposure Forecast (ANEF) contours for the prediction of exposure to aircraft noise. ANEF contours assist to determine aircraft noise impacts on surrounding land and communities and assist planning authorities to regulate land use and future development around airports.

The modelling of noise generated by aircraft movements in this Master Plan provides the most accurate estimates of noise exposure to surrounding communities. The forecasts indicate minor changes in the level of noise generated by aircraft activity compared with the 2014 Master Plan.

5.2 AIRCRAFT NOISE

Aircraft noise is complex and varies according to a range of factors, including:

- Aircraft type (including age of the aircraft, number and type of engines, weight)
- Aircraft altitude
- Thrust settings and speed
- Pilot performance
- Weather conditions.

Aircraft noise is present during all phases of flight but is most significant during take-off and landing, due to the aircraft's close proximity to the surface. During take-off, the weight and throttle settings are at their highest point, and therefore the noise is generated through engine noise. In contrast, during landing, throttle settings are varied, and landing gear and control surfaces are extended, with greater noise being generated by airframe noise.

Bankstown Airport is not under curfew. However, circuit training is restricted to the following hours:

- Monday to Friday from 6.00am until 10.00pm (10.30pm during daylight savings)
- Saturdays and Sundays from 7.00am until last light

These procedures are designed to reduce the impact of night time aircraft noise on the surrounding community.

For operational and safety reasons, aircraft land and take-off into the wind, or with a minimal tailwind. The wind direction determines the mode of runway operation in use and flightpath designation. At Bankstown Airport, Airservices assigns the runway direction and flight route depending on the wind direction and speed, runway conditions and visibility.

5.3 THE AUSTRALIAN NOISE EXPOSURE FORECAST SYSTEM

The Airports Act requires an Airport Master Plan to include forecasts of noise levels resulting from the operation of the airport. The Australian Government has specified the use of the computer-based Integrated Noise Model (INM) which produces ANEF contours for the prediction of exposure to aircraft noise. Section 5.5 provides a description of the INM computer-based noise simulation software.

Australian Noise Exposure contours have been based on the following data and assumptions:

- Australian Noise Exposure Index (ANEI) – defines noise exposure based on the actual operations of the airport and uses an analysis of actual aircraft movements over a twelve-month period. It represents the best estimate of the actual noise exposure for a particular period rather than a forecast future scenario. An ANEI is primarily used to establish a 'base case' from which the ANEF and ANEC can be developed
- ANEF – estimates noise exposure based on a forecast of aircraft movements and fleet mix for a defined future horizon. The ANEF provides an indication of the change in noise emissions over time, and is used for planning the use of land affected by aircraft noise

An ANEF is a plot of estimated noise exposure based on a forecast of aircraft movements and fleet mix for a defined future horizon. The ANEF provides an indication of the change in noise emissions over time and is used for developing appropriate land use zoning of areas affected by aircraft noise.

ANEF contour plots are plans of the airport and surrounding areas on which contours of equal noise exposure (usually 20, 25, 30 and 35 ANEF units) have been superimposed, with the level of noise exposure increasing as the ANEF unit value increase.

The following factors of aircraft noise are taken into account in calculating the ANEF:

- The intensity, duration, tonal content and spectrum of audible frequencies of the noise of aircraft take-offs, landings and reverse thrust after landing (the noise generated on the airport from ground running of aircraft engines or taxiing movements is not included for practical reasons)
- The forecast frequency of aircraft types and movements on the various flight paths
- The average daily distribution of aircraft arrivals and departures in both daytime (7.00am to 7.00pm) and night time (7.00pm to 7.00am) hours. Night time movements are represented with a six decibel adjustment in the ANEF calculation
- The topography of the area surrounding the airport.

All forecast movements are allocated to runways and flight paths on an average basis taking into account the existing and forecast air traffic control procedures at the Airport.

The total ANEF at any point on the ground around the Airport is comprised of all individual noise exposures produced by each aircraft type operating on each path over the period of one average day. These calculated values do not take account of any background noise such as road or rail activities.

There can be only one ANEF plot for any airport at any one time. This is the ANEF endorsed by Airservices and incorporated into the latest Airport Master Plan. Australian Standard (AS) 2021:2015 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction (AS2021:2015) provides an assessment of potential aircraft noise exposure around airports based on the ANEF system. This is widely referred to in guiding strategic land use planning in the vicinity of airports. This standard provides guidance on the siting and construction of new buildings against aircraft noise intrusion and on the adequacy of existing building in areas near airports and aerodromes to protect against noise.

The assessment of potential aircraft noise exposure at a given site is based on the ANEF system. The standard also provides guidelines for determining the type of building construction necessary to provide a given noise reduction.

Table 5.1 shows the land use compatibility as recommended by AS2021:2015. Individual land uses shown in Table 5.1 are defined as:

Table 5.1: AS2021-2015 Table of Building site Acceptability Based on ANEF Zones*

Building Type	ANEF Zone of Site		
	Acceptable	Conditionally Acceptable	Unacceptable
House, home unit, flat, caravan park	Less than 20 ANEF (Note 1)	20 to 25 ANEF (Note 2)	Greater than 25 ANEF
Hotel, motel, hostel	Less than 25 ANEF (Note 1)	25 to 30 ANEF	Greater than 30 ANEF
School, university	Less than 20 ANEF (Note 1)	20 to 25 ANEF (Note 2)	Greater than 25 ANEF
Hospital, nursing home	Less than 20 ANEF (Note 1)	20 to 25 ANEF	Greater than 25 ANEF
Public building	Less than 20 ANEF (Note 1)	20 to 30 ANEF	Greater than 30 ANEF
Commercial building	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF
Light industrial	Less than 30 ANEF	30 to 40 ANEF	Greater than 40 ANEF
Other industrial	Acceptable in all ANEF Zones		

* To be read in conjunction with the guidance notes

There are a number of guidance notes associated with the above table. They refer to tables and appendices in AS2021:2015. For clarity, the following is a summary of key elements of a number of guidance notes (refer to the AS2021:2015 for the full detail):

Guidance Note 1: The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths.

Guidance Note 2: Within the 20 ANEF to 25 ANEF, some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate.

Guidance Note 4: This Standard does not recommend development in unacceptable areas designated as unacceptable. However, where the relevant planning authority determines that any development may be necessary within existing built-up areas designated as unacceptable, it is recommended that such development should achieve the required Australian Noise Rating (ANR).

The ANEF for Bankstown Airport assists the Canterbury-Bankstown, Fairfield and Liverpool Councils and NSW Department of Planning, Industry and Environment (DPIE) in land use planning and decisions involving potential future development which could be affected by noise from current or forecast aircraft operations at the Airport.

Land use zones surrounding Bankstown Airport (as shown in Figure 8.3) generally reflect the intentions espoused in AS2021:2015, with land to the west and south-east being generally zoned for public recreation and light industry.

5.4 RESPONSIBILITY FOR MANAGING AIRCRAFT NOISE

The responsibility for aircraft noise management is shared between airlines and aircraft operators, air navigation service providers, airports, federal government agencies and state and local governments. Such responsibilities are highlighted in Table 5.2.

Table 5.2: Responsibility for Managing Aircraft Noise

Aircraft Noise Responsibility	Aircraft Noise Responsibility
Airservices Australia	• Maintaining technology used by the industry for navigation and surveillance and aircraft noise monitoring • Major role in managing aircraft noise and distributing information about aircraft noise management • Maintains a focus on safety and works closely with airports and airlines to ensure, wherever possible, that flight departures and arrivals avoid residential areas and that noise-abatement principles are implemented
Civil Aviation Safety Authority (CASA)	• Independent statutory authority with responsibility for the regulation of civil aviation operations in Australia and the operation of Australian aircraft overseas • CASA gives overriding consideration to air safety, consideration of the environmental effects of the activities it regulates are secondary to its safety-related obligations • Responsible for airspace regulation
Department of Infrastructure, Regional Development and Cities	• Advises government on the policy and regulatory framework for Australian airports and the aviation industry • The Department also provides policy advice to the Minister on the efficient management of aircraft noise, including regulatory oversight of: - Curfews which apply to night time aircraft operations at Sydney, Adelaide, Gold Coast and Essendon airports - The Air Navigation (Aircraft Noise) Regulations 2018 as they apply to aircraft which do not meet Australian aircraft noise standards
Aircraft Noise Ombudsman (ANO)	The aviation industry works closely with the independent office of the ANO to improve the way in which it can respond to community concern about the impact of aviation on communities
Airports	Airports ensure that noise-generating activities, such as ground running and helicopter take-offs, take place as far away as possible from residential areas
State/territory governments and local councils	• State governments determine planning frameworks for areas around airports to ensure that inappropriate developments are avoided where aircraft noise is (or could be in the future) particularly high • Local councils are responsible for implementing these frameworks

5.5 INTEGRATED NOISE MODEL

Studies of aircraft noise impacts presented for Bankstown Airport were carried out using the United States Federal Aviation Administration-approved Integrated Noise Model (INM) Version 7.0d. This internationally recognised, computer-based noise simulation model calculates contours from an analysis of the contribution the various defined aircraft and their operations have on the overall noise emissions from the Airport. The resulting noise 'footprint' can then be used to assess the relative impacts that different aircraft and operational procedures have on the surrounding area.

The previous Master Plan 2014 contained ANEF contours that were modelled using INM version 7.0c. A more recent version of the INF was used for noise modelling in this Master Plan. The version used for this Master Plan (version 7.0d) contains updated noise data for different aircraft types and other changes to the modelling program. The change in model version can cause changes to the generation of noise contours between the Master Plan 2014 and Master Plan 2019.

5.6 FLIGHT MOVEMENTS

The forecast flight movements for Bankstown Airport are discussed in detail in Chapter 4.0. The flight movements used in the noise modelling are the 'Base Case' scenario for 2039 (20 year horizon). This scenario estimates the maximum potential noise impacts from the Airport and provides a safety margin for future planning.

5.7 FLEET MIX

The future fleet mix of aircraft likely to be operating from Bankstown Airport in twenty years or more cannot be defined precisely. It can only be estimated from the current fleet mix and discussions on future operations which include:

- Intentions of flight training facilities
- Information from operators about future aircraft acquisitions
- Impending retirements of aircraft in the 20 year period.

The commencement of operations at Western Sydney Airport may also impact on the operational arrangements within the Sydney Basin.

Table 5.3 shows the predicted fleet mix and aircraft movements for Bankstown Airport in 2039. The aircraft fleet mix generally reflects the types of aircraft currently using the Airport. The fleet mix is not anticipated to change significantly in the future.

Table 5.3: Expected Fleet Mix in 2039

INM Code	Aircraft Types	Total Annual Movements	
Fixed Wing Aircraft			**% of Total Fixed Wing Aircraft**
CNA182	General Aviation	8,626	3.0%
BEC58P		64,690	22.7%
GASEPF		195,733	68.8%
CNA404	Large Piston	125	0.0%
BN2A		175	0.1%
BEC300	Small Turboprop	3,612	1.3%
CNA208		5,188	1.8%
PA60		313	0.1%
ATR42	Large Turboprop	1,000	0.4%
DHC830		40	0.0%
SA227		1,754	0.6%
CNA750	Small Turbofan	250	0.1%
CNA510		2,922	1.0%
GV		52	0.0%
BAE146	Large Turbofan	10	0.0%
Total Fixed Wing Aircraft		**284,489**	
Helicopters			**% of Total Helicopters**
B427	General Aviation	2,182	6.6%
B407		4,160	12.5%
R44		17,514	28.3%
B430		9,428	52.6%
R44	Training	22,284	100.0%
Total Helicopters		**55,568**	
Total – All Aircraft		**340,057**	

5.8 RUNWAY UTILISATION

As described in Sections 4.2 and 7.2, the Airport has three runways orientated in the 11/29 direction. Table 5.4 details the runway usage, and how it has changed since the previous Master Plan.

Changes in runway usage are primarily due to the use of only the Centre Runway (Runway 11C/29C) at night. This single runway activity on the Centre Runway indicates a more accurate representation of night flying activity at Bankstown Airport than shown in the 2014 Master Plan. All night operations, including both fixed wing and helicopters, are limited to the Centre Runway as this is the only runway fitted with lights. The Northern Runway (Runway 11L/29R) lights will be decommissioned after the planned lighting upgrade for the Centre Runway is completed in 2018/2019.

The *Manual of Standards* Part 139 requires that where runways are provided essentially for light aircraft operations, the maximum permissible cross-wind component to be used for determining runway usability is to be 10 knots where *ab initio* flying (Latin term meaning "from the beginning") is carried out.

As small aircraft flying training is the major activity at the Airport, warnings are provided at eight knot wind speeds and above. In practice, the actual usage of the runway system will depend on a number of factors such as wind, taxiing distance, destinations, runway availability and maintenance.

Table 5.4: Runway Utilisation

Runway		Percentage use Master Plan 2019	Percentage use Master Plan 2014	Percentage Change 2014-2019
Northern Runway	**11L**	11.8%	14.8%	-3.0%
	29R	12.2%	18.2%	-6.0%
Centre Runway	**11C**	18.9%	17.5%	+1.4%
	29C	18.6%	18.4%	+0.2%
Southern Runway	**11R**	18.7%	15.7%	+3.0%
	29L	19.9%	15.4%	+4.5%

5.9 FLIGHT PATHS

The majority of aircraft operating at the Airport are used for the pilot training. These aircraft operate under Visual Flight Rules (VFR). This rule-set requires the pilot to ensure visual reference is made to the ground during flight.

Flights using precision-based technology, such as satellites (e.g. GPS), are mainly limited to larger charter and freight type aircraft, or privately-owned aircraft. Precision-based navigation allows for a more precise route to be followed.

While a large majority of flights using precision-based technology will generally follow the normal route, some may be slightly off the centreline of the standard track. The impacts of aircraft noise will be greatly affected by the flight paths that are used by aircraft approaching the Airport or after take-off. Flight paths are determined by the runway and the destination of the flight. Generally, the tracks used by aircraft have been chosen to limit the impact of noise on surrounding land uses, but within the bounds of operational guidelines and safety standards imposed by Airservices and CASA.

The existing and proposed flight paths used in producing the 2017 ANEI and 2039 ANEF have been included in Figures 5.1 to 5.4. The positioning and spread of the existing flight paths used in preparing the 2017 ANEI were derived from Noise and Flight Path Monitoring System (NFPMS) data supplied by Airservices and represent the tracks generally used during the year.

The flight paths used for preparing the 2039 ANEF had several significant assumptions:

- The hours of darkness use of Centre Runway (Runway 11C/29C) for night flying activity is undertaken, as this is now the only runway fitted with lights
- Flight paths align with operational requirements as outlined in Airservices document En-Route Supplement Australia (ERSA)
- No change in the flight paths for Bankstown Airport once Western Sydney Airport is operational.

The prepared flight paths have been confirmed against Airservices NFPMS data and in consultation with local air traffic control. They represent the tracks generally flown during 2017. The flight paths for the local area movements (general aviation, fixed-wing and helicopter) have been arranged according to type and direction of the active runway.

Other noise mitigation measures include:

- Where possible, fixed wing flying training (circuits) is directed to the Southern Runway (Runway 11R/29L) to maximise the extent of circuits conducted over open space and commercial/ industrial areas to the south of the Airport
- Restriction of night circuits for aircraft operations to the southern side of the Airport.

Night flying is an essential component required to achieve a night VFR and Command Instrument Rating, an important element in advanced flight training.

5.9.1 ARRIVALS AND DEPARTURES

Whilst arrivals and departures at an airport can be from anywhere within the entire 360 degree radius of the airport, airspace and operational requirements restrict the directions of flight available at Bankstown Airport. Sydney Airport airspace to the east, along with Holsworthy Military Restricted Areas to the south, require the majority of arrivals and departures to be from the west, around to the north-east.

Arrivals and departures for Bankstown Airport, for both fixed wing aircraft and helicopters, are shown in Figures 5.1 to 5.4.

ARRIVALS

Arrivals for fixed wing and helicopters are primarily from the Casula and Prospect areas. Once aircraft transit over these areas they are provided instruction by air traffic control for the runway in use.

During daylight hours for Runway 29, fixed wing aircraft will enter the Bankstown Airport airspace at 1,500 feet. When the Airport is operating Runway 11, fixed wing aircraft will enter the airspace at 1,000 feet. Some smaller aircraft (such as float-planes etc.) may arrive at Bankstown Airport from the north once they vacate the airspace over the Parramatta River. Aircraft that are conducting an arrival to the Airport via an Instrument Approach Procedure, will normally track directly to the Airport from the west, descending in accordance with the procedure.

At night, aircraft will remain at a minimum safe altitude (1,500 feet or higher) until established within the circuit area of the Airport, or established on the Precision Approach Path Indicator (PAPI) glideslope.
Helicopters enter the Bankstown Airport airspace during daylight hours via specified helicopter procedures outlined in En Route Supplementary Australia (ERSA). These routes allow for the segregation of helicopters from fixed wing traffic, increasing the safety of both fixed wing and helicopters.

These helicopter points are:

- CHOPPERS NORTH (CNTH) - Northern end of Regents Park Railway Station (approximately 300 metres north of the water pipeline)
- CHOPPERS WEST (CWST) - Michels Patisserie located 1.2 NM west of CHOPPERS NORTH on the water pipeline
- CHOPPER SOUTH (CSTH) - Intersection of two creeks enclosing a sewage treatment works 2.1NM S of ARP.

When a helicopter has crossed over the required position at 700 feet or at 500 feet for the CHOPPER SOUTH position, the pilot is provided instructions for arrival at the Airport by air traffic control.
At night, helicopters arrive in the same manner as fixed wing aircraft and do not arrive at the Airport via the helicopter arrival points listed above.

DEPARTURES

Departures for both fixed wing and helicopter aircraft are the same for night time operations. Departures are generally to the west, unless a different direction is required by air traffic control for safe operating requirements.

- Departures from the Runway 29 direction to the west, climbing to 1,500 feet
- Departures from the Runway 11 direction will depart initially in an easterly direction, and then make a right turn, and then continue flight to the west climbing to 1,500 feet

During daylight hours, fixed wing aircraft will depart primarily to the west or to the north of the Airport. Airspace design, as previously outlined, restricts departures to the east or the south.

- Fixed wing aircraft departing in the Runway 29 direction, will depart the Bankstown Airport airspace either to the west or to the north on climb to 1,000ft
- For departures in the Runway 11 direction, fixed wing aircraft will depart initially in an easterly direction. Once above 500 feet, the aircraft will make a left turn to the north or around to the west continuing the climb to 1,500 feet.

Helicopters departing the Bankstown Airport airspace during daylight hours will use specific helicopter departure procedures as outlined in ERSA. These procedures use the helicopter points (previously described), departing again at 700 feet or at 500 feet when using CHOPPER SOUTH.

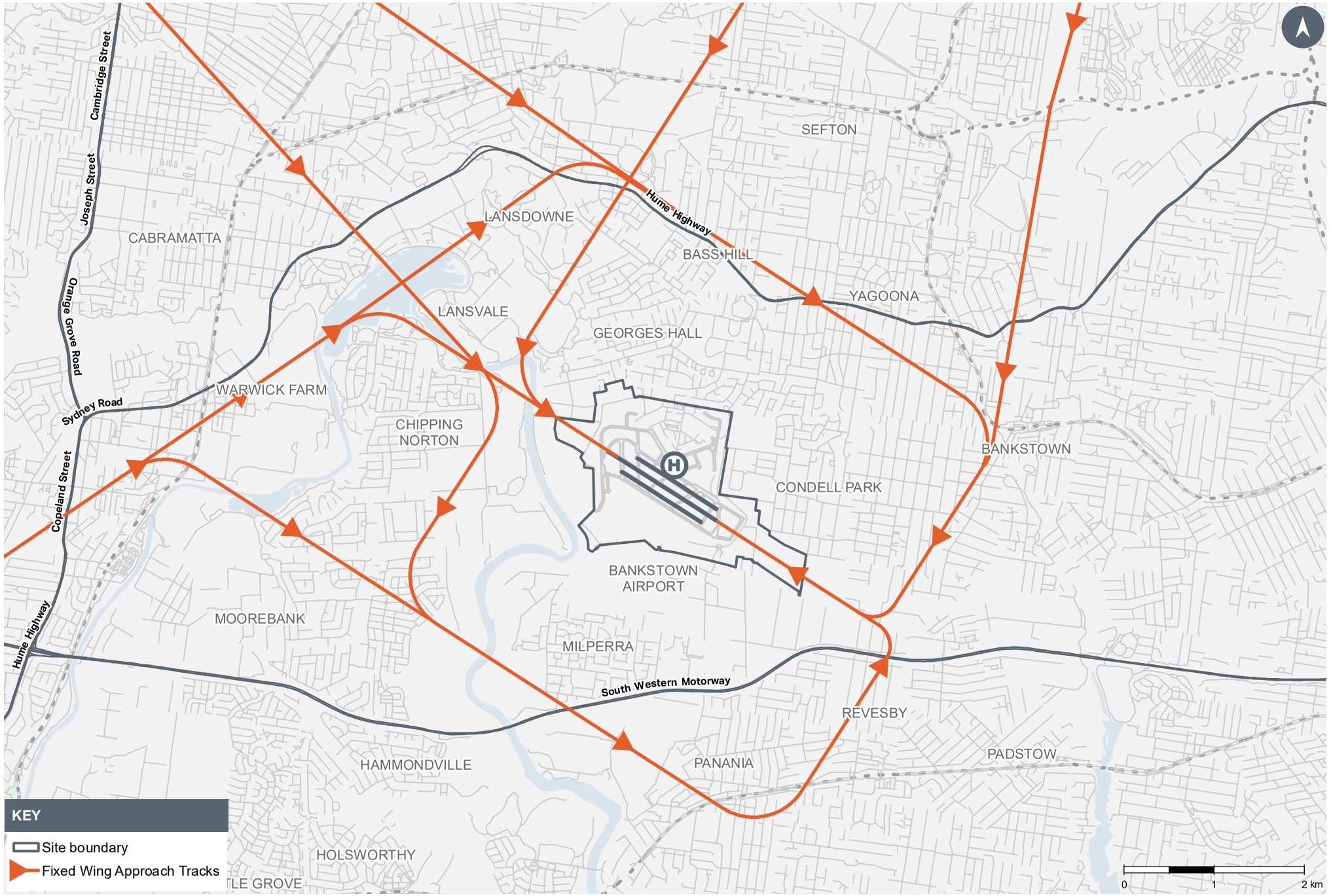


Figure 5.1: Flight Paths – Fixed Wing Arrivals

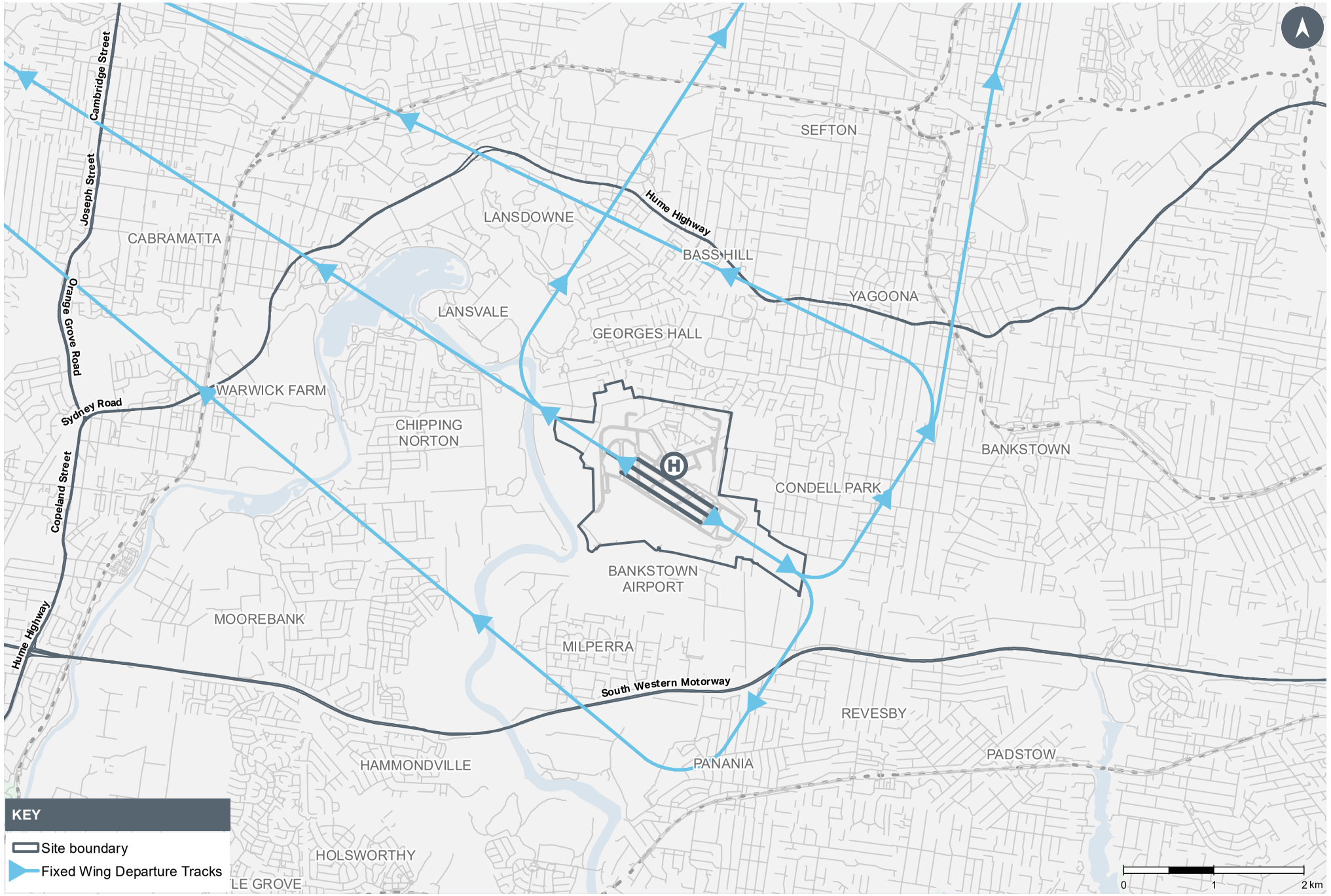


Figure 5.2: Flight Paths – Fixed Wing Departures

5.9.2 CIRCUITS

Circuits are an essential part of pilot training. A typical circuit is made up of the following basic components:

- Take off into the wind and commence climb
- Turn cross wind at 500 feet or more above ground level and continue climb
- Level at 1,000 feet and turn downwind
- Turn base (cross wind) and commence descent
- Turn final and land, touch and go or full stop.

Operations conducted at night, including helicopters, use the Centre Runway (Runway 11C/29C) only. Aircraft conducting night training circuits only use the circuit to the south of the Airport. Aircraft departing the Airport to another destination may be required to use a flight path to the north of the Airport due to air traffic control requirements.

A typical fixed wing aircraft circuit is illustrated in Figure 5.5. These circuits have been produced using the training aircraft types and forecasts for Bankstown Airport on each of the three runways, using both ends. Flight parameters were set following CASA circuit guidelines. Aircraft climb to 500 feet above aerodrome level before commencing first turn and continue until levelling flight at 1,000 feet above the Airport level.

The actual circuits that are flown will vary from the figure for many reasons including, but not limited to, the following:

- Inherent variation of aircraft
- Differing turning circles and cruise speeds of aircraft
- Wind direction and strength
- Atmospheric pressure
- Air temperature
- Performance of different training aircraft types
- Human variation
- Amount of traffic in the circuit and the need to maintain safe separation
- Training requirement to fly different circuits and landing techniques which involve varying angles of descent
- Instructions from air traffic control (such as to alter path to allow for other circuit traffic or traffic departing or arriving at Bankstown Airport).

5.9.3 HELICOPTER CIRCUITS

Helicopter circuits at Bankstown Airport have been developed in liaison between the helicopter flight training school and Airservices, following CASA guidelines. The circuit paths are designed to reduce overflight of residential areas as much as practicable. Tracks, as shown in Figure 5.6, predominantly overfly open space/recreation areas, industrial areas and major roads to reduce the impact of circuit flying on resident areas surrounding the airport. Helicopters continue to climb after take-off until levelling out at 700 feet above the Airport.

Helicopter night circuits can only operate on the Centre Runway (Runway 11C/29C). This means night circuits will only be flown to the north-west and south-west of the runway in the normal circuit pattern.

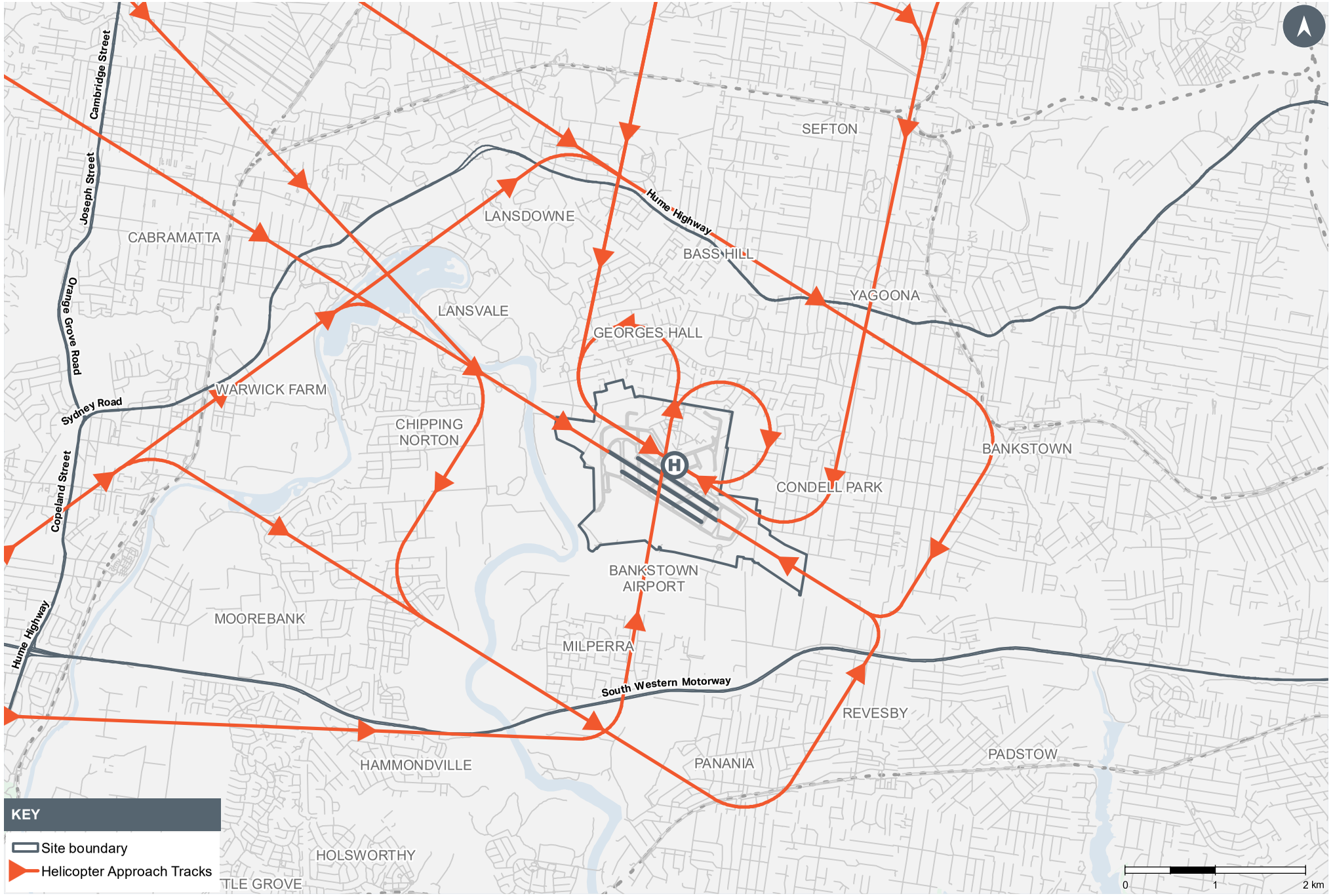


Figure 5.3: Flight Paths – Helicopter Arrivals

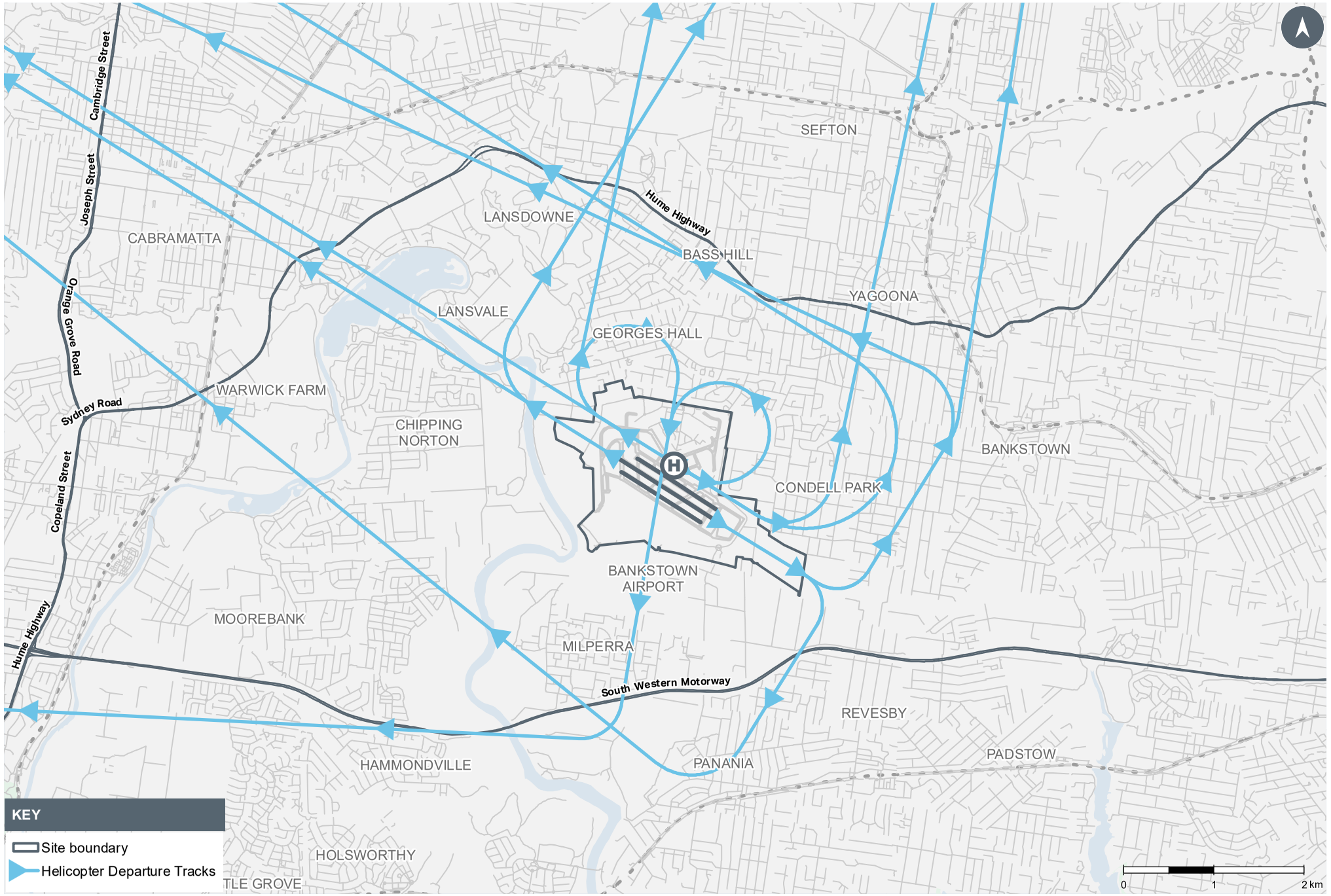


Figure 5.4: Flight Paths – Helicopter Departures

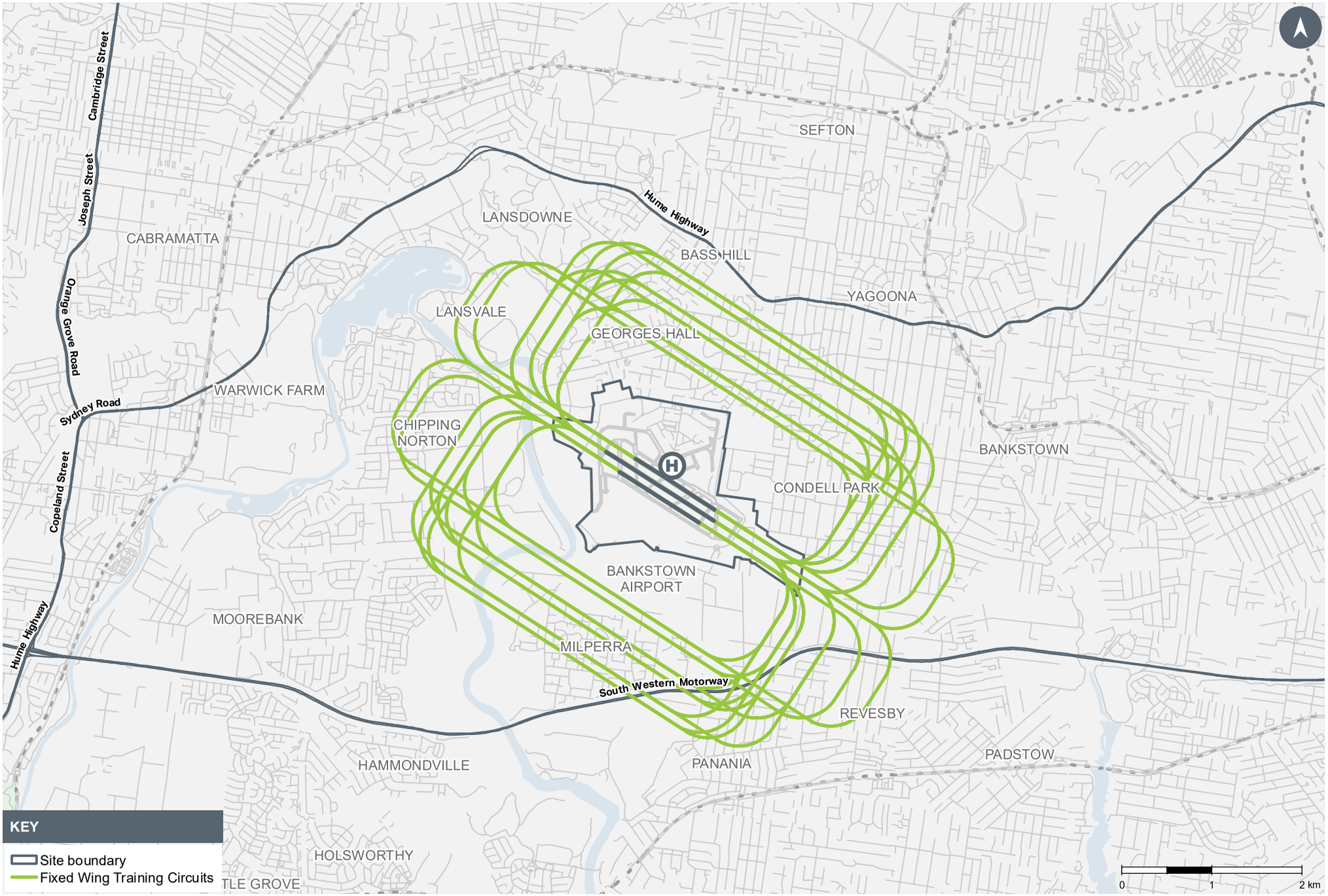


Figure 5.5: Flight Paths – Fixed Wing Circuit Training

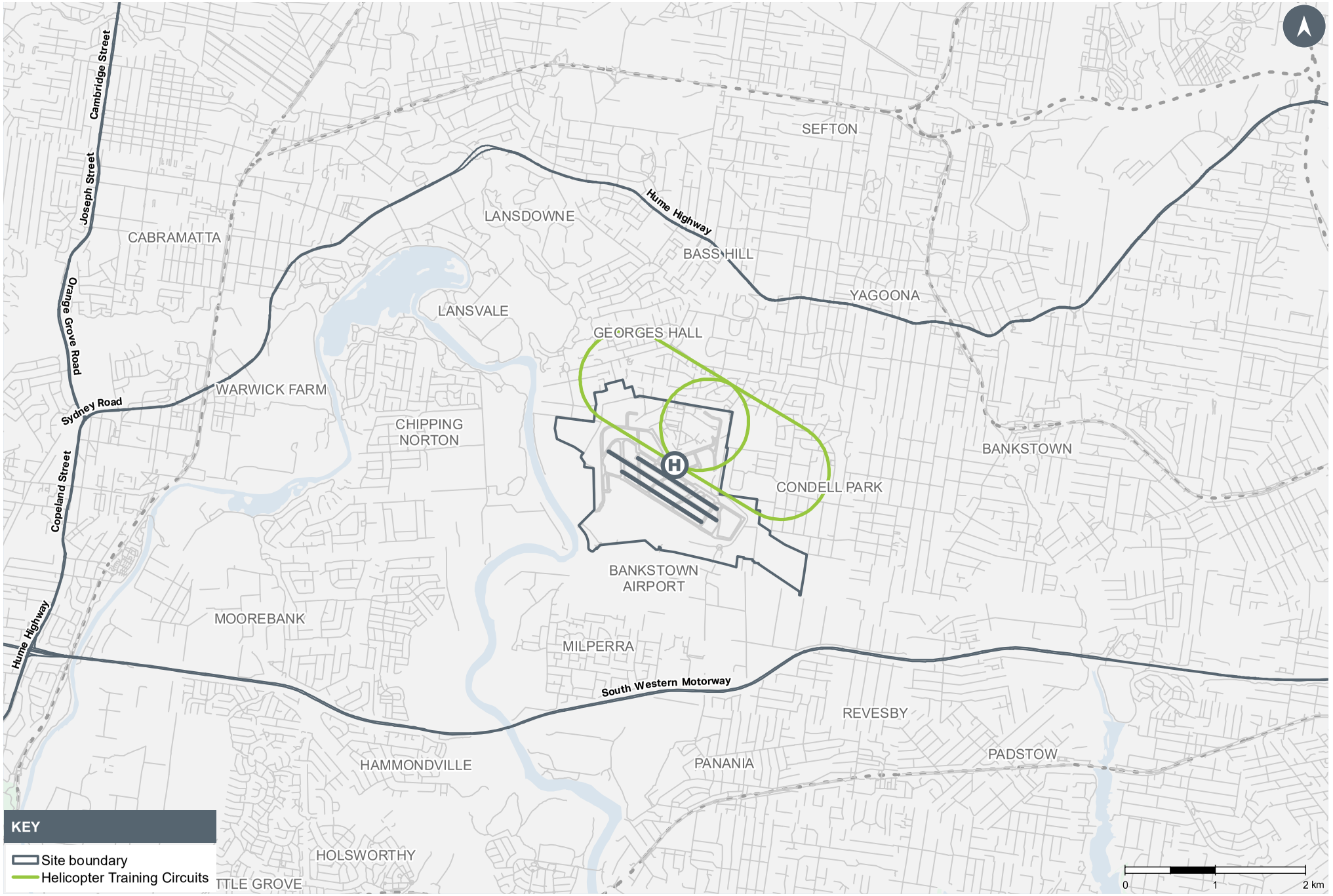


Figure 5.6: Flight Paths – Helicopter Circuit Training

5.10 AIRCRAFT NOISE MITIGATION

The 2017 ANEI for Bankstown Airport is included in Figure 5.7. The 2039 ANEF for Bankstown Airport is included in Figure 5.8.

A comparison between the 2017 ANEI and the 2039 ANEF for Bankstown Airport is provided in Figure 5.9. Figure 5.10 provides a comparison between the 2033/34 ANEF (contained in the 2014 Master Plan) and the 2039 ANEF. The comparison shows there may be some increase in the residential area affected by airport noise due to increased air traffic in the future. These impacts will be alleviated to some degree by the gradual replacement of the existing fleet with quieter aircraft. In terms of significant 2039 ANEF contours, the 30 and 35+ ANEF contours are contained almost entirely within the boundary of the Airport. There is no additional residential properties within the 30+ ANEF contour.

The 25 ANEF contour extends to the north-west from the Airport over Georges Hall (residential area), Georges River and Heron Park. To the south-west and south of the Airport, the 25 ANEF extends over open space and industrial areas, and to the south-east, the contour extends over a portion of the Condell Park industrial area and a small section of the residential suburb of Condell Park. A small section of the residential area of Georges Hall north of Marion Street is also within the 25 ANEF.

The 20 ANEF contour extends to include residential areas in Georges Hall, Condell Park and a small area in Chipping Norton.

There are a number of additional residential properties within the 20 - 25 ANEF contour. *Australian Standard 2021-2015 Table of Building Site Acceptability Based on ANEF Zones* indicates that dwellings (i.e. houses, home units, flats and caravan parks) are conditionally acceptable in the 20 to 25 ANEF, with the land use authority having the opportunity to include requirements for noise control features in the construction of new dwellings.

BAL will work collaboratively with the Canterbury-Bankstown, Fairfield and Liverpool Councils to ensure that any future development will recognise the 2039 ANEF and that any developments within the significant ANEF contours will be constructed to meet AS2021: 2015.

The ANEF in this Master Plan indicates that in 20 years' time, the 25 ANEF contour could extend into a small residential area north of Marion Street in Georges Hall. There is sufficient time to engage with the Canterbury-Bankstown Council to jointly develop a planning strategy to address current and future land use in this area. As Master Plans are updated every five years, there will be incremental reviews of the specific location of the 25 ANEF contour.

Whilst Bankstown Airport operates on a 24-hour basis, it has in place industry working arrangements for circuit training. BAL further proposes to conduct consultative meetings with the airport operators and Airservices to maximise the use of the movement area infrastructure and to minimise the impacts on the community.

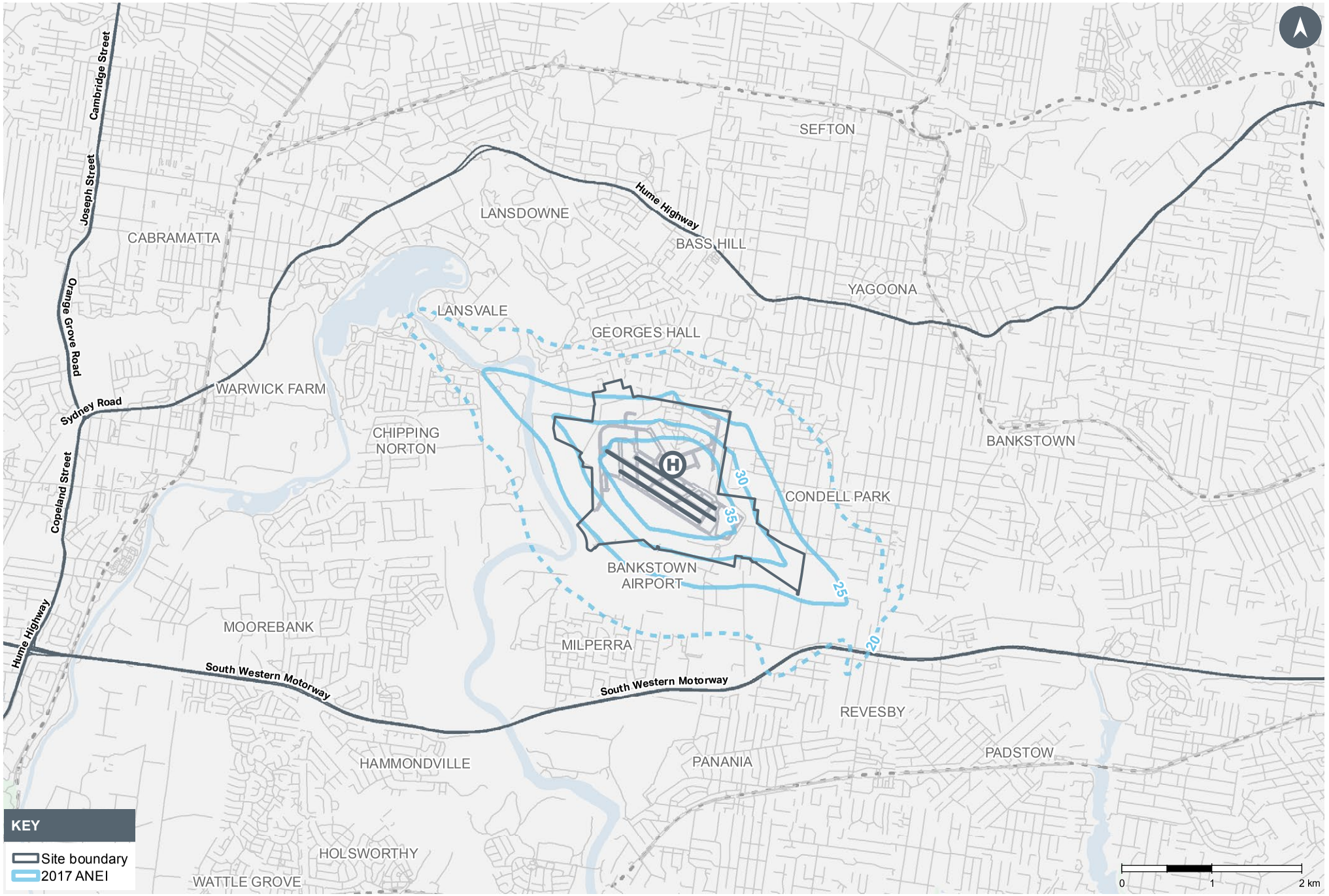


Figure 5.7: 2017 ANEI

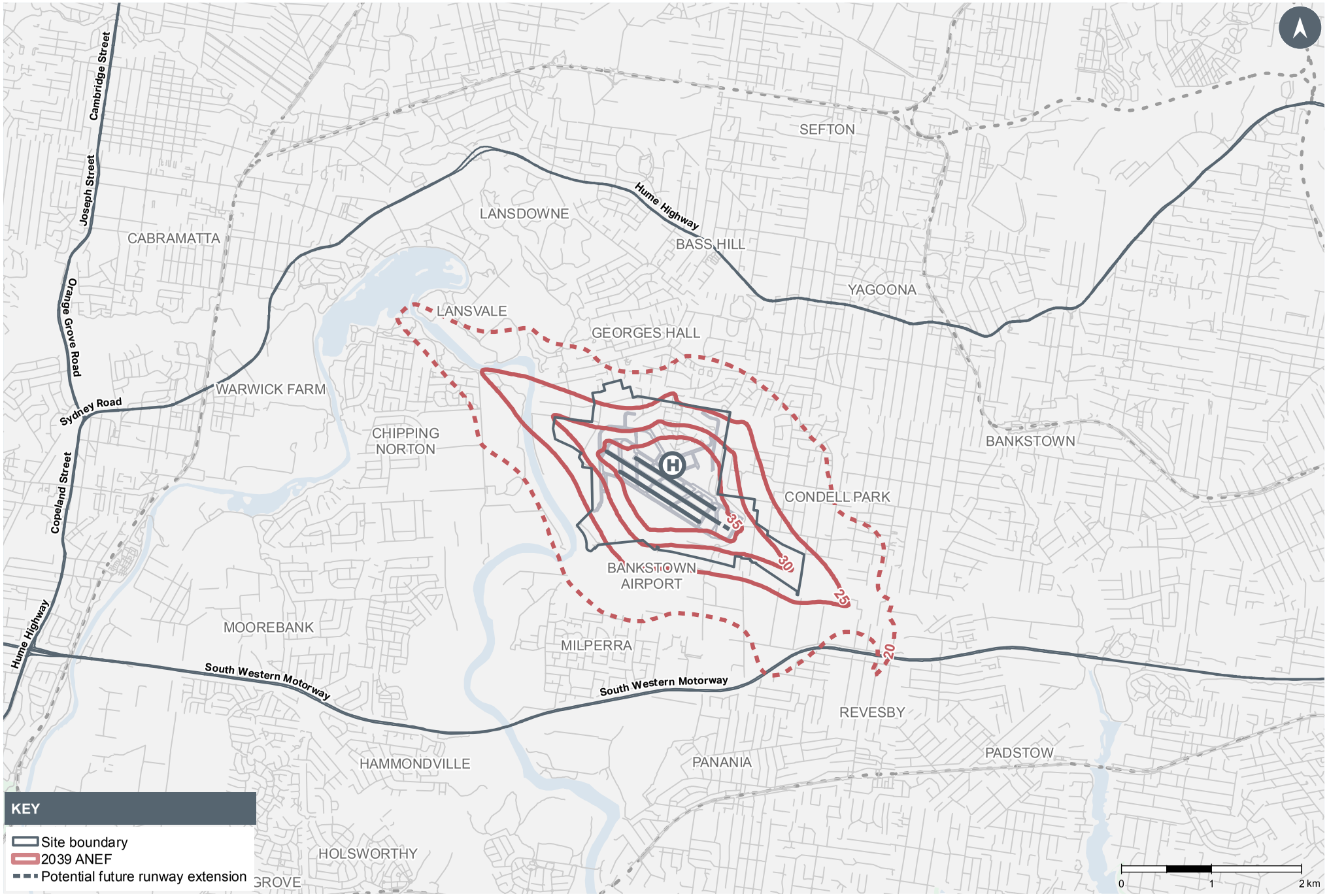


Figure 5.8: 2039 ANEF

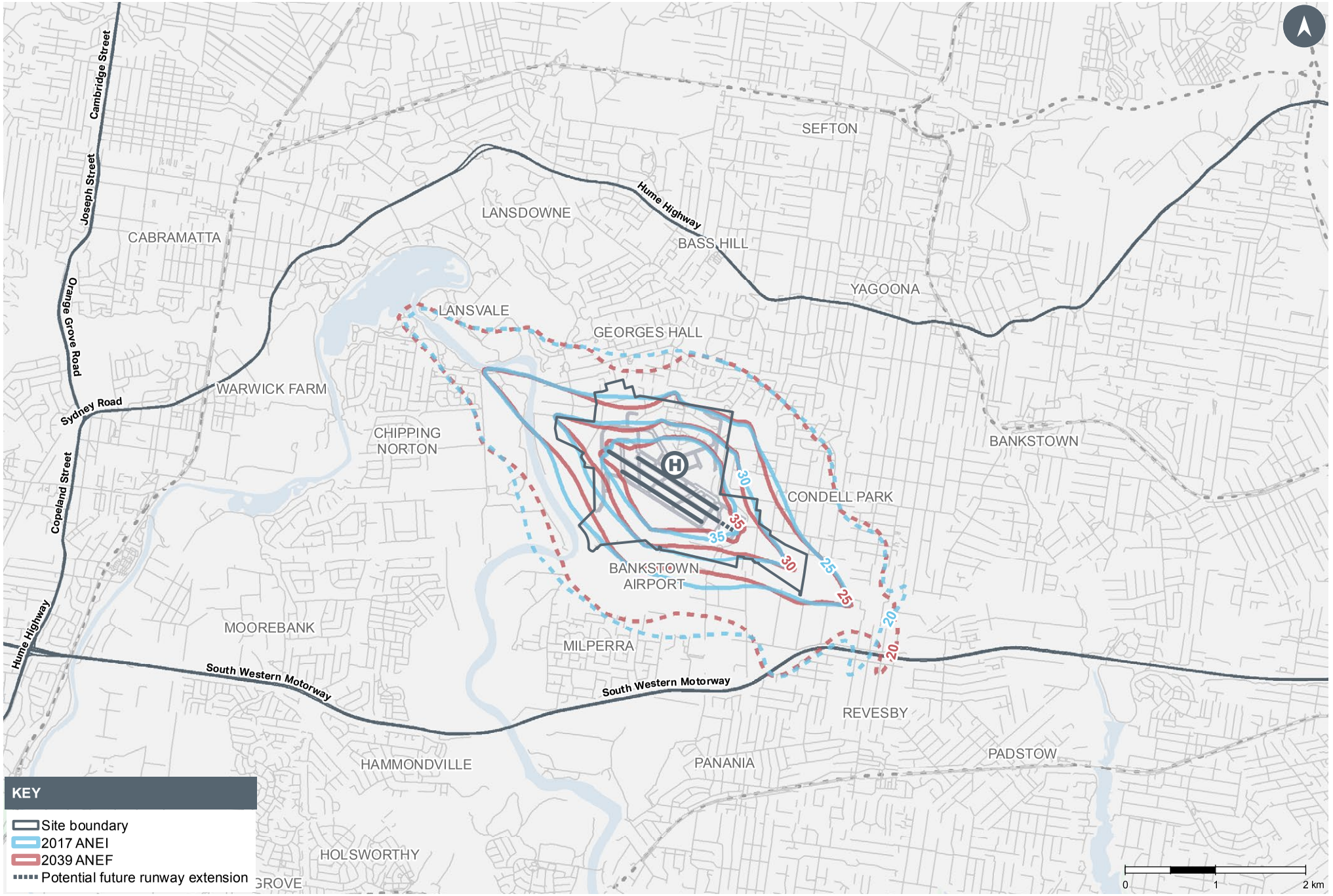


Figure 5.9: Comparison between 2039 ANEF and 2017 ANEI

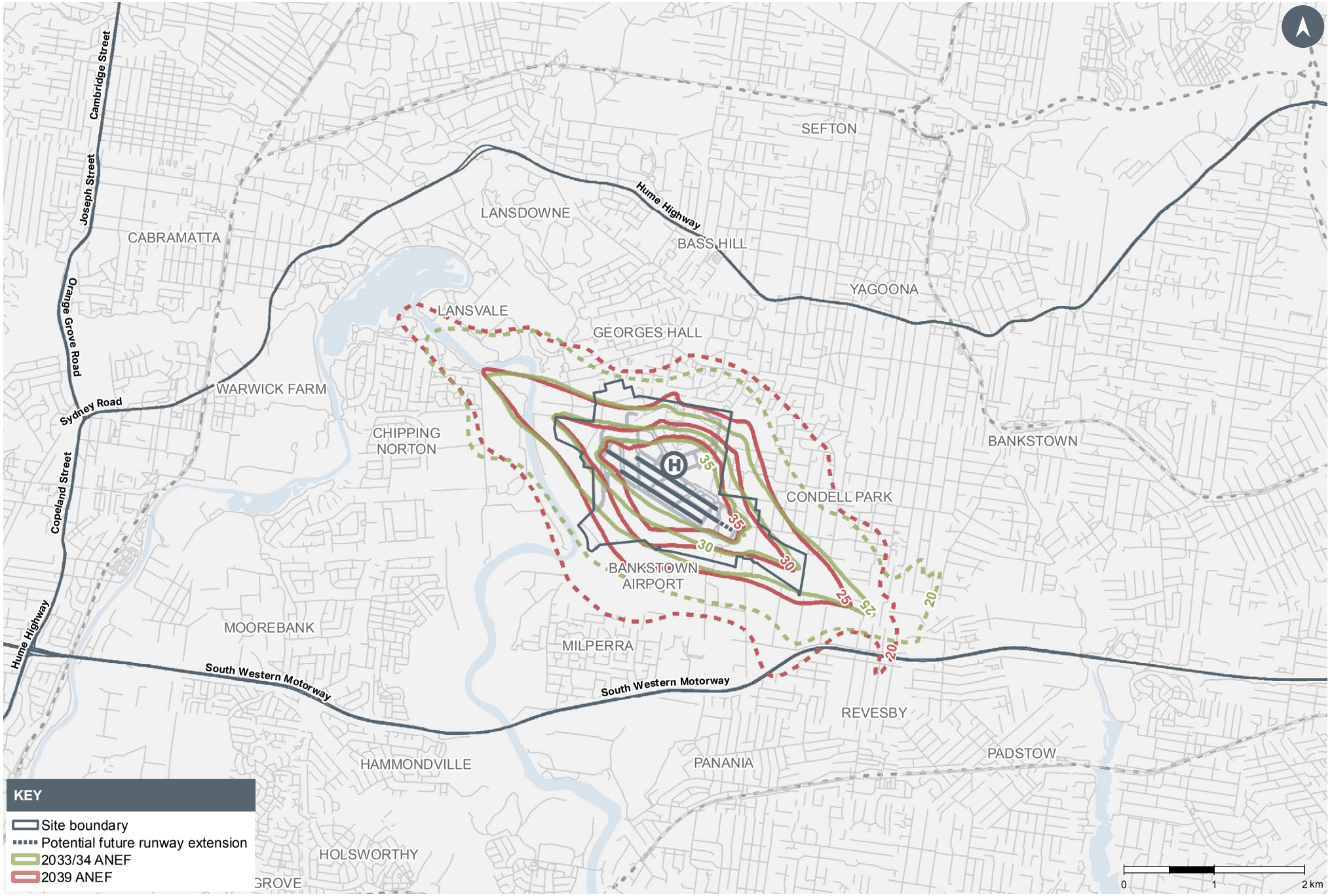


Figure 5.10: Comparison between 2039 ANEF and 2033/34 ANEF

5.11 OTHER AIRCRAFT NOISE DESCRIPTORS

The ANEF system is recognised as having limited application for general aviation airports in Australia with large numbers of flights by training aircraft. This is because ANEF forecasts do not accurately define areas of surrounding lands which may be affected by aircraft noise.

BAL is committed to providing the public and other stakeholders with the most relevant, accurate and easily understood information on aircraft noise impacts. 'Number above' (N-contour) maps have been prepared for this Master Plan.

N-contour maps are prepared with reference to a specified decibel level and a specified time period (e.g. 24 hours or night-time period) and a specified period of the year (e.g. a season, or the full year).

The following N-contours have been prepared:

- N70 – 24 hours, full 2039 year (Figure 5.12)
- N60 Night – 7.00 pm to 7.00 am, full 2039 year (Figure 5.13)

N70 and N60 modelling provides maps of areas that are likely to experience a predicted number of noise events from aircraft flying overhead. N70 and N60 noise modelling calculates the number of noise events, greater than 70 dB(a) and 60 dB(a), respectively, on an 'average day' over particular areas. It is calculated as the number of noise events, over a one year period, averaged per day.

Sound waves from aircraft noise travel in all directions. As the sound waves travel away from the source, the intensity decreases as the energy is dispersed over a greater area. This further reduces the power of the sound waves. The impact of the soundwaves can vary due to several factors which include sound wave directivity, atmospheric absorption and ground attenuation.

Sound is measured in decibels (dB) and the A-weighted sound level, expressed in dB(A) indicates the relative loudness of sound in the air as it is perceived by the human ear. In a typical environment with general noise, a three decibel change represents the threshold of detection of a change in noise. A noise level change less than three decibels is not likely to be noticeable. Atmospheric conditions influence the spread of aircraft noise and intensity of sound levels on an hourly, daily and seasonal basis. The main influences are attributed to temperature, atmospheric pressure, humidity, average headwind, elevation and terrain.

A selection of typical sound levels that most people would experience regularly is illustrated in Figure 5.11.

The N70 and N60 Night maps provide an indication of which areas around the airport will be overflown by aircraft.

N70 and N60 Night maps for the area around Bankstown Airport are included as Figures 5.12 and 5.13. They are based on the number of aircraft forecast to be operating at the Airport in 2039, as described in Chapter 4.0.

5.12 FLY NEIGHBOURLY PROCEDURES

The N70 contours represents external noise level of 70 dB(A). This corresponds to a 60 dB(A) internal noise level specified in AS 2021:2015, the indoor design sound level for normal domestic areas in dwellings. An external single event noise will be attenuated by approximately 10 dB(A) by the fabric of a house with open windows.

An internal noise level of 60 dB(A) is the sound pressure level of a noise event that is likely to interfere with conversation or with listening to the radio or the television.

Similarly, the N60 represents an external noise level of 60 dB(A). This corresponds to a 50 dB(A) internal noise level, which is the sleep disturbance level specified in AS2021:2015.

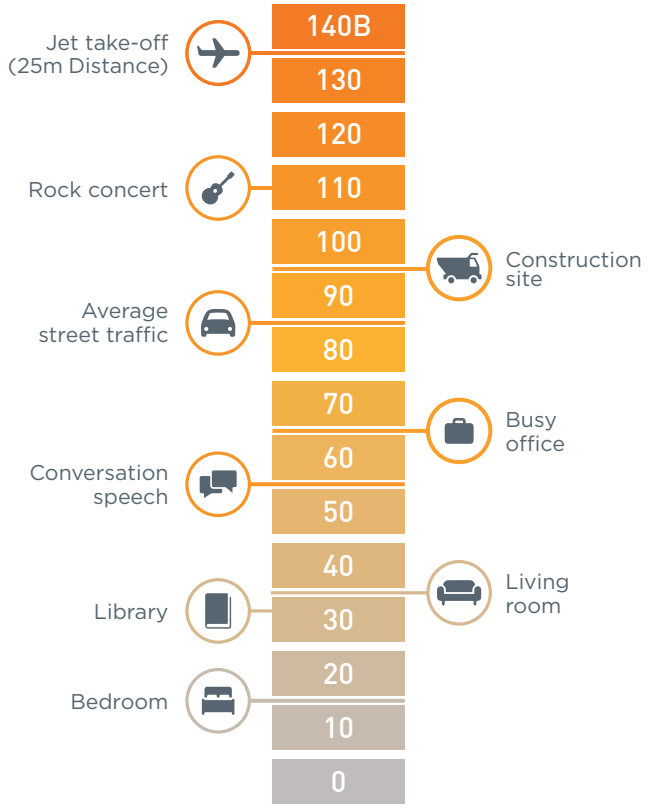


Figure 5.11: Typical Sound Level Thresholds

BAL recognises that aircraft noise is a very important issue to the community, especially to people living close to the Airport or under flight paths. The Airport has an established voluntary Fly Neighbourly Procedures program. The program was established some years ago and is a joint program between BAL as the airport operator and the aviation community based at the Airport.

The Fly Neighbourly Procedures program contains neighbourly procedures for pilots to consider. It outlines flight procedures for fixed-wing aircraft and helicopters that will assist with noise-related airport issues. This includes aircraft noise from airborne and ground-based activities, such as aircraft maintenance.

A copy of the Fly Neighbourly Procedures program is provided in Appendix H.

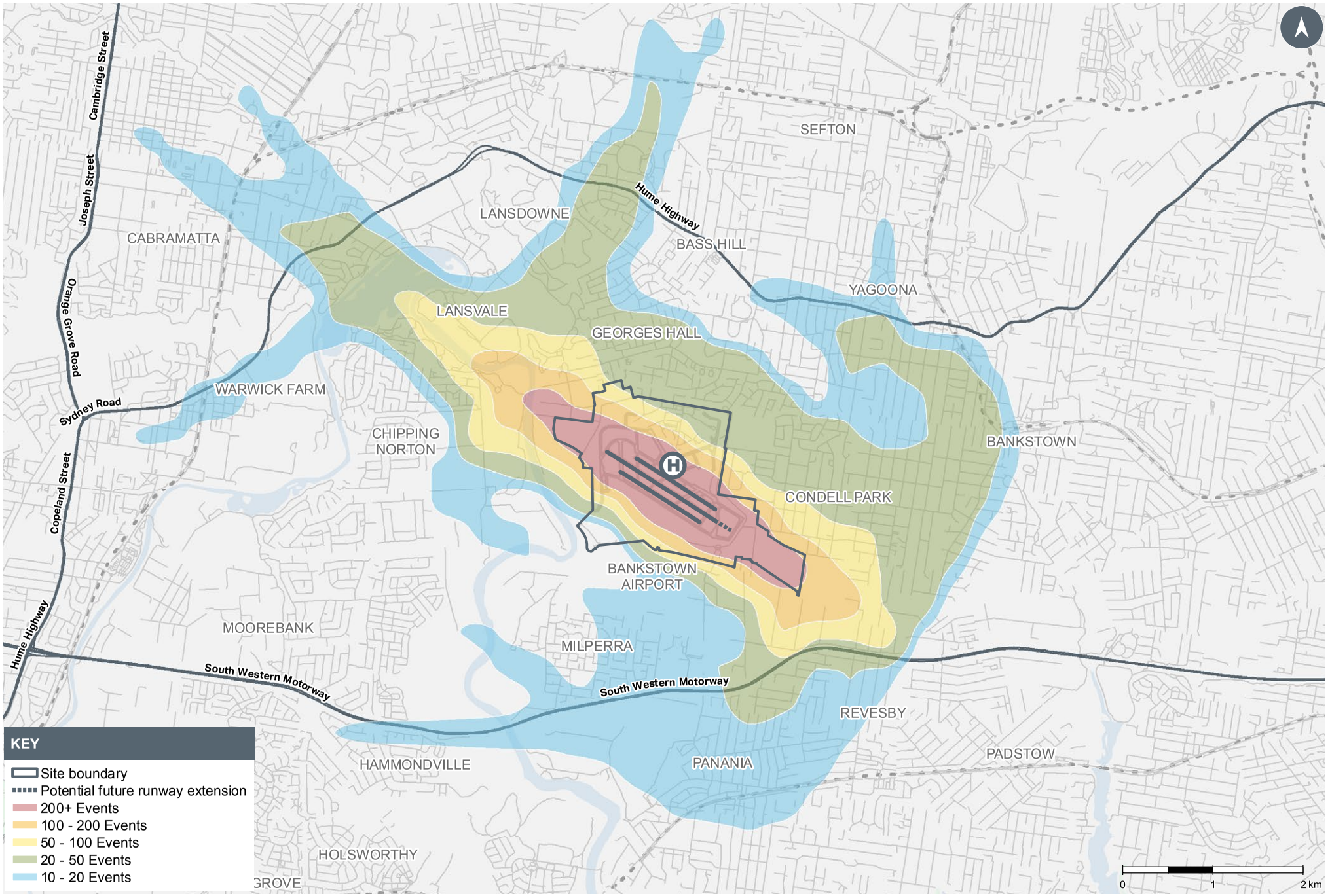


Figure 5.12: N70 Contours

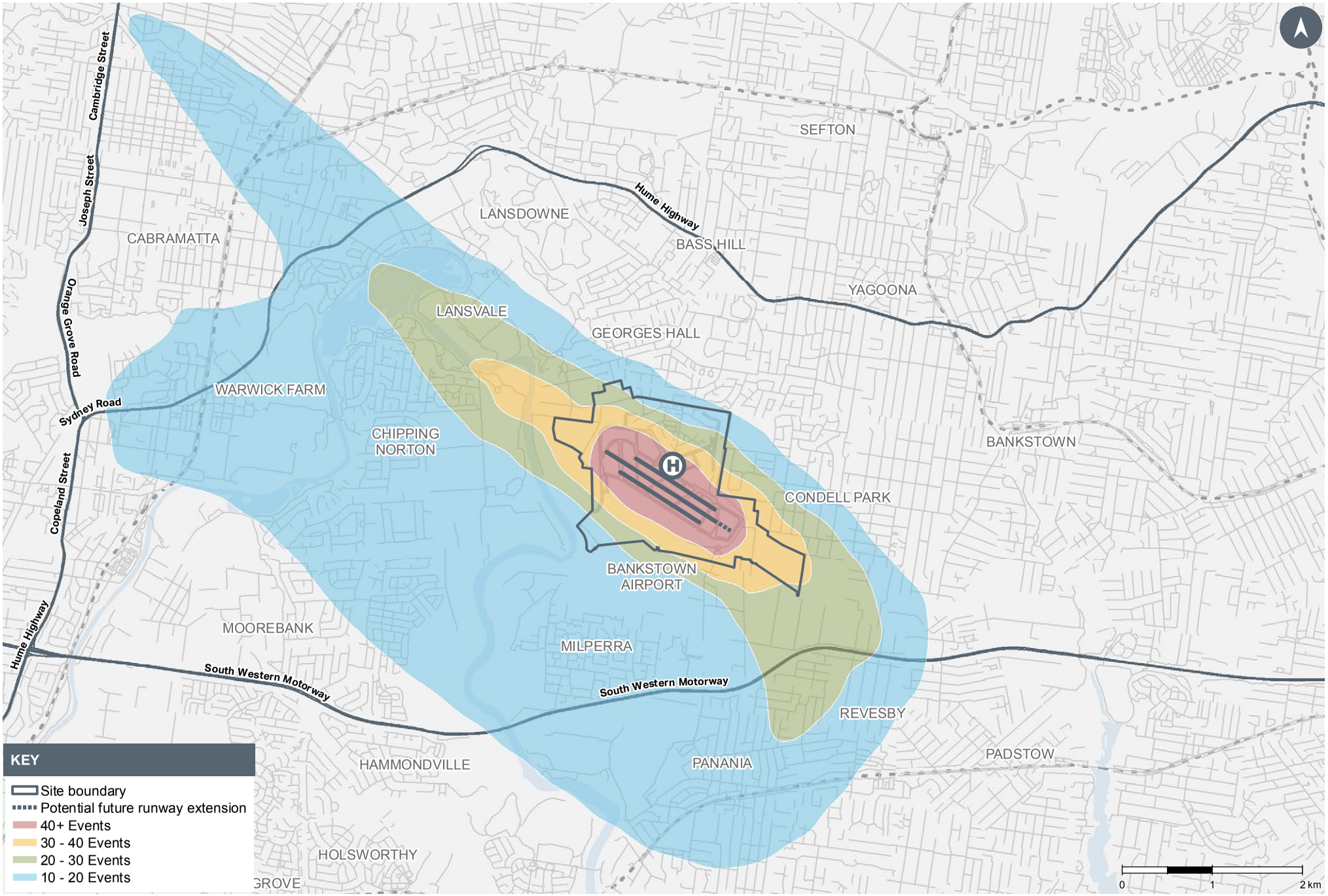


Figure 5.13: N60 Night Contours


Helicopter
Pilot Training

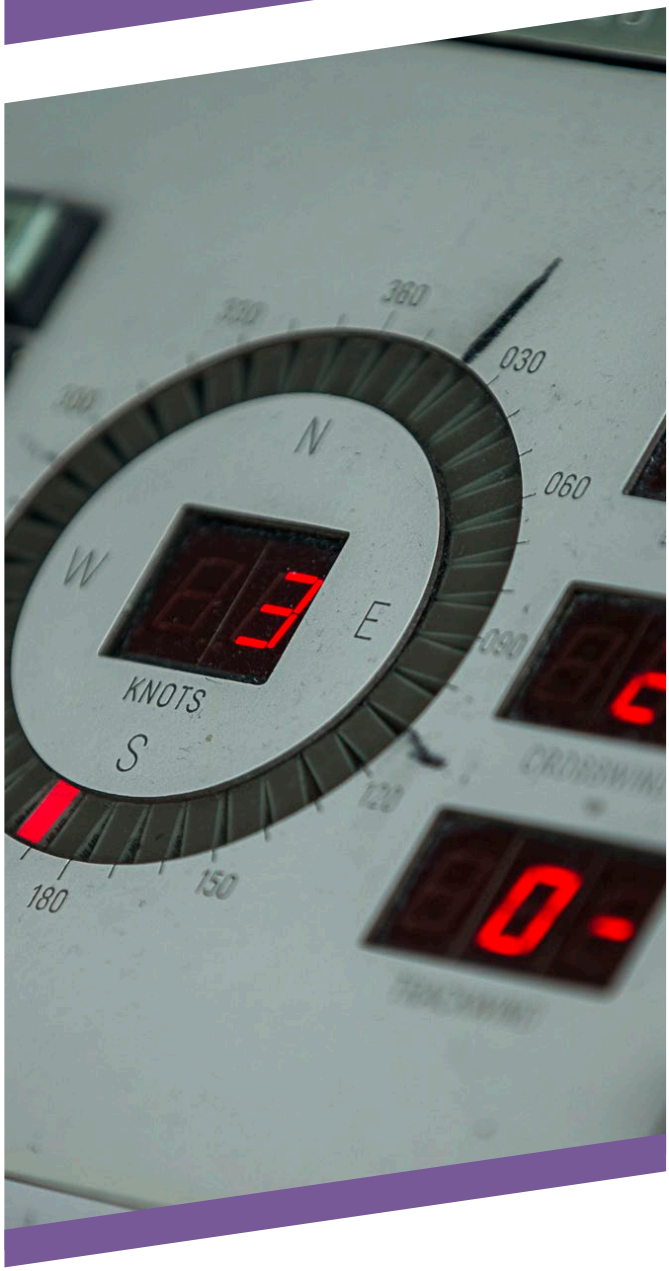
6.0

AIRPORT SAFEGUARDING AND AIRSPACE PROTECTION



6.1 INTRODUCTION

AIRPORTS REPRESENT SIGNIFICANT LONG TERM INFRASTRUCTURE WHICH NEED TO BE PROTECTED TO ENSURE THEIR ONGOING OPERATION, POTENTIAL TO GROW FOR CHANGING AVIATION NEEDS, AND TO DELIVER THE SOCIAL AND ECONOMIC BENEFITS TO THE WIDER COMMUNITY.



The capacity of an airport to operate and respond to growth in the aviation sector is directly impacted by what occurs on and surrounding the airport.

Long-term and effective protection and safeguarding of Bankstown Airport is critical to ensuring ongoing aviation operations and safety. Consideration therefore needs to be given to:

- Land use planning around the Airport, to minimise development which may be impacted by aircraft noise and operations
- Siting, location and design of buildings and structures which may impact windshear and turbulence, affecting aircraft operations
- Managing wildlife on and surrounding the Airport
- Minimising impacts from ground lighting that may distract or confuse aircraft pilots
- Protecting the airspace surrounding the Airport from buildings and structures, which may impinge on the safe arrival and departure of aircraft
- Protecting aviation facilities from development encroachment
- Protecting areas at the end of runways, through public safety areas.

The National Airports Safeguarding Advisory Group (NASAG), consisting of representatives from the Commonwealth, State and Territory Governments, and the Australian Local Government Association, has produced the National Airports Safeguarding Framework (NASF).

6.2 NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK

The aim of the NASF is to improve:

- Safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions
- Community amenity by minimising noise sensitive developments near airports
- Aircraft noise-disclosure mechanisms.

The NASF includes seven guidelines for the operation of airports and related land use planning measures associated with airports in Australia.

An additional guideline – *Guideline I: Managing the Risk in* ***Public Safety Areas*** *at the Ends of Runways* – has recently been endorsed.

While BAL can control development on Airport land and consider the requirements of NASF, development outside of the Airport involves external agencies and authorities, and needs to be managed cooperatively. This means working with the NSW Government and local councils to insert the NASF into planning policies.

The *Greater Sydney Region Plan* (see section 3.5.2) supports the implementation of NASF, stating: *"Managing the interfaces of industrial areas, trade gateways and intermodal facilities by ... recognising and giving effect to the National Airports Safeguarding Framework, incorporating noise, turbulence and wildlife safety measures."*

The Greater Sydney Commission has indicated in the *Greater Sydney Region Plan* that a State-wide approach to implementing NASF is being developed by the NSW Department of Planning, Industry and Environment. Appropriately integrating NASF Guidelines with relevant State and local planning instruments is expected to occur as part of this process.

The remainder of this chapter discusses current airport safeguarding policies and controls protecting the Airport, having regard to the above NASF Guidelines.

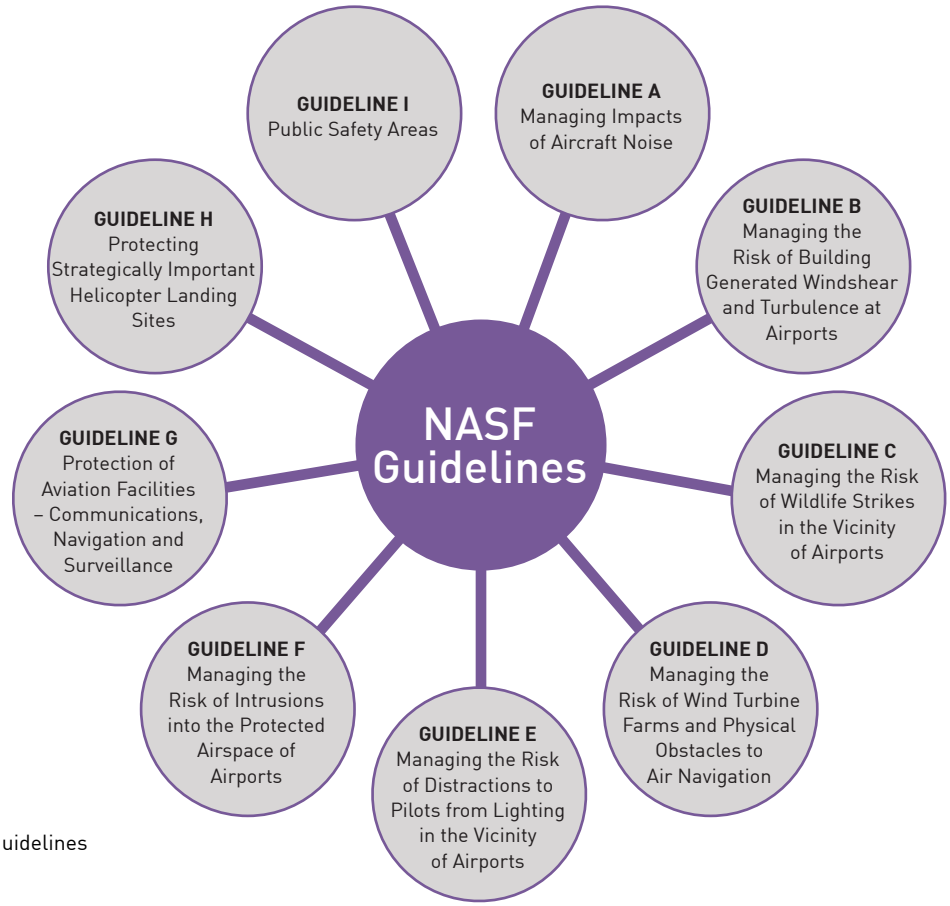


Figure 6.1: NASF Guidelines

6.3 NASF GUIDELINES

6.3.1 GUIDELINE A - AIRCRAFT NOISE

Aircraft noise can negatively impact on community amenity and may result in constraints on airport operations.

Flight paths and aircraft noise at Bankstown Airport are set out in Section 5.0, which includes the ANEF noise contours and other measures for assessing noise impacts associated with the Airport.

BAL works closely with Canterbury-Bankstown, Liverpool and Fairfield Councils in relation to the application of land use planning controls surrounding the Airport. This ensures that any future development does not unnecessarily constrain Airport operations or negatively impact community amenity.

6.3.2 GUIDELINE B - WINDSHEAR AND TURBULENCE

Building-induced windshear may adversely impact on aviation operations where structures are situated close to airport runways. Further, discharge from vent stacks can significantly impact aviation operations.

The Bankstown Airport Development Guidelines and development approval process requires consideration of NASF Guideline B and building-generated windshear issues when considering on-airport development. NASF Guideline B presents a layered risk approach to the siting and design of buildings near airport runways to reduce the risk of building-generated windshear and turbulence.

The *Airports (Protection of Airspace) Regulations 1996* provides for protection of airspace against stack and vent exhaust plumes, which may impact on aviation operations.

Currently there are no specific off-airport planning controls requiring consideration of building-generated windshear for off-airport developments. Bankstown Airport continues to work with the NSW Government and surrounding council in addressing this issue.

The Airport's windshear assessment envelopes, based on Guideline B, are shown in Figure 6.2.

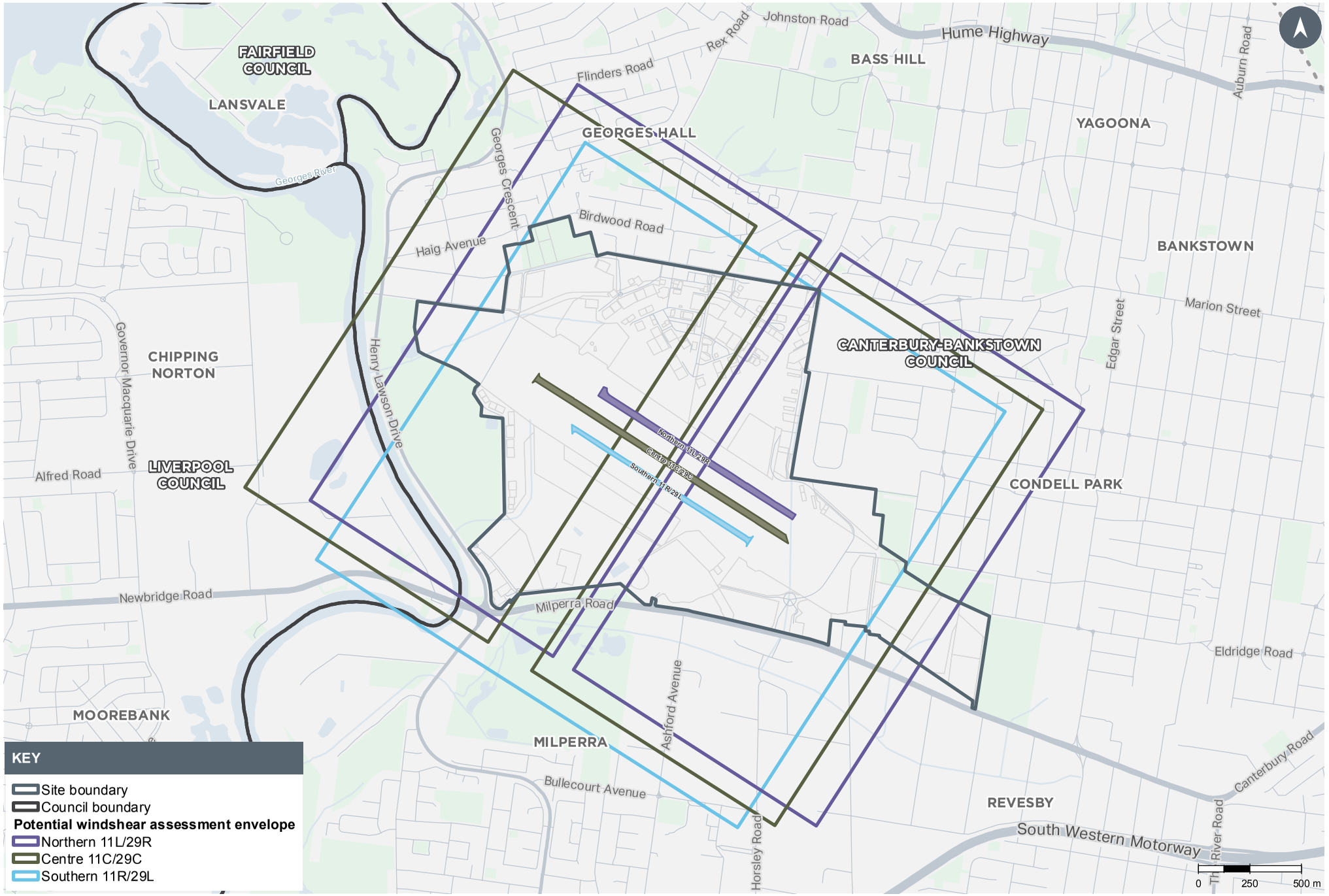


Figure 6.2: Potential windshear assessment envelopes

6.3.3 GUIDELINE C - WILDLIFE STRIKES

Wildlife strikes can cause major damage to aircraft and/or compromise aircraft safety. The Airport, like many other airports, is surrounded by areas that are attractive to wildlife, especially birds.

The Airport and CASA have well-established safety requirements for wildlife management on-airport. In collaboration with CASA, the Airport has prepared a Wildlife Management Plan.

A key aspect of reducing the wildlife hazard risk is ensuring that new landscaping is designed and plant species are selected that reduce the attractiveness of the airport to bird species.

The Bankstown Airport Development Guidelines and development approval process assesses and manages such wildlife management risk. The Airport also implements a series of escalating processes to deter birds.

In addition, the Airport also works with the Canterbury-Bankstown Council and land owners in the vicinity of the Airport to manage and reduce the risk of wildlife hazards.

Figure 6.3 identified the buffer zones as outlined in Guideline C. Buffer are split into three categories: Area A (3km radius), Area B (8km radius) and Area C (13km radius). The radius is taken from each runway end.

6.3.4 GUIDELINE D - WIND TURBINE FARMS

Wind turbines can constitute a risk to low-flying aviation operations, for example, agricultural operations and can be expected to continue to develop as a renewable energy option.

Wind turbines are not considered to be a significant issue for the Airport.

NASF Guideline D provides advice on location and safety management for wind turbines and other similar structures. In addition, the NSW planning system includes off-airport planning controls relating to wind turbine farms. These require any nearby airports to be considered.

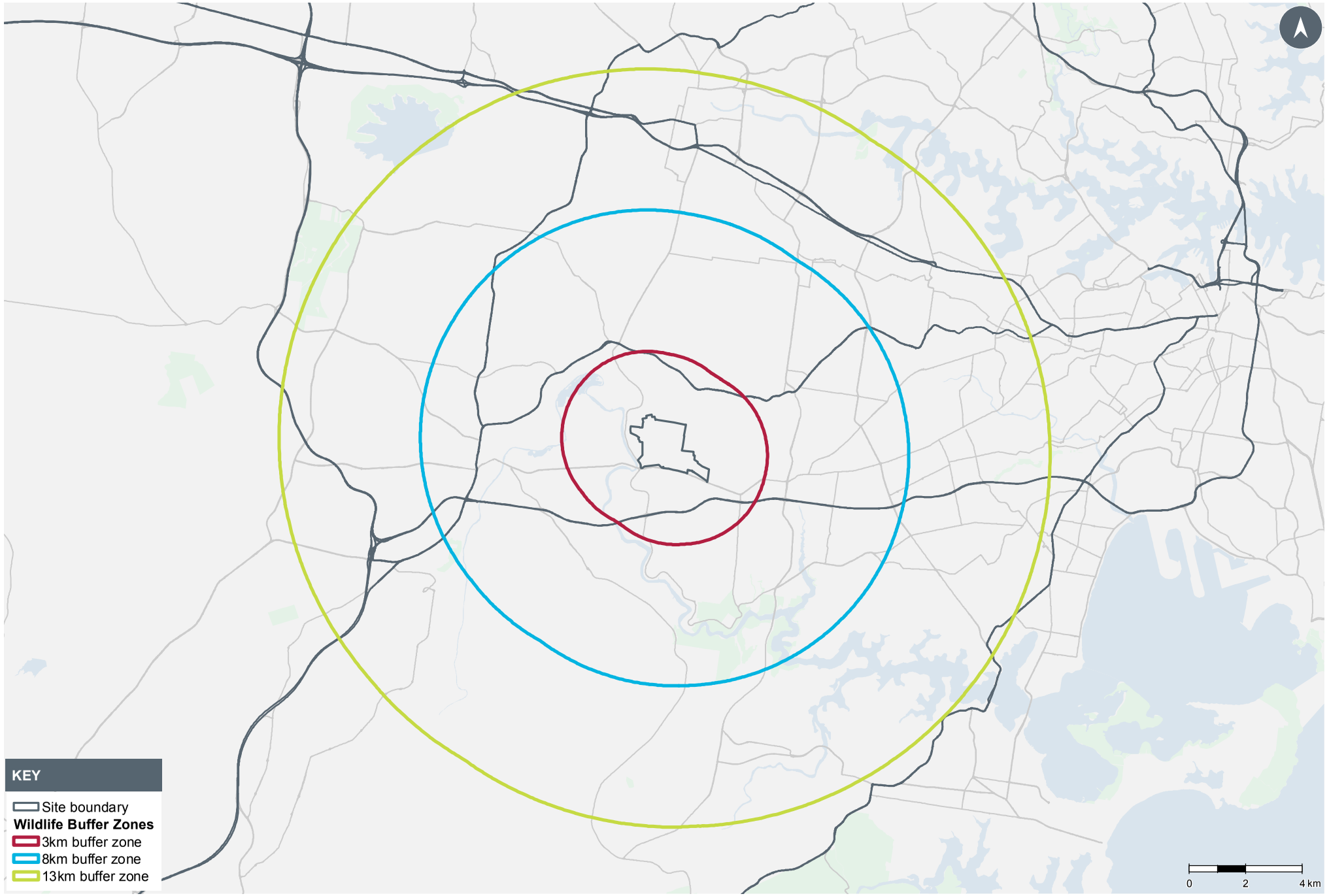


Figure 6.3: Wildlife buffer zones

6.3.5 GUIDELINE E - LIGHTING DISTRACTIONS

Pilots rely on specific patterns of aeronautical ground lights during inclement weather, low light and at night. Aeronautical ground lights, such as runway lights and approach lights, play a vital role in enabling pilots to align their aircraft with the runway in use. They also enable the pilot to land the aircraft on the appropriate part of the runway.

Adverse impacts from ground lighting can often be associated with outdoor advertising displays, sports field lighting and street lighting.

The Bankstown Airport Development Guidelines and development approval process requires NASF Guideline E to be considered when planning on-airport development.

The Bankstown Airport Lighting Plan see Figure 6.4 has been prepared to highlight the maximum lighting intensities in areas surrounding the Airport. There are currently no adverse impacts from ground light emissions around the Airport.

There are no specific off-airport planning controls relating to dangerous lighting around the Airport. Under Regulation 94 of the *Civil Aviation Regulations 1988*, however, CASA has the authority to extinguish or modify lights which may cause confusion, distraction or glare to personnel who are operating aircraft.

6.3.6 GUIDELINE F - PROTECTED AIRSPACE

The operational airspace of airports is the volume of airspace above a set of imaginary surfaces, the design of which is determined by criteria established by the International Civil Aviation Organisation.

These surfaces are established with the aim of protecting aircraft from obstacles or activities that could be a threat to safety, in particular, high-rise buildings.

Under the Airports Act and the *Airports (Protection of Airspace) Regulations 1996*, the airspace around specific airports may be declared as Prescribed Airspace. This protects the airspace to allow aircraft to arrive and depart safety.

Prescribed Airspace is the airspace above either an Obstacle Limitation Surface (OLS) or Procedures for Air Navigational Services – Aircraft Operations (PANS-OPS) surface, as defined in Table 6.1.

Under section 182 of the Airports Act, activities that result in intrusions into an airport's Prescribed Airspace are called 'controlled activities' and cannot be carried out without approval. The airport operator or DITCRD must assess applications for controlled activities, and may impose conditions on approval. It is an offence to carry out a controlled activity without approval, or to breach a condition of a controlled activity approval.

NASF Guideline F provides advice for planners and decision makers about working within and around protected airspace, including OLS and PANS-OPS intrusions, and how these can be better integrated into local planning processes.

Under the Airports Act, local councils with boundaries that fall within Bankstown Airport's protected airspace are required to review all building and development applications received for any Prescribed Airspace infringements.

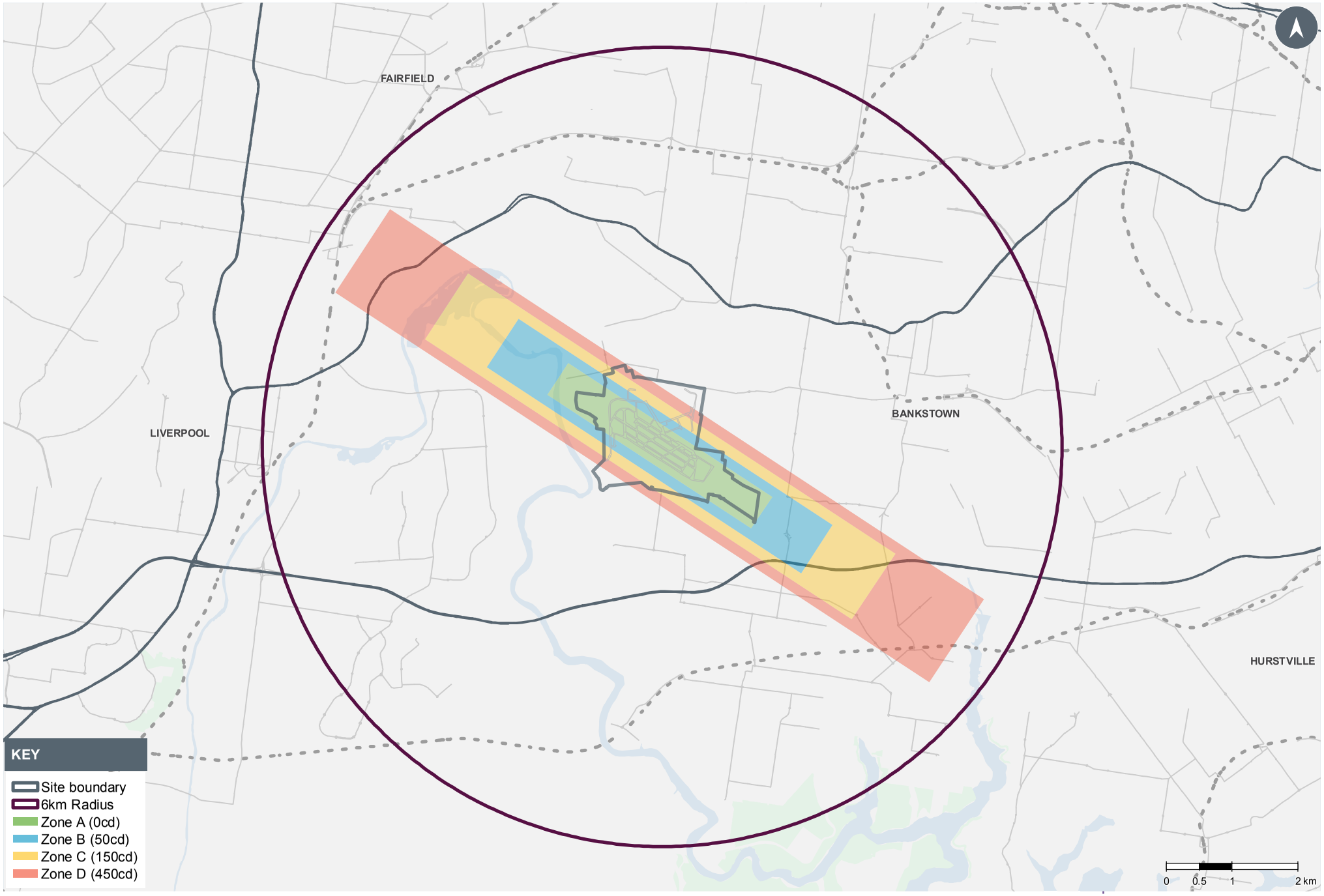


Figure 6.4: Lighting Plan

BANKSTOWN AIRPORT OLS

The Airport OLS is required and defined under the CASA MOS Part 139 – Aerodromes, Section 7.3. These are established in accordance with International Civil Aviation Organization (ICAO) specifications. The Airport OLS is included as Figure 6.5.

The OLS comprises a series of imaginary surfaces in the airspace surrounding the Airport, which must be kept free and clear of obstructions that could be hazardous to aircraft during take-off or landing. It is intended that these surfaces prevent development of obstructions within the airspace, which could adversely impact air navigation or Airport usability.

Height restrictions imposed by the OLS are determined based on the following factors:

- The intended use of the runway, such as take-off, landing or both
- The runway code, as determined by the runway length and type of aircraft using the runway
- The type of approach, either non-instrument or non-precision, or precision instrument approach.

The OLS standards define both a 'take-off climb' surface and an 'approach surface' for landing extending from the end of each runway. Where take-offs and landings occur in both directions along a runway, more restrictive surfaces should be used to determine obstacle height restrictions.

Surrounding the runway pavement is the Runway Strip. Runway Strip dimensions determine where the OLS surfaces begin and are defined based on the width of the runway pavement, type of aircraft using the runway and approach capability available. The Runway Strip is a defined area which includes the runway and stop way. According to Airservices, this aims to reduce the risk of damage to aircraft running off the runway surface, and protects aircraft flying over during take-off or landing.

The following surfaces, when connected together, make up the entire OLS:

- Take-off surface
- Approach surface
- Transitional surface
- Inner Horizontal Surface
- Outer Horizontal Surface
- Conical Surface.

Table 6.1: Definition of Prescribed Airspace Surfaces

OLS and PANS-OPS Definitions	
Obstacle Limitation Surfaces (OLS)	This surface is usually the lowest of the two surfaces that make up Prescribed Airspace and is designed to provide protection for when the pilot is flying by sight.
Procedures for Air Navigational Services – Aircraft Operations (PANS-OPS)	This surface is usually higher than the OLS and is designed to provide protection for when the pilot is flying by instruments. These surfaces may also protect airspace around the navigational aids that are critical for instrument flying.

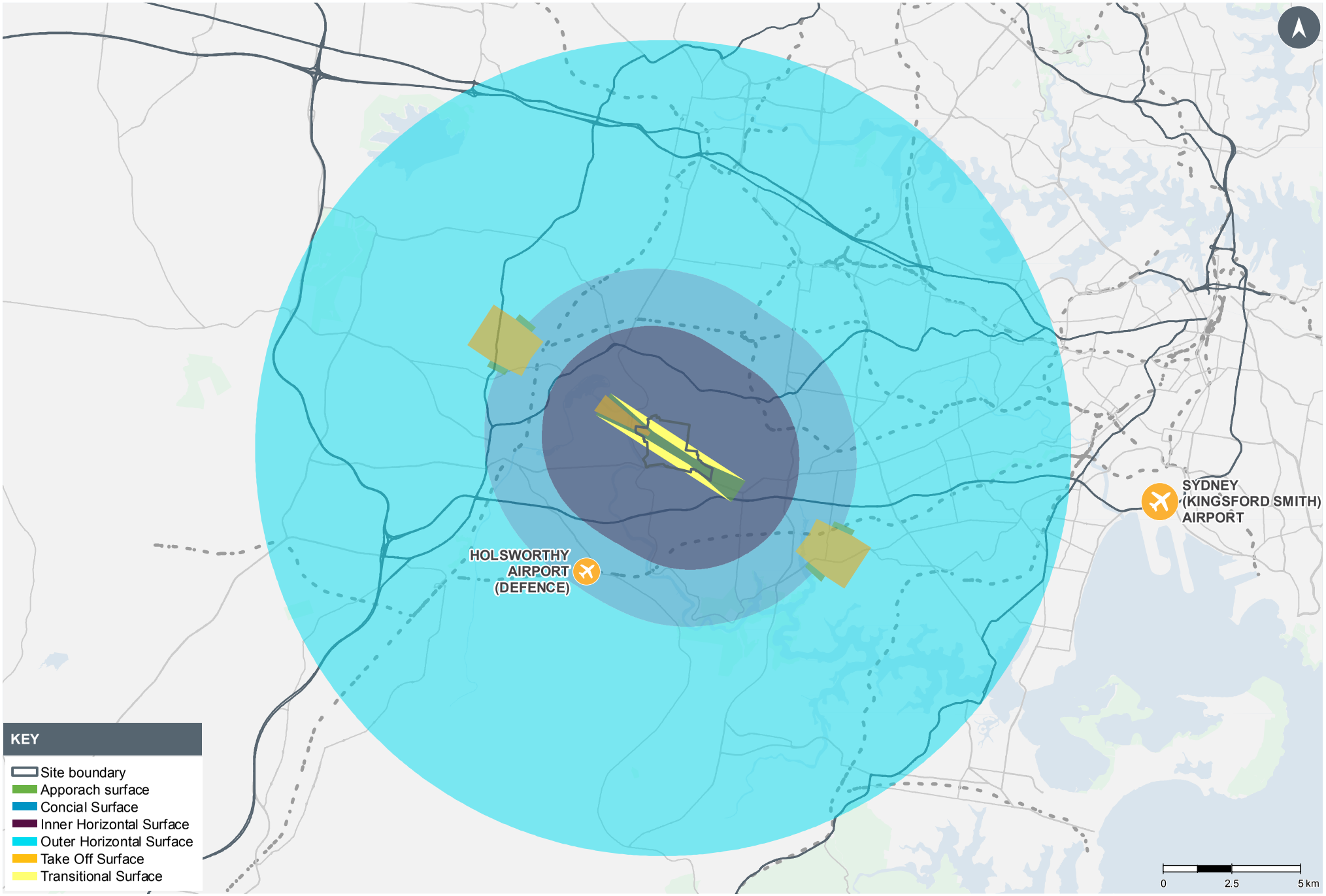


Figure 6.5: Bankstown Airport OLS

BANKSTOWN AIRPORT PANS-OPS

The PANS-OPS surfaces cover all current approaches based on conventional radio navigation aids at the Airport. GNSS RNAV precision and non-precision approach surfaces have also been identified for protection.

The Airport PANS-OPS is included as Figure 6.6 which reflects changes as advised by Airservices in 2016. The changes are in relation to the obstacle assessment areas associated with the Instrument Approach Procedures at Bankstown Airport.

Any precision approach is determined by Airservices, taking into consideration the interface with the Airport airspace and the schedule, fleet mix and aircraft type.

The PANS-OPS surfaces were identified for each of the instrument procedures published by Airservices. Surfaces for the parallel runway complex were amended in the 2005 Master Plan to account for the future extension of Runway 11C/29C (Central Runway), and the future use of a precision approach. Existing Non-Directional Beacon (NDB) approach procedures have also been retained for the future runway extension.

The new Master Plan includes future development in aviation, which is subject to demand and aircraft requirements. Essentially, such development is identical to the previous 2014 Master Plan, and includes:

- OLS extension for runway 11C/29C by 220 metres and widening of the runway strip from 150 metres to 300 metres
- Flattening the approach surfaces to reflect a Code 3 Category 1 precision approach
- Changes to the transitional surfaces to reflect the 11C/29C runway extension and strip widening, and introduction of outer horizontal surfaces associated with a Code 3 Category 1 precision approach.

For future aviation-related developments at the Airport, including any future runway extensions, BAL will work with Airservices to:

- Undertake a detailed review of the current and future navigational system needs
- Undertake air traffic control planning
- Review technical standards and critical zones/siting criteria.

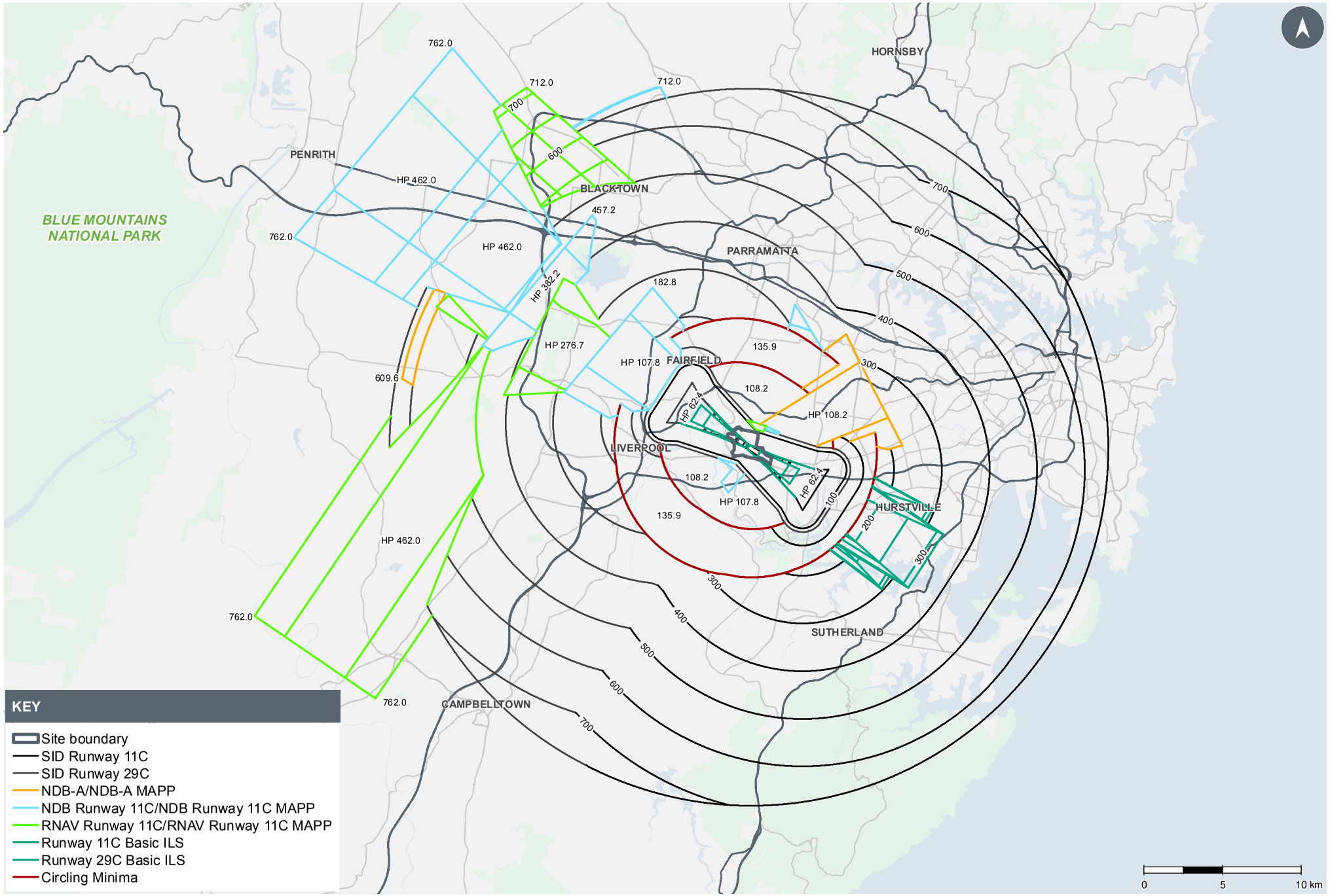


Figure 6.6: Bankstown Airport PANS-OPS

REGIONAL AIRSPACE

In 1998, the then Minister for Transport and Regional Development advised Airservices that Sydney Airport operations should be given priority over operations at Bankstown Airport and other airports in the Sydney region. Since that time, airspace and air traffic management procedures have given precedence to accommodating traffic at Sydney Airport.

The proximity of Bankstown Airport to Sydney Airport, combined with the orientation of runways at these two airports, creates the potential for airspace conflicts under certain combinations of conditions and flight operations.

Control Zones (CTR) for each of the three existing airports in the Sydney Basin (see Figure 6.7) extend from the surface to a specified altitude. The three CTRs within the Sydney Basin are located at Sydney, Bankstown and Camden.

Airspace within the Sydney Basin is currently dominated by the Sydney Airport Control Zone (Sydney CTR) due to the requirement to efficiently manage large volumes of domestic and international aircraft movements in and out of Sydney Airport.

Control areas extend upwards from a specified altitude. The CTAs within the Sydney Basin are Class C airspace. These CTAs make up the Sydney Terminal Control Area (TMA) which is controlled by Airservices Air Traffic Control.

The Sydney Airport Control Area (Sydney CTA) is comprised of a series of controlled airspace blocks ascending in vertical steps and extending out to a maximum radius of 45 nautical miles at its greatest dimension. The Airservices Sydney Terminal Control Unit (Sydney TCU) provides traffic management and separation within the Sydney CTA and CTR.

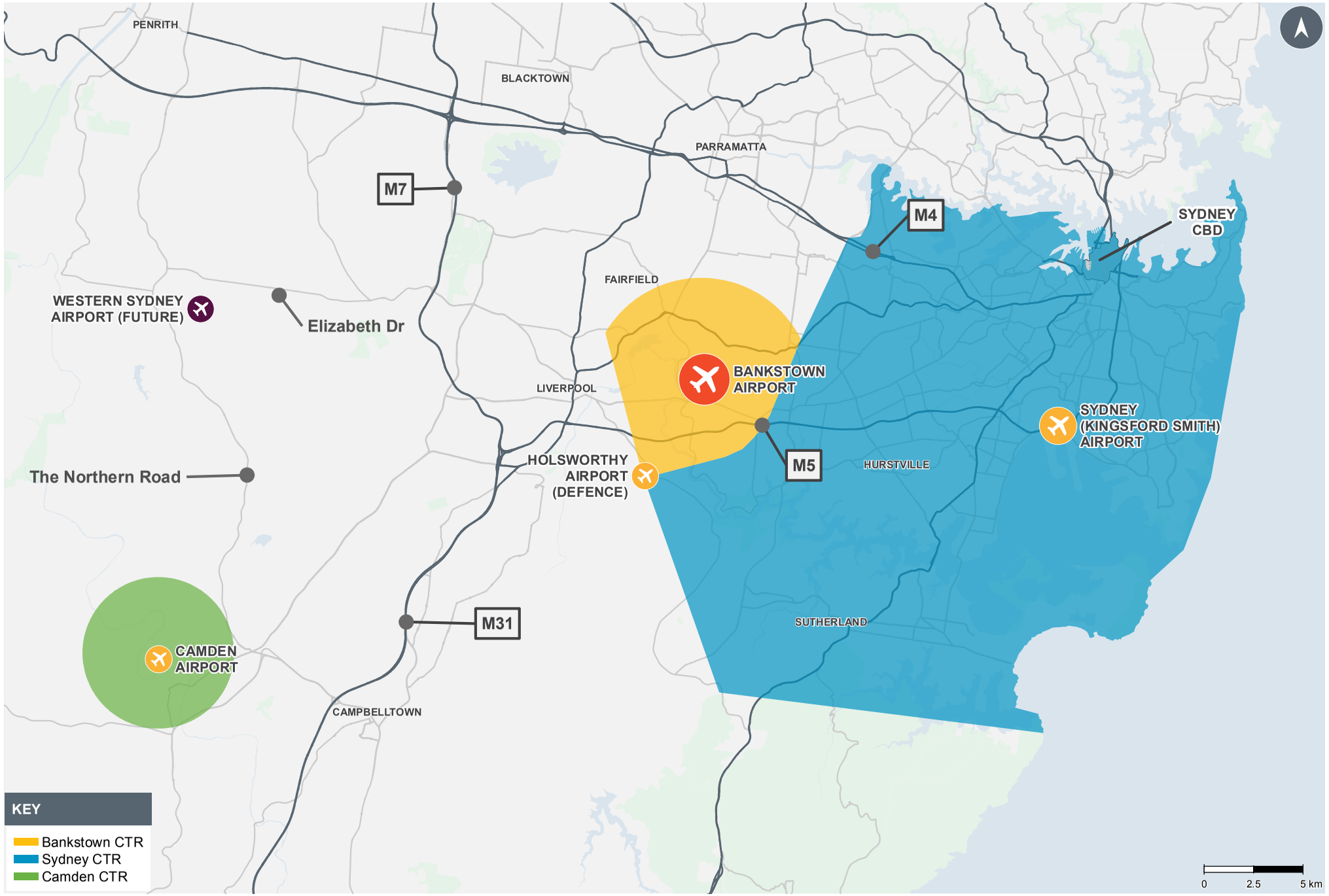
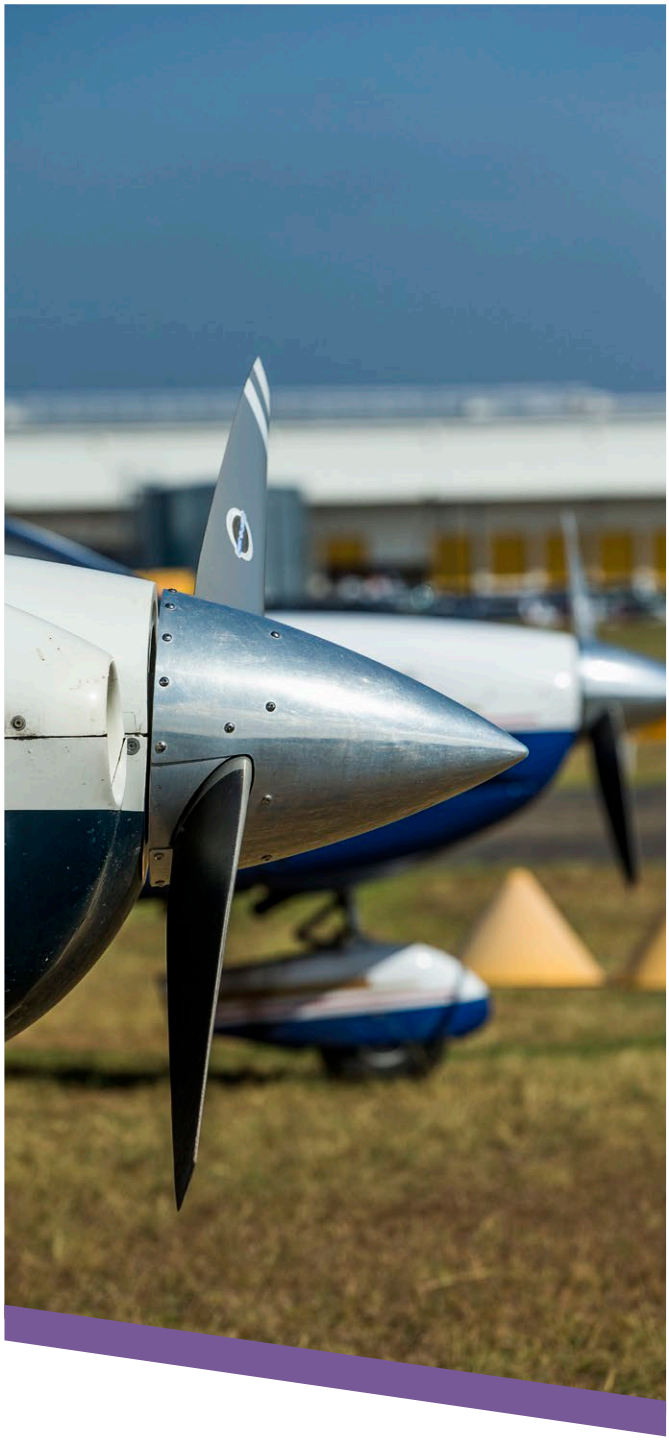


Figure 6.7: Control Zones in the Sydney Basin (Source: Sydney VTC, Airservices, May 2014)



The Bankstown Airport Control Zone (Bankstown CTR) extends three nautical miles from the Airport, except where it would overlap the Sydney CTR to the east. To prevent overlapping, the Bankstown CTR is truncated to approximately two nautical miles from the Airport. The ability of Bankstown and Sydney Airports to operate independently is predicated on the ability of aircraft using Bankstown Airport, to remain within the Bankstown CTR and to not infringe on Sydney Airport airspace.

Airservices has established a Lane of Entry (LOE) to the Bankstown CTR, which allows aircraft access to and from the Airport without requiring entry into Control Zones surrounding RAAF Richmond or Sydney Airport. The LOE is a corridor of airspace, and runs between the Airport and Patonga, and has a ceiling height of 2,000-2,500 feet. Additionally, the LOE may also be used by smaller aircraft wishing to transit from north of Sydney to areas south and south-west of the city.

There are three flying training areas within the Sydney Basin as shown in Figure 6.8. These areas are encompassed by a line extending from the western boundary of the Bankstown CTR to the Richmond CTR then to the Blue Mountains, Camden, and back to the Bankstown CTR. The training areas are designated (Class G) uncontrolled airspace, which extends from the surface up to the base of the overlying CTA step at 2,500 and 4,500 feet. Bankstown Airport and Camden Airport are the predominant source of flying training activity using this area.

Over the period of this Master Plan, airspace within the Sydney Basin will be further reviewed to take account of the proposed Western Sydney Airport, scheduled to commence operations in 2026.

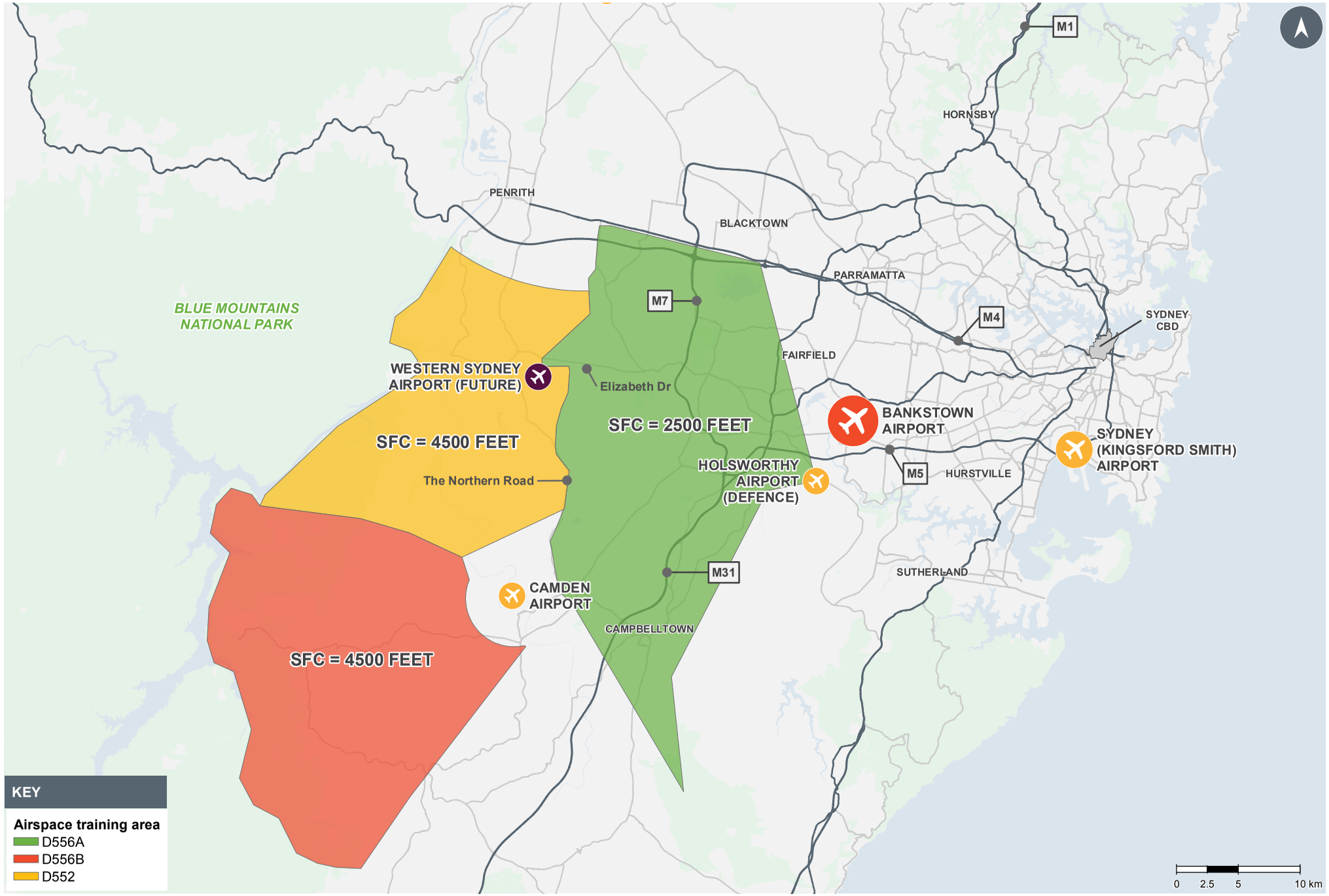


Figure 6.8: Sydney Basin Airspace Training Areas

LOCAL AIRSPACE

The Airport operates under Class D Airspace Procedures with a vertical limit of 1,500 feet and a nominal radius of approximately three nautical miles.

To avoid overlapping CTRs, the Bankstown CTR is truncated to approximately two nautical miles where it abuts the Sydney Airport CTR. Flight procedures at Bankstown are normally conducted so as to avoid aircraft entry into the Sydney Airport CTR, unless specific clearances have been received to do so from the Sydney Terminal Control Unit (TCU).

VISUAL FLIGHT RULES

There are two designated visual flight rules (VFR) approach points, and these inbound tracks are identified in the Airservices En Route Supplement Australia (ERSA) associated with the Airport:

- Prospect Reservoir to the Northwest, on a track of 136 degrees M
- Abeam the 2RN radio transmitter to the south-west, on a track of 057 degrees M.

The Airport also has inbound approach paths specifically for aircraft operating under Instrument Flight Rules (IFR). These approaches are classed as non-precision approaches, with a minimum decision height of 750 feet. Over time, predicted technological advancements should allow for greater flexibility with the use of satellite navigation, giving safe curved instrument approaches into the Airport. This will improve airspace efficiencies, and allow for greater airspace flexibility when considering other existing or proposed airports in the Sydney Basin.

REVIEW OF BANKSTOWN AIRPORT AIRSPACE

In 2017, CASA and Airservices conducted a review of airspace around the Airport. This review recommended the following:

- Designated corridors for aircraft tracking to/from Bankstown Airport, which will better segregate IFR and VFR aircraft, establishment of a designated area for VFR aircraft to descend into Bankstown Airport at night, and increase the Bankstown CTR to 4.2 nautical miles
- Establish a VFR corridor through the Sydney Airport CTR between Bankstown and Engadine
- Designation of a Class E Airspace corridor to the west of Bankstown out to 45 nautical miles.

CASA and Airservices have confirmed that these recommendations will be further reviewed for potential implementation during 2018-2019.

AIR TRAFFIC CONTROL OPERATIONS

The Air Traffic Control Tower (ATCT) at the Airport operates from 6.00am, 9.30pm Monday through Friday, and 6.00am to 8.30pm on Saturday and Sunday.

Aircraft entering the Bankstown CTR must first obtain a clearance from Airservices prior to entry. Outside tower hours the CTR reverts to a Common Traffic Advisory Frequency (CTAF). During this period, pilots must follow rules and procedures published by CASA to allow for the safe flight of aircraft.

Under visual conditions, the outer runways are operated simultaneously with contra-rotating circuits. One runway, typically the Northern Runway (Runway 11L/29R) provides for arrival and departures while the Southern Runway (Runway 11R/29C) is used for circuit training or 'touch and go' operations. The Centre Runway (Runway 11C/29C) is used for larger aircraft, or as an overflow runway to assist either of the outer runways.

At night or in instrument conditions, all operations are generally processed through the Centre Runway.

CIRCUIT TRAINING

Circuit training at the Airport involves repetitious operations and is directed to the Southern Runway for noise mitigation reasons. This allows aircraft to fly over primarily open space and commercial or industrial properties. Arrivals and departures are managed on the Northern Runway, with aircraft departing from or joining circuits to the north of the Airport.

Circuits are conducted at 1,000 feet. Aircraft departing the Airport do so by extending the upwind, crosswind or downwind leg of the circuit, tracking clear of the inbound Approach Points, and their associated flight paths. Departures in an easterly direction (Runway 11) will leave the CTR on climb to 1,500 feet, and departures in a westerly direction (Runway 29) will maintain 1,000 feet and depart either to the west of north.

When Runway 29 is in use, arriving aircraft enter the Bankstown CTR at 1,500 feet and maintain this altitude until on the downwind leg of the circuit. Airservices issues a clearance to descend to the runway visually when it is safe to do so. When Runway 11 is in use, aircraft arriving from Prospect or with a 2RN radio transmitter enter the CTR 1,000 feet. This allows for vertical segregation with aircraft departing at 1,500 feet.

6.4 PROTECTION OF AVIATION FACILITIES

Communication, navigation and surveillance facilities are crucial to the safety of aviation. Airservices and the Department of Defence rely on these to ensure the safety of civilian and military aircraft operations.

NASF Guideline G provides land use planning guidance to better protect such facilities. These include the control tower, wind indicators and NDB.

The Airport's development approval process ensures the location and efficiency of on-airport communication and navigational facilities are considered for on-airport developments.

There are currently no off-airport planning controls relating to the protection of communication, navigation and surveillance facilities.

6.5 PUBLIC SAFETY AREAS

Public Safety Areas are areas of land at the end of a runway within which development should be restricted to control the number of people on the ground at risk of death or injury in the event of an aircraft accident on take-off or landing. These generally cover an area where the risk per year resulting from an aircraft crash to a representative individual ('individual risk') is of the order of 1 in 100,000.

NASF Guideline I, Managing the Risk in Public Safety Areas at the Ends of Runways, has recently been endorsed. The Guideline suggests two methods suitable for a planning-led approach to the assessment of the PSA:

- UK NATS Methodology
- Queensland State Planning Policy.

Using the Queensland State Planning Policy method, the Airport has identified Public Safety Areas at the end of each runway (see Figure 6.9). This is one method of calculating Public Safety Areas, utilising an isosceles trapezoid for the end of each runway with the following dimensions:

- Width at the end of a runway – 350 metres
- Width at the end of a public safety area – 250 metres
- Length of a public safety area – 1,000 metres.

As part of the master planning process, and the ongoing on-airport development approval process, Bankstown Airport has regard to crash risk and public safety. Depending on the type of development being proposed, Bankstown Airport undertakes a safety case.

Off-airport land use zoning falls within the jurisdiction of the surrounding local government areas. No legislation or guidelines presently exist with respect to permissible off-airport land uses with respect to aircraft crash risk. Bankstown Airport will continue to work with the NSW Government and surrounding local government authorities on the implementation of NASF Guideline I.



Figure 6.9: Bankstown Airport Public Safety Area (QLD Model)


B1

7.0

AVIATION INFRASTRUCTURE



7.1 OVERVIEW

The Airport has extensive aviation infrastructure including:

- Runways
- Helicopter landing site (HLS)
- Taxiways
- Aircraft parking
- Airport lighting
- Communication and navigation facilities
- Passenger terminal.

Aviation infrastructure services a range of aviation operations, including:

- Medical and emergency services
- Flight training and aviation studies
- General aviation, including service and maintenance facilities
- Small- to medium-size freight and charter operations
- Turbo prop and regional jet operators.

Key aviation infrastructure is shown in Figure 7.1. This also includes the new aviation infrastructure associated with NSW Police Air Wing Facility (refer to Section 7.3.5)



7.2 EXISTING INFRASTRUCTURE

7.2.1 RUNWAYS

The Airport consists of three parallel runways, as detailed in Figure 7.1:

1. Northern Runway (11L/29R)
2. Centre Runway (11C/29C)
3. Southern Runway (11R/29L).

Separation distance between the runway centrelines is 106 metres.

The physical characteristics of each runway are summarised in Table 7.1.

Aircraft over 20,000 kilograms can apply to BAL for a pavement concession.

Turbojet aircraft are restricted to the longest and strongest runway – Runway 11C/29C (centre runway). This runway is Code C classified, and operates 24-hours per day, with the remaining two runways being classified Code A and Code B and only operational during daylight hours.

7.2.2 TAXIWAYS

The Airport is served by an extensive taxiway network, providing access and exits from all runway ends as well as aviation facilities, including aircraft parking areas (see Figure 7.1). The extent of the taxiway system, being almost 12 kilometres in length, is the result of incremental development over many years and the distribution of aviation operations across the Airport.

Full length parallel taxiways are provided along the outer side of the Northern Runway (11L/29R) and the Southern Runway (11R/29L). Loop taxiways are available around the ends of the parallel runway system, which permits aircraft movements between the north and south sides of the Airport without creating runway incursions.

The maximum pavement strength rating for taxiways at the Airport is 20,000 kilograms, with limited exemptions up to 50,000 kilograms. Taxiways rated to 20,000 kilograms are only available on a limited number of taxiways and taxi routes between the runways and the passenger terminal.

Passing bays are provided where single lane taxiways extend for long distances and an alternative taxi route is not available for bi-directional traffic.

Engine run-up bays are provided adjacent to Taxiways A, B, C and E, with all run-up bays sized to accommodate multiple aircraft at a time.

Table 7.1: Runways at Bankstown Airport

Runway	Classification	Length (metres)	Width (metres)	Pavement strength (kilograms)	Tyre pressure rating (kilopascals)
Northern 11L/29R	Code B	1,100	30	16,000	1,050
Centre 11C/29C	Code C	1,416	30	20,000	1,050
Southern 11R/29L	Code A	1,038	23	5,700	580

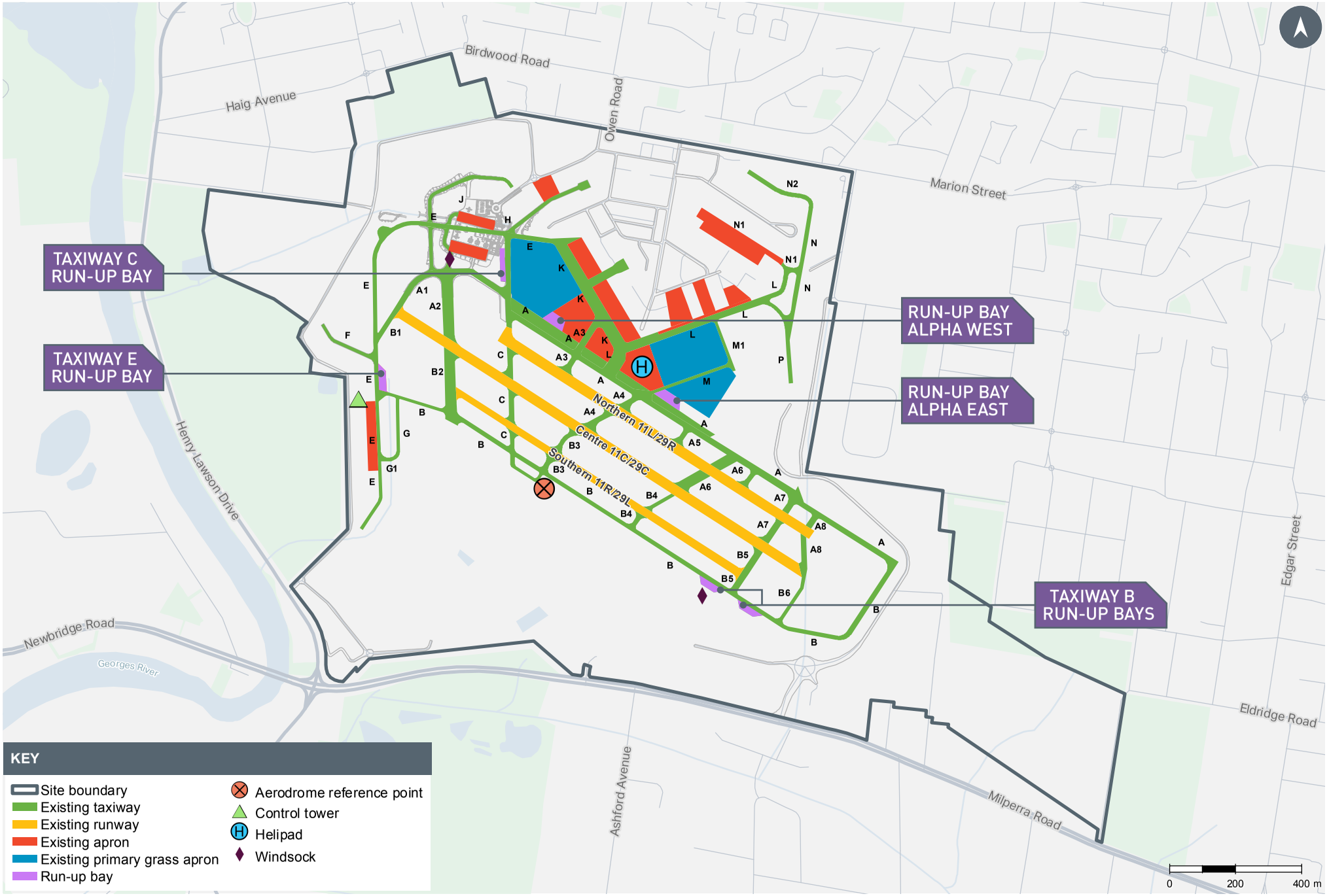


Figure 7.1: Existing runways and taxiways

7.2.3 HELICOPTER LANDING SITE

A designated HLS is located on a sealed, surfaced area on the northern side of the airfield, adjacent the Airport Chevron (see Figure 7.1). The HLS services the needs of all existing helicopter operators at the Airport.

Larger helicopter arrivals and departures can also take place from the runways.

7.2.4 AIRCRAFT PARKING

The general aviation area consists of over 100,000 square metres of paved and non-paved aircraft parking areas.

There are a number of forms of aircraft parking at the Airport:

- Apron parking – paved parking for both rotary and fixed-wing aircraft.
- Grassed parking – grass surfaces designated for small aircraft parking.
- Transient parking – paved aircraft parking areas for short term use.

Paved aircraft parking aprons are located north of the Northern Runway and distributed around the terminal area complex. Grass-surfaced parking areas can accommodate parking for up to 90 small aircraft.

Approximately 85 hangar structures are located at the Airport, most of which are located north of the runways, in or adjacent to the Airport Chevron. There are also additional hangars along Tower Road to the west of the Airport site.

7.2.5 AIRPORT LIGHTING

The Centre Runway is equipped with medium-intensity runway lighting, runway threshold identification lights and a Precision Approach Path Indicator System (PAPI) at each end.

The Northern Runway has low-intensity runway lighting which are currently available when the Centre Runway lights are not operating.

Airservices owns and maintains an electrical generator as a source of standby emergency power for all airfield lighting in the event of a power failure.



7.2.6 COMMUNICATION AND NAVIGATION FACILITIES

The Air Traffic Control Tower, located on the western side of the Airport on Tower Road, is operated by Airservices. Airservices has previously examined options to relocate this facility to a more central location along the runway system. Relocation of the Tower is dependent on Airservices national priorities, funding availability and approvals.

The NDB is situated south of the runways and is used by two of the non-precision approaches published for the Airport. Airservices has recently confirmed that the NDB will remain in its current location.

There are two illuminated wind indicators on the Airport, located in the north-west and the south-east sectors of the Airport. The north-west wind indicator is being relocated to facilitate the construction of the new facility for the NSW Police Air Wing.

7.2.7 PASSENGER TERMINAL

The existing passenger terminal building is a single storey structure situated within the Airport Chevron adjacent the Northern Runway.

The terminal has a current capacity of approximately 7,000 passengers per year, with an estimated passenger processing capacity of 140 departing and 110 arriving passengers per hour. It is fully air-conditioned and includes seating areas, public amenities and two departure gates.

The Airport does not currently feature regular passenger services. Accordingly, the building is used on an occasional basis for passengers boarding charter flights and Airport-related operations and initiatives.

7.3 AIRFIELD INFRASTRUCTURE DEVELOPMENT

High quality aviation infrastructure is essential for successful operation of the Airport and must be maintained and improved to address current and forecast demands.

Airfield infrastructure development identified for the Airport includes:

- Runway pavement
- Lighting upgrades
- Runway threshold upgrade
- Runway End Safety Areas (RESA)
- Upgrades associated with the NSW Police Air Wing facility
- Taxiway improvements
- Helicopter operational arrangements
- RPT services
- Potential future runway extension.

7.3.1 RUNWAY PAVEMENT

Runway pavement upgrades will be conducted, as required, during the five year period of this Master Plan. A runway pavement inspection commenced in 2018, and the assessed condition will guide the runway pavement upgrade requirements. The upgrades will address compliance issues, should they arise.

7.3.2 LIGHTING UPGRADES

BAL will undertake an upgrade of the Airfield Lighting System associated with the Centre Runway (11C/29C). This upgrade will include lighting upgrades to some taxiways and the Airport Lighting Room. The upgrade will address compliance issues, including runway light spacing and positioning of threshold lights. Once lighting upgrades are completed, the Northern Runway (11L/29R) lighting system will no longer be required and will be decommissioned.

7.3.3 RUNWAY THRESHOLD UPGRADE

Realignment of the runway threshold on the Centre Runway (11C/29C) will be undertaken during the five year period of this Master Plan to allow full use of the runway for landing aircraft.

7.3.4 RUNWAY END SAFETY AREAS

BAL proposes to establish Runway End Safety Areas (RESA) to both ends of the Centre Runway (11C/29C) to improve aircraft safety. The RESA will measure 90 metres by 60 metres at each end of the runway, and be engineered to support the largest aircraft expected to use the Airport.

In line with normal operational practice, RESA will not be included as part of the take-off or landing distances.

7.3.5 UPGRADES ASSOCIATED WITH THE NSW POLICE AIR WING FACILITY

The construction of the new facility for the NSW Police Air Wing is due to commence in 2019 to upgrade the helicopter and fixed-wing establishment at the Airport. The new operation is designed to consolidate NSW Police Force Aviation Support Branch operations into a single purpose-built facility. The new facility will be established in the north-western area of the Airport, close to the north-western end of three runways, allowing for quick response times and improved operation efficiency.

Existing infrastructure in the north-western area of the Airport will need to be revised to allow for this development to take place. The area and changes are illustrated in Figure 7.2

7.3.6 TAXIWAY IMPROVEMENTS

During the initial five years of this Master Plan, BAL proposes to improve existing taxiway infrastructure, as set out in Table 7.2.

7.3.7 HELICOPTER OPERATIONAL ARRANGEMENTS

A secondary HLS located within the north-western portion of the airfield was referenced in the 2014 Master Plan. This secondary HLS was established temporarily to assist with anticipated increases in helicopter traffic for the 2000 Sydney Olympic Games. Following environmental assessments relating to the proposed development of the new NSW Police Force Aviation Support Branch (NSW Police Air Wing) facility, and consultation with users, this secondary HLS will be decommissioned. Helicopter operations at the Airport continue to be available from the runways, main HLS, or those other areas designated by Bankstown Airport Limited (if any) following relevant safety case/risk assessments.

Helicopter arrivals and departures must be from the HLS on the northern side of the airfield, adjacent to the Airport Chevron, or from the runways for larger helicopters.

The north-western section of the Airport will continue to be used for low altitude helicopter training and manoeuvres.

Table 7.2: Taxiway and Proposed Improvements

Taxiway	Proposal Improvements
Taxiway C, E and H intersection	Realigned allowing for compliance with MOS Part 139 taxiway code distance standards
Taxiway E	Modified between Taxiway C and the realigned Taxiway J in Figure 7.2. New taxiways installed to assist with taxiing aircraft in this area.
New Code B Taxiway	Construction of a new taxiway on the western side of the NSW Police Air Wing facility joining Taxiways C and E
Taxiway C Run-Up Bays	Closure of run-up bays due to minimum Taxiway code distance requirements with Taxiway C. The Run-Up Bay will be relocated to Taxiway A by extending the current Alpha West Run-Up Bay
Taxiway J	Realigned to the west and re-join with Taxiway E. The realignment will consider the environmental sensitive area which contains *Hibbertia Fumana* has been discovered (see Chapter 12.0 – Environment)

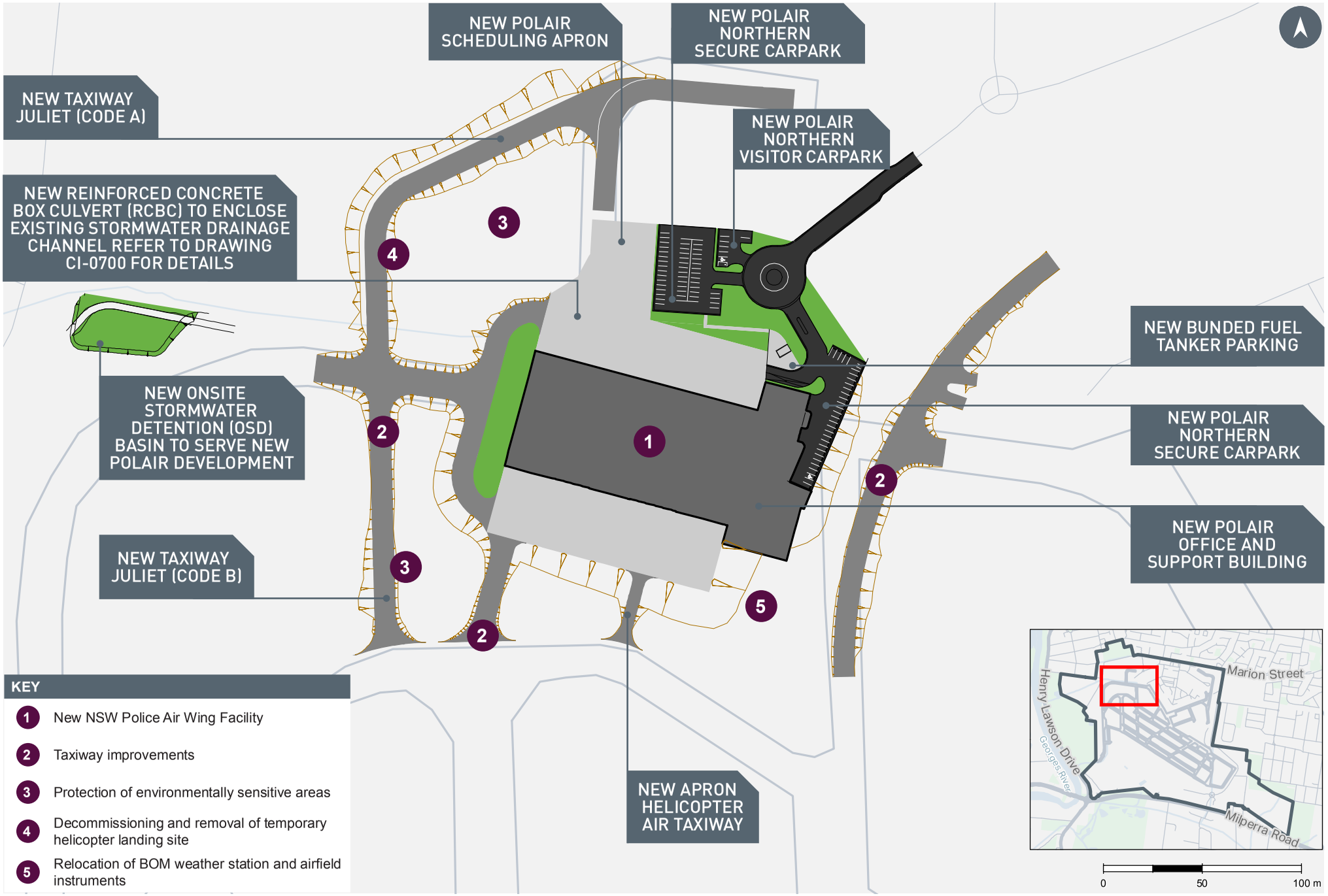


Figure 7.2: North-Western Area of Bankstown Airport

7.3.8 REGULAR PUBLIC TRANSPORT SERVICES

Previous Master Plans have foreshadowed the introduction of niche RPT services from Bankstown Airport to capital and regional cities using jet and turbo prop aircraft capable of carrying between 35 and 90 passengers. The previously endorsed ANEF 2014 was based on 12 movements per day (six arrivals and six departures), or a total of 4,380 aircraft movements per year.

This Master Plan has retained the potential to accommodate low capacity and low frequency niche start-up operations by small regional or interstate-based carriers. No new or expanded facilities are required at Bankstown Airport in the five year planning period of this Master Plan under the following conditions:

- Aircraft forecasts are limited to a maximum of six arrivals and six departures per day. Using the expected aircraft type, current airspace arrangements would be adequate
- The Centre Runway (11C/29C) length and strength is currently capable of handling aircraft which carry capacity of up to 50 passengers
- Sufficient aircraft apron space is available to cater for predicted levels of aircraft activity
- The existing passenger terminal has the capacity to accommodate likely passenger flows.

7.3.9 FUTURE RUNWAY EXTENSION

The current Centre Runway (11C/29C) is not sufficient in length to enable Code 3C aircraft to operate at Maximum Take-Off Weight (MTOW) or without undue payload or stage length restrictions. While these types of aircraft can, and do, use the existing runway, an extension would provide operational efficiency and flexibility.

The future extension of Centre Runway (11C/29C) to the south-east has been identified in all previous Master Plans for the Airport, and has been retained as part of the current Master Plan. This includes a 220 metre extension to the Centre Runway to extend the runway to 1,636 metres.

Any extension to the Centre Runway would be subject to demand from aircraft operators, and would require a detailed cost-benefit analysis and relevant approvals (likely to include the preparation of a Major Development Plan).

7.4 SYDNEY BASIN AVIATION OPERATION IMPROVEMENTS

To assist operations during overnight inclement weather, an instrument approach procedure for the Centre Runway (Runway 11C/29C) is being developed by Airservices. Further studies are being undertaken by Airservices to allow for this approach to commence at a fixed location which avoids Sydney CTA.

This instrument approach would also assist emergency service aircraft, and freight aircraft carrying medical and time-critical cargo to land at the Airport rather than diverting landings to another location. When applied, this would avoid the delay in delivering critical medical supplies, and patient arrivals to any of the hospitals located in the Sydney Basin.

In 2016, CASA and Airservices conducted a joint study of airspace and procedures surrounding the Airport (Joint Airspace and Procedures Analysis Team (JAPAT)). The study was a response to aviation safety incidents around the Bankstown CTR.

In October 2017, Airservices tabled the JAPAT recommendations report at the NSW Regional Airspace and Procedures Advisory Committee (RAPAC) meeting. The final report recommended three staged proposals (Refer to Table 7.3) to improve the safety of aircraft operations around the Airport.

BAL will continue to work with Airservices, WSA and DITCRD to implement on-going safety improvements to airports in the Sydney Basin.

Table 7.3: JAPAT Recommendations

Stages	JAPAT Recommendations
Stage 1	• Improve the movement of aircraft through established corridors • Segregation of IFR and VFR traffic • Establish a surveyed area west of Bankstown allowing for night VFR aircraft safer descent procedures • Increase the Bankstown CTR to approximately 4.2NM west of the airfield
Stage 2	Establish a VFR corridor through the Sydney CTR between the Airport and the Engadine area.
Stage 3	Establish a Class E airspace corridor west of Bankstown out to 45 nautical miles from Sydney.



8.0

LAND USE PLANNING



8.1 OVERVIEW

LAND USE PLANNING IS A CRITICAL ASPECT OF THE MASTER PLAN. THE LAND USE PLAN PROVIDES THE OVERALL PLANNING INTENT FOR BANKSTOWN AIRPORT RELATING TO LAND USE STRATEGIES AND OBJECTIVES FOR DEVELOPMENT. THE LAND USE PLAN CONSIDERS NSW STATE PLANNING POLICIES AND LOCAL PLANNING SCHEMES SURROUNDING THE AIRPORT.



The land use plan represents a revision and update of the 2014 Master Plan. These changes ensure the Airport is positioned to meet evolving local and regional area needs. It provides a greater level of detail and visibility around the planned future for the Airport, and better aligns with the NSW planning system. The land use plan takes into account the following federal, NSW and local strategic and statutory planning policies:

- *Airports Act, 1996*
- *Environmental Planning and Assessment Act (1979)* (EP&A Act)
- *Greater Sydney Region Plan (2018)*
- *South District Plan (2018)*
- *Bankstown Local Environment Plan (2015)*
- *Bankstown Development Control Plan (2015)*
- *Bankstown Employment Lands Development Study (2009).*

This Master Plan recognises that the Airport is a key strategic general aviation asset for NSW. The Airport is a world-class aviation training facility, and a major employment, commercial and industrial hub for the Bankstown region.

Consistent with the NSW state planning system, the Airport has been divided into four land use 'zones'. The Bankstown Airport Zone Plan is included in Figure 8.1 and shows the area of each zone. A brief description of each zone is provided in Table 8.1.

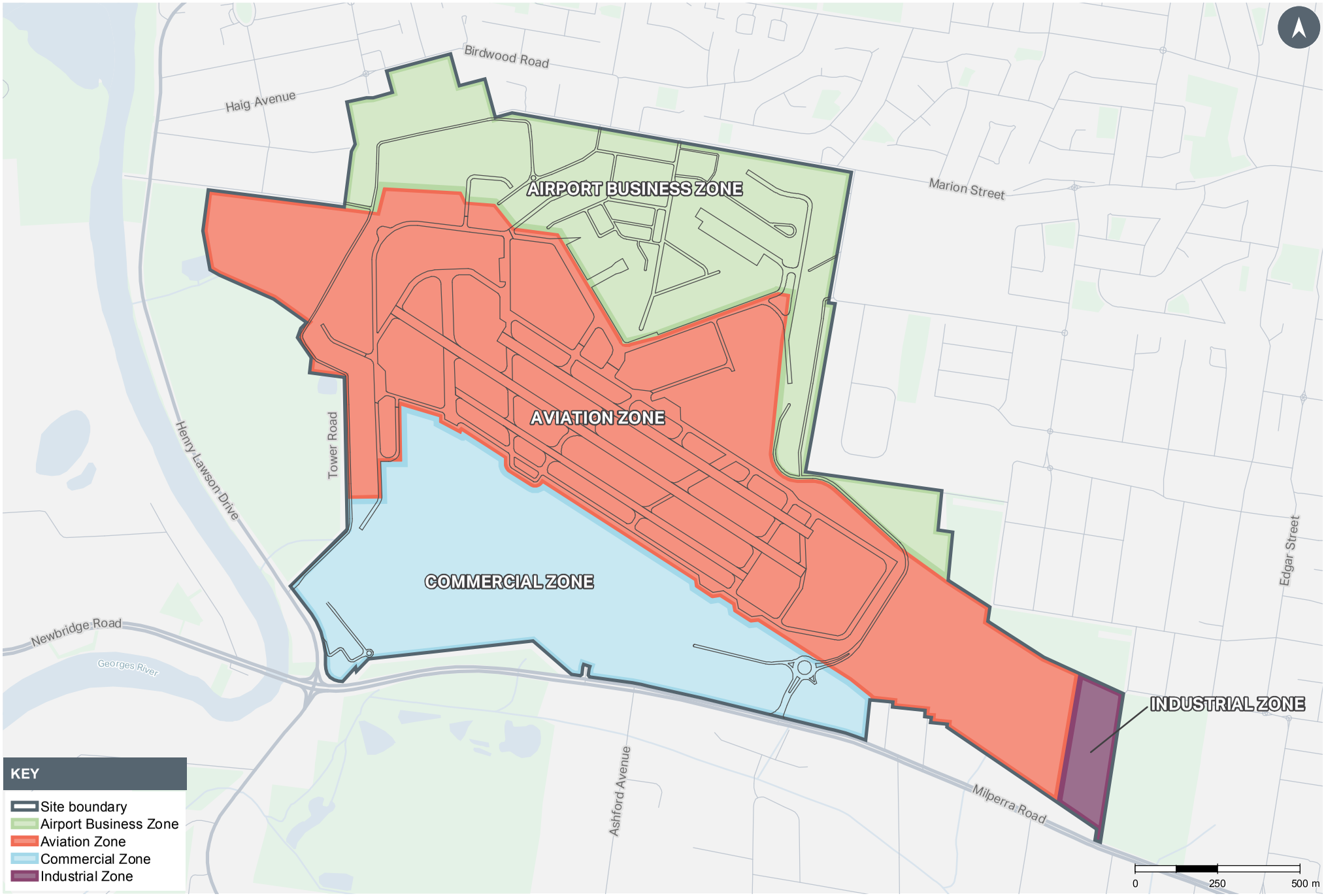


Figure 8.1: Bankstown Airport Zone Plan

Table 8.1: Bankstown Airport Zones

Zone	Area	Description
Airport Business Zone*	75.6ha	The Airport Business Zone is located in the northern part of the Bankstown Airport site and is the 'heart' of airport operations. It includes the main terminal, aviation and commercial related businesses.
Aviation Zone	155.2ha	The Aviation Zone is situated in the central spine of the Airport and is the location of runways, taxiways, aircraft movement and parking areas, along with significant airside tenancy buildings.
Commercial Zone*	76.3ha	The Commercial Zone is a commercial growth area located in the southern part of the Airport in close proximity to the major motorways, the Moorebank intermodal and Milperra industrial areas.
Industrial Zone	6ha	The Industrial Zone is located at the eastern edge of the Airport site at the end of the runway and is an established industrial area.

* Zones further divided into Precincts

The land use plan for the Airport encourages aviation-related operations. Each zone provides for relevant objectives and a desired character statement to reflect land use differences across the Airport. The spatial locations of the different Airport areas influence the types of land uses that are suitable and possible, based on characteristics such as established airport infrastructure and proximity to surrounding uses.

The Airport Business Zone and Commercial Zone are further divided into precincts. A Structure Plan is provided for these two zones and reflects the importance of differentiating zone uses/activities.

8.2 COMMONWEALTH PLANNING CONTEXT

The Airport is a privately-leased Commonwealth airport. As such, it is subject to the planning framework set out in the Airport Act.

Land use, planning and building controls on privately-leased Commonwealth airport lands are regulated under Part 5 of the Airports Act and are summarised below:

- An Airport Master Plan is required for each airport
- MDPs are required for major airport developments (see section 8.2.1)
- Building activities on airport sites require approval
- Buildings and structures must be certified as complying with the Airports *(Environmental Protection) Regulations 1997* (AEPR).

Although state and local government land use planning systems do not apply to Commonwealth land, the Airports Act requires the Master Plan to describe the consistency with such planning schemes. It is expected that airports should, to the greatest extent possible, be compatible with local planning regimes. An overview of the relevant state and local planning frameworks is provided in section 8.3, and consistency with these local provisions are provided throughout this Master Plan. The remainder of section 8.2 provides an overview of the Commonwealth planning policy relevant to land use planning at the Airport.



8.2.1 MAJOR DEVELOPMENT PLANS

Under the Airports Act, a MDP must be prepared prior to commencing construction of any development classified as a 'Major Development'. Major Developments include, but are not limited to:

- Construction of new runways and runway extensions
- Major aviation construction works (including major terminal extensions)
- Major building projects valued over $25 million (monetary trigger reviewed every three years)
- Development with the potential for significant environmental impact or effects on the local or regional community
- Development that affects an area identified as 'environmentally significant' in the environment strategy
- Any 'sensitive' developments (see section 8.2.2).

The Airports Act requires each MDP to be considered by the Minister following public comment and consultation. All developments are subject to formal building approval in accordance with the *Airports (Building Control) Regulations 1996*, taking into account the *Airports (Environmental Protection) Regulations 1997* (see section 8.2.3).

BANKSTOWN AIRPORT POLAIR MDP

An MDP has been approved by the Minister for the consolidation of existing NSW Police Force Aviation Support Branch (NSW Police Air Wing) operations into a new purpose-built integrated facility in the north-western portion of the Airport (within the Aviation Zone).

The development consists of a two-storey office building, hangar and maintenance areas to accommodate the helicopter and fixed-wing operations.

This MDP was considered and assessed against the 2014 Master Plan, and aligns with the land use planning framework for this Master Plan 2019.

BANKSTOWN AIRPORT SOUTH WEST PRECINCT SITE WORKS AND WAREHOUSE MDP

A Draft MDP is being considered by the Minister for the undertaking of site works and development of a warehouse within the south-western part of the Airport (within the Commercial Zone). The MDP (Stage 1 only) would facilitate the development of a major industrial, logistics and innovation precinct, with retail gateways. It includes:

- An overall layout concept for the site works and warehouse, addressing site wide drainage, site works, external road connections, internal roads and allotment layouts
- A light industrial development of up to 40,000 square metres (gross leasable floor area).

While complying with the Master Plan 2014, the MDP also aligns with this Master Plan 2019. The public consultation and approval process will be progressed in parallel with the Master Plan 2019.

8.2.2 SENSITIVE DEVELOPMENTS

The term 'sensitive development' is defined in section 71A of the Airports Act as the development of, or a redevelopment that increases the capacity of any of, the following:

- Residential dwelling
- Community care facility
- Pre-school
- Primary, secondary, tertiary or other educational institution
- Hospital.

The following do not constitute sensitive developments:

- An aviation educational facility
- Accommodation for students studying at an aviation educational facility at the airport
- A facility with the primary purpose of providing emergency medical treatment and which does not have in-patient facilities
- A facility with the primary purpose of providing in-house training to staff of an organisation conducting operations at the airport.

Development that falls under the definition of 'sensitive development' is prohibited, except in exceptional circumstances. These must be demonstrated before the Minister agrees to an MDP being prepared.

Georges River Grammar School (located at the north-western edge of the Airport, within the Aviation Business Zone), constitutes a 'sensitive development'. There are no plans to increase the student capacity at Georges River Grammar School at this stage.

8.2.3 BUILDING ACTIVITY APPROVALS

In its capacity as the Airport Lessee Company, BAL must provide consent before any approval can be given for building activity at the Airport. In considering its consent, which may be granted with conditions, BAL must ensure that proposed building activities are consistent with this Master Plan, include the land use planning objectives and principle of development control (see section 8.4), and the Bankstown Airport Development Guidelines (see section 8.5).

In addition, the Airports Act requires building activity approvals to also be obtained from the Airport Building Controller (ABC), which is appointed by the Secretary of DITCRD. The ABC functions as the building certifier to ensure compliance with the Building Code of Australia and other relevant legislation and standards.

BAL has established an environmental management regime in accordance with the Airports Act. An Airport Environment Officer (AEO) has been appointed by DITCRD to ensure the Airport and its customers comply with the Airports Regulations and operate in accordance with good environmental practices outlined in Chapter 11 – Airport Environment Strategy. The AEO has several specific statutory functions under the Airports Act and *Airports (Environment Protection) Regulations 1997* (AEPR).

8.3 STATE AND LOCAL GOVERNMENT PLANNING CONTEXT

The following sections describe NSW state and local government strategic and statutory planning frameworks relating to the Airport. These outline how the land use plan has been developed to align with such plans.

A high level comparative analysis between airport planning and the NSW state and local government planning system is provided in Figure 8.2, demonstrating the similar levels of control and consultation across each justification.





Figure 8.2: Comparison of Airport, NSW State and Local Government Planning

8.3.1 STRATEGIC FRAMEWORK

Section 3.5 provides a detailed description of the Greater Sydney Region Plan and the South District Plan, both prepared by The Greater Sydney Commission in 2018. This section provides an overview of the strategic context of the plan to Bankstown Airport, along with a review of the strategic policy documents, including the Bankstown Employment Land Development Study and the Bankstown Local Area Plan.

Greater Sydney Region Plan (2018)
The Sydney Region Plan states that it is important to protect the Airport's operational activities and notes that a state-wide approach to implementing the National Airport Safeguarding Framework is being developed by the NSW Department of Planning, Industry and Environment. The National Airport Safeguarding Framework is detailed in Chapter 6.

South District Plan (2018)
The Airport is located within the South District of Greater Sydney.

The *South District Plan* (Greater Sydney Commission, 2018) sets out aspirations and proposals for the Greater Sydney South District. It is a guide for implementing the *Greater Sydney Region Plan* at a District level and a bridge between regional and local planning. As with the Greater Sydney Region Plan, in undertaking strategic planning processes, and/or preparing or considering Planning Proposals to amend LEPs, planning authorities must give effect to the District Plan.

The South District Plan identifies the Airport as a 'Trade Gateway' that fulfils a significant state-wide role. It also identifies that the Airport has great potential to further benefit the economies of the District and NSW. It notes that the Airport's future must be strategically planned in the context of the Western Sydney Airport and Badgerys Creek Aerotropolis, and there is a need to manage airspace and the future distribution of regional and freight aviation services.

One of the 18 Planning Priorities set out in the South District Plan includes the aim to grow and invest in the Airport trade gateway as an economic catalyst for the South District. Under this priority, the South District Plan identifies 130 hectares of land within the Airport site adjacent to the Milperra industrial land (within the Commercial Zone) with great potential for future development for non-aviation uses. This potential is driven by the Airport and the industrial area's location in terms of access to air transport, the road and rail freight network, the proposed Moorebank intermodal terminal, Liverpool, Bankstown and the Liverpool health and education precinct. It also notes that public transport for workers could improve with the potential expansion of the Sydney Metro City and Southwest passenger rail network from Bankstown to Liverpool, which would further support this type of development.

Based on these identified strategic opportunities, the Airport and adjoining Milperra industrial area have been collectively identified as a 'Collaboration Area'. Collaboration Areas are nominated places where the GSC will facilitate the establishment of governance arrangements and support the coordination of activities across agencies and governments to deliver significant productivity, sustainability and liveability outcomes. The District Plan states that the GSC will work with Canterbury-Bankstown Council, the New South Wales Government, the Commonwealth Government, BAL, industry and the community to develop a long-term economic strategy for the Collaboration Area. The Plan states that this will result in:

- Improved transport connections to the broader district
- Integrated planning for the Airport and planning of surrounding lands
- Coordinated infrastructure delivery
- Facilitated advanced manufacturing and innovation
- Expanded opportunities stemming from Western Sydney University Bankstown Campus and the UNSW Aviation School.

Bankstown Employment Lands Development Study

The *Bankstown Employment Lands Development Study 2009* was prepared by Bankstown City Council. It was a city-wide study and a response to the New South Wales Government's 2010 Metropolitan Strategy. The *Employment Lands Development Study 2009* set out a strategic direction for employment lands in Bankstown and made recommendations on how New South Wales Government jobs targets may be met. The Study was adopted by Council in September 2009.

One of the key directions of the Study was to strengthen the role of the Airport-Milperra area as a 'Specialised Centre'. The Specialised Centre categorisation indicates that the Centre is of strategic significance to the Sydney Metropolitan Region in terms of attracting employment and future investment. Specialised centres will be a focus of future infrastructure investment.

At the time of publication, of the 15,400 existing jobs, around 3,000 people were employed in association with the Airport. The remainder were predominantly employed in the Milperra industrial area and the University of Western Sydney.

The vision for this Specialised Centre is to expand opportunities for high value-added industries and skilled jobs associated with aviation, manufacturing and logistics. This is to be done through improved planning and industry networks, development and redevelopment opportunities, and access to and from the area. Value chain profiling indicates significant opportunities to further strengthen aerospace industries. The Study notes that the Airport represents the major potential for new activities through improved use of surplus land, if airport-related activities are rationalised, and the short north south runway is removed. The short north south runway was closed subsequent to the Study being released (in 2006).

Bankstown Local Area Plans

Canterbury-Bankstown Council is preparing eight Local Area Plans (LAPs) to inform its city-wide strategic planning, outline the delivery of infrastructure and priorities and inform statutory planning. The Airport is located in the local area known as a 'Specialised Centre (Bankstown Airport Milperra Industrial Precinct/Condell Park Industrial Precinct)'.

The Council acknowledges that due to the unique activities and character within this Specialised Centre, a different approach is required to that used in other local areas. An Issues Paper is yet to be developed for the area, which will precede the development of the LAP. Following LAP release, a proposal will be developed to implement the LAP and set out the changes to the statutory framework.

BAL is working closely with Canterbury-Bankstown Council on the planning context surrounding the Airport and implementation of NASF Guidelines to protect ongoing Airport operations.

8.3.2 LEGISLATIVE FRAMEWORK

The planning legislative framework within NSW primarily comprises the EP&A Act, the *Environmental Planning and Assessment Regulation 2000 (EP&A Regulation)* and four key instruments that are made under the EP&A Act:

1. State Environmental Planning Policies (SEPPs)
2. Local Environment Plans (LEPs)
3. Section 117 Local planning directions
4. Development Control Plans (DCPs)

These instruments are outlined in this section.

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The statutory planning framework in NSW is provided through the EP&A Act. The New South Wales Government and relevant local councils administer the EP&A Act and planning instruments created under it. The objects of the EP&A Act are:

a. To encourage:
   i. The proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages, for the purpose of promoting the social and economic welfare of the community and a better environment
   ii. The promotion and co-ordination of the orderly and economic use and development of land
   iii. The protection, provision and co-ordination of communication and utility services
   iv. The provision of land for public purposes
   v. The provision and co-ordination of community services and facilities
   vi. The protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats
   vii. Ecologically sustainable development
   viii. The provision and maintenance of affordable housing
b. To promote the sharing of the responsibility for environmental planning between the different levels of government in NSW
c. To provide increased opportunity for public involvement and participation in environmental planning and assessment.

ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000

While the EP&A Act provides the overarching framework for the NSW planning system, the EP&A Regulations support day-to-day system requirements. The EP&A Regulations contain key operational provisions for the NSW planning system, including environmental impact statements, building regulations, subdivision certification and development contributions.

STATE ENVIRONMENTAL PLANNING POLICIES

Prepared under Part 3 of the EP&A Act, SEPPs deal with issues determined to be significant to NSW. SEPPs are administered by the Minister for Planning and Environment as statutory environmental planning instruments that require consideration in the development assessment and environmental assessment process. SEPPs apply across NSW and can allow or prohibit certain types of development in an area even where local controls may not. A SEPP may identify the type of development where the Minister is the decision maker (consent authority).

Consideration has been given to provisions set out in relevant SEPPs (including Sydney Regional Environmental Plans which are now deemed to be SEPPs) in the development of this Master Plan, as detailed in Appendix D.

LOCAL ENVIRONMENTAL PLANS

Prepared under Part 3 of the EP&A Act, LEPs provide the local planning controls for a Local Government Area (LGA). The Airport site is located within the Canterbury-Bankstown LGA. It is noted that the Canterbury-Bankstown LGA was formed by the merger of Canterbury and Bankstown LGAs in 2016. The separate Canterbury and Bankstown LEPs are still in force until a single, comprehensive LEP is developed.

On 21 September 2005, the NSW Minister for Planning and Environment introduced a Standard Instrument – Principal LEP (LEP template) for all local government areas within NSW. The Bankstown LEP 2015 (BLEP 2015) was developed in accordance with this standard instrument.

The BLEP 2015 identifies the Airport site as being zoned SP2 Infrastructure – Air Transport Facilities as shown in Figure 8.3. The objectives of this zone are to provide for infrastructure and related uses and to prevent development that is not compatible with or that may detract from the provision of infrastructure.

In the BLEP 2015, the land immediately to the west of the Airport site is generally zoned for recreation and residential uses. Land to the south of the Airport site is primarily zoned for industrial uses, with some pockets zoned for recreation. Land immediately to the east of the site is zoned for a combination of industrial and recreation uses with these areas providing a buffer to an area zoned for residential uses beyond. Land to the north of the Airport site is primarily zoned for residential uses with some pockets zoned for mixed uses. The zoning of areas surrounding the Airport and associated objectives are outlined in Table 8.2.

Consideration has been given to the relevant zones and provisions of BLEP 2015 in preparing this Master Plan, as detailed in Appendix E.

LOCAL PLANNING DIRECTIONS ISSUED BY THE MINISTER

In accordance with section 117(2) of the EP&A Act, the NSW Minister for Planning and Infrastructure is authorised to direct a local council to do or have regard to certain things when exercising its functions. These directions generally apply to all local councils unless a direction is area specific.

The current local planning directions, the majority of which were issued on 1 July 2009, have been considered in drafting this Master Plan, as detailed in Appendix E.

DEVELOPMENT CONTROL PLAN

Prepared under Part 3 of the EP&A Act, DCPs perform the role of guiding implementation of provisions set out in an LEP. DCPs provide detailed planning and design guidelines to support the planning controls of an LEP; however, the controls included in a DCP are not statutory requirements for the purposes of considering a development application.

The DCP relating to the land surrounding the Airport site is the Bankstown DCP (BDCP) 2015.

A Development Guidelines document has been developed by BAL for the Airport site. The Bankstown Airport Development Guidelines serves to guide the implementation of provisions set out in the Master Plan 2019. More information on the Bankstown Airport Development Guidelines is provided in section 8.5.

Table 8.2: Objectives of Zones Surrounding Bankstown Airport

Zone	Zone objectives
RE1 Public Recreation	Enable land to be used for public open space or recreational purposes, provide a range of recreational settings and activities and compatible land uses and to protect and enhance the natural environment for recreational purposes.
RE2 Private recreation	Enable land to be used for private open space or recreational purposes, provide a range of recreational settings and activities and compatible land uses and protect and enhance the natural environment for recreational purposes.
IN1 General Industrial	Provide a wide range of industrial and warehouse land uses, encourage employment opportunities, minimise any adverse effect of industry on other land uses and support and protect industrial land for industrial uses.
IN2 Light Industrial	Provide a wide range of light industrial, warehouse and related land uses, encourage employment opportunities, support the viability of centres, minimise any adverse effect of industry on other land uses, enable other land uses that provide facilities or services to meet the day-to-day needs of workers in the area and support and protect industrial land for industrial uses.
R2 Low Density Residential	Provide for the housing needs of the community within a low density residential environment, enable other land uses that provide facilities or services to meet the day to day needs of residents, allow for certain non-residential development that is compatible with residential uses, allow for housing that has regard to local amenity and require landscape as a key characteristic.
B1 Neighbourhood Centre	Provide a range of small-scale retail, business and community uses that serve the needs of people who live or work in the surrounding neighbourhood and provide for certain residential uses that are compatible with the mix of uses in neighbourhood centres.
B2 Local Centre	Provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area, encourage employment opportunities in accessible locations, maximise public transport patronage and encourage walking and cycling and provide for certain residential uses that are compatible with the mix of uses in local centres.

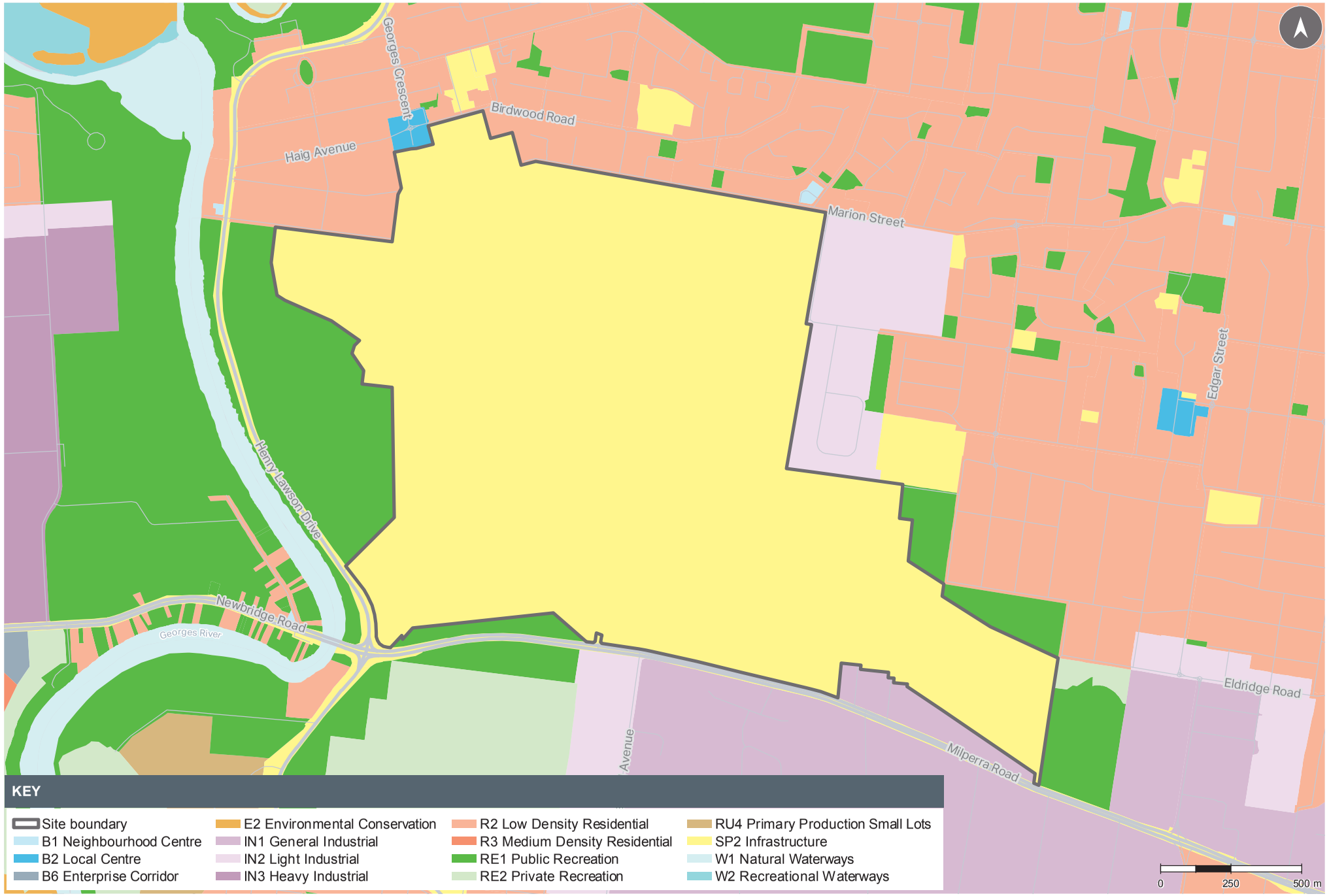


Figure 8.3: Zoning Map (Source: BLEP 2015)

8.4 LAND USE PLAN

8.4.1 INTRODUCTION

The Master Plan establishes four main land use zones (refer Figure 8.1):

- Airport Business Zone
- Aviation Zone
- Commercial Zone
- Industrial Zone.

The Master Plan contains Objectives, Desired Future Character statements and Permitted and Sensitive/ Prohibited uses for each zone. The Objectives, Desired Future Character statements and Permitted Land Uses, collectively, provide general guidance as to the forms of development envisaged within each zone.

The concept of creating a number of distinct 'zones' at the Airport, with specified land uses within each, aligns directly with the zoning system in place under the EP&A Act and demonstrated in the BLEP 2015. Under the EP&A Act (and in the BLEP 2015), zones are used to locate compatible uses together through specifying how the land within the zone can be used. These establish the land uses that are permissible (with or without consent) or prohibited in a particular location in the form of a land use table. Objectives are also set out for each zone to further guide the types of desired development.

Structure Plans have been developed for the Airport Business Zone and Commercial Zone to provide an overview of the envisioned activities within these two zones (refer Figure 8.7 and Figure 8.8)

Further, the Airport Business Zone and Commercial Zone are divided into precincts. The purpose of the precincts is to provide a further level of guidance for specific areas within these two zones. The Objectives and Desired Future Character statements outlined for these two zones provide an overarching guidance framework for the precincts, while the precinct level Objectives and Desired Future Character statements provide more specific guidance based on the unique attributes of each precinct. 'Structure Plans' are provided for these two zones to convey the vision for future development within each precinct.

This concept of providing an extra level of detail for some zones through individual precincts aligns with the BDCP 2015. BDCP 2015 identifies 'precincts' within a number of key areas for which it provides specific objectives, as well as development controls.

This Master Plan contains definitions of land use types, which are detailed in Appendix D. Definitions align with the Standard LEP Template, where practical. However, not all Standard LEP Template definitions are suitable, and other airport-specific definitions have been included.

8.4.2 CHANGES TO THE LAND USE PLAN

The Land Use Plan features a number of updates to the 2014 Master Plan. These changes ensure the Airport meets evolving local and regional area needs and provides a greater level of detail and visibility around the planned future for the Airport.

Key influences on such updates include strategic directions set out by the New South Wales Government for the Bankstown Airport/Milperra Industrial Precinct, the Airport's proximity to the new Moorebank Intermodal Terminal, arterial roads and the new and expanding aviation opportunities, such as emergency services and pilot training. Another key area of influence is the future development of a new Western Sydney Airport at Badgerys Creek.

Key changes to the Land Use Plan from the 2014 Master Plan are summarised as follows:

- **Reconfiguration and re-labelling of zones:** Land use zones have been revised to reflect the new Master Plan vision. The names of zones have also been amended to reflect the nature of activities (current and envisaged).
- **Precinct establishment within certain zones:** Precincts have been established within two zones to provide a greater level of detail and planning guidance for particular areas.
- **Simplified land uses and related definitions:** A number of land uses are considered as 'ancillary' to the primary land uses (e.g. civil works, flood mitigation works and car parking). Accordingly, these ancillary land uses have been removed from land use definitions included in the 2014 Master Plan. In addition, some land uses have been consolidated to simplify groupings. For example 'aircraft and airport maintenance and storage facilities', 'aircraft engine testing areas' and 'airport terminal and support facilities' are now provided for under the one land use – 'airport-related support industries'
- **Updated development decision-making process:** The development decision-making process has been updated to better align with the NSW and local government planning assessment processes. Detailed guidance on the development decision-making process has also been provided to create greater transparency.

8.4.3 DEVELOPMENT DECISION-MAKING PROCESS

Figure 8.5 provides an overview of the development decision-making process at the Airport.

Developments are classified as Permitted, Merit, Sensitive or Prohibited, depending on the proposed land use. Descriptions of each of these classifications are provided in Figure 8.4. Land uses that apply to each of these categories within each zone are listed in each zone.

PERMITTED

Land uses that have been determined to be permissible as they align with the objectives of a particular zone. These land uses are permitted subject to approval.

MERIT

Land uses that are not classified as Permitted, Sensitive or Prohibited can be assessed based on merit. These land uses are subject to approval.

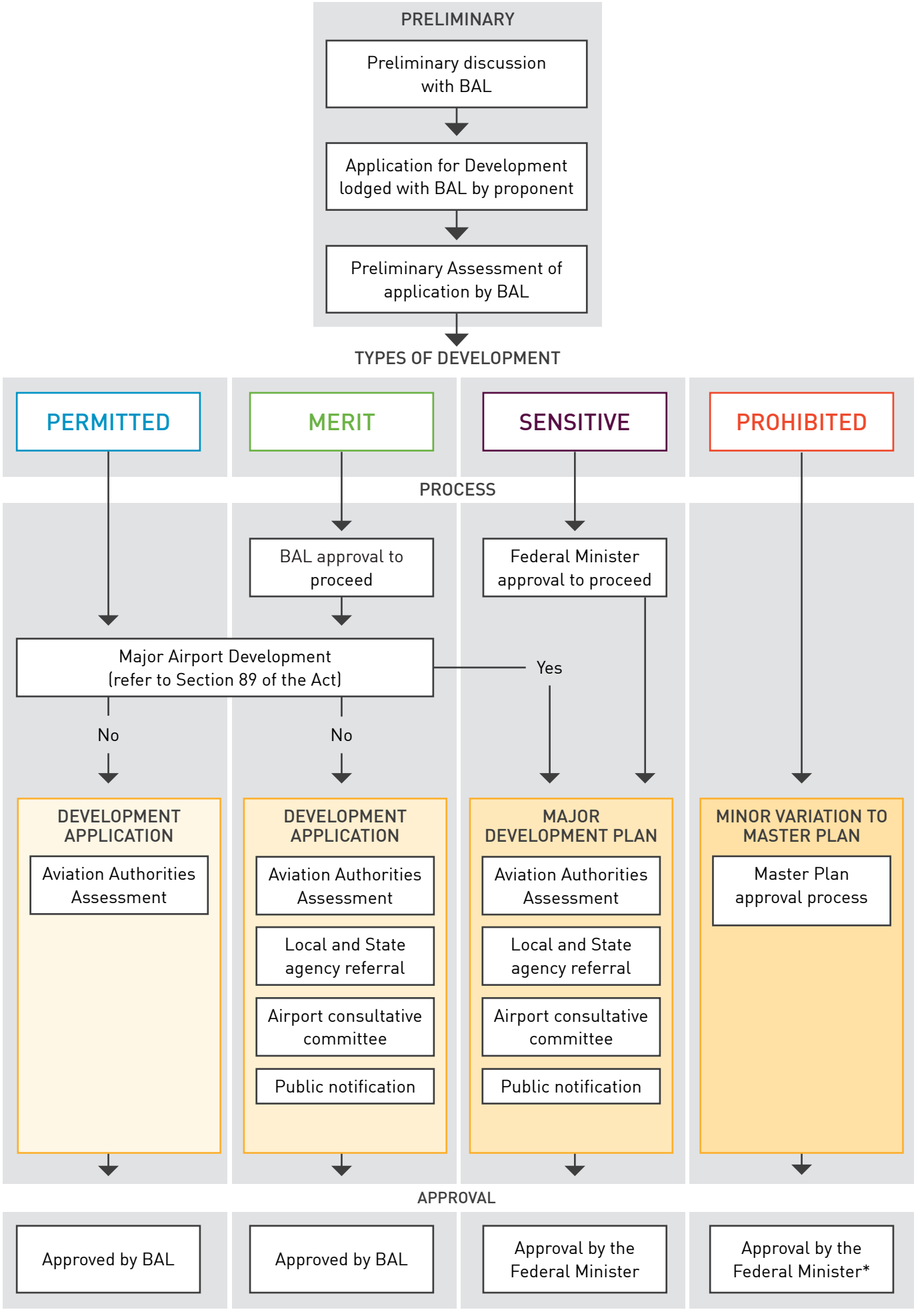
SENSITIVE

Land uses that are deemed sensitive (pursuant to the *Airports Act 1996*). These uses are prohibited except in exceptional circumstances and require approval from the Minister (refer section 8.2.2).

PROHIBITED

Land uses that are not permissible within a given zone as they are not aligned with the zone objectives. A prohibited land use can only be approved by obtaining a variation to the Master Plan.

Figure 8.4: Development Classification



**Subsequent to the approval of a minor variation to the Master Plan, the proposed development will then be assessed in accordance with the relevant type of development (Permitted, Merit or Sensitive).*

Figure 8.5: Development Approval Decision-Making Process

8.4.4 BAL DEVELOPMENT AND BUILDING ACTIVITY APPLICATION PROCESS

All development on Airport land is subject to building approval – consistent with the provisions in the *Airports (Building Control) Regulations 1996*, a process similar to the building approval process under NSW legislation. An outline of the development and building approvals application process at the Airport is provided at Figure 8.6.



8.4.5 GENERAL LAND USE DEVELOPMENT OBJECTIVES

The overarching general land use development objectives for the Airport are to:

- Ensure that development promotes the role of the Airport as a –
  - NSW principal general aviation, aviation training and aviation emergency services airport
  - Key element of transport infrastructure for NSW, accommodating a range of services and facilities necessary for the safe, convenient, and efficient operation of aviation activities
  - Major business and commercial enterprise, providing a transport hub, aviation operations and aviation training, freight and logistic facilities, industrial, commercial and retail development
- Ensure development is designed to facilitate safe and efficient aviation operations
- Foster and sustain a high level of innovation, economic activity and create significant employment opportunities
- Encourage creative contemporary design that aims to develop the most effective and efficient use of the site
- Promote sustainable design principles through waste minimisation, promotion of energy efficient buildings, and enhancing the efficiency and use of water resources
- Maintain a high standard of landscaping throughout the Airport that integrates individual sites and street landscaping, focusing on native and water-wise species, while minimising wildlife attraction
- Protect and conserve heritage items, and ensuring the Airport's ongoing operational and development requirements
- Undertake development in accordance with the zone and precinct framework
- General duty to avoid polluting.

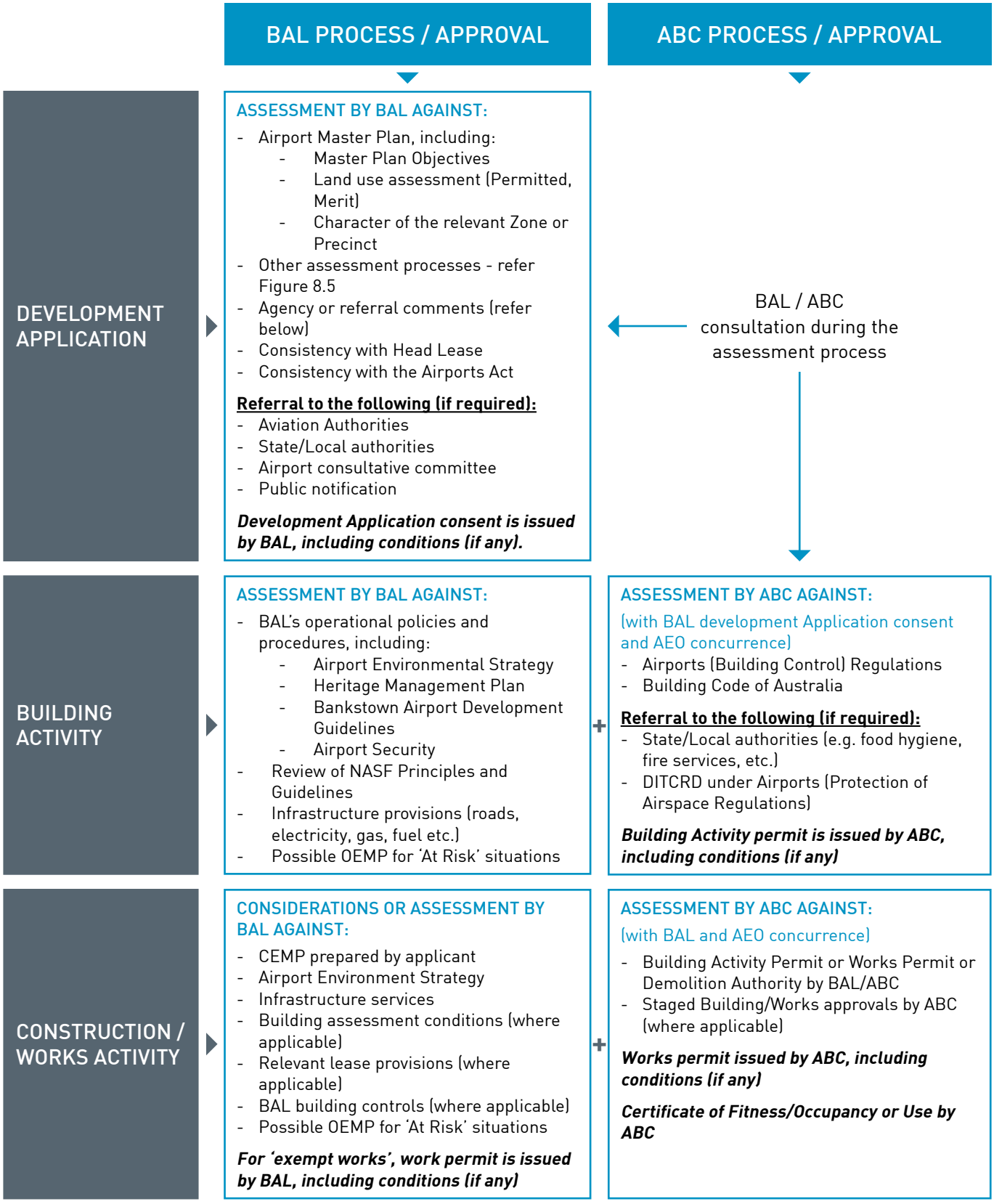


Figure 8.6: Development and Building Activity Application Process

8.4.6 AIRPORT BUSINESS ZONE

This zone is located to the north of the Airport site. It is the historical 'heart' of the Airport and includes the main terminal and aviation area (and Chevron and airport-related businesses), and neighbourhood facilities such as Georges River Grammar School and retail facilities.



Objectives

The objectives of the Airport Business Zone are to:

- Provide primarily for the accommodation of aviation operations and aviation-related activities
- Provide neighbourhood uses in areas of the zone that interface with land surrounding the Airport
- Provide for commercial and business uses
- Enhance the amenity of the zone by improving built form and landscaping, and creating a gateway and boulevard to the zone along Airport Avenue
- Ensure safe and convenient pedestrian access and car parking throughout the zone.

Desired Future Character

The Airport Business Zone will continue to develop as the 'heart' of activities at the Airport, providing the interface between airside and landside development, accommodating aviation operations, and related services, commercial and business activities.

This zone will include buffer activities between the aviation/commercial development and the residential areas to the north of the Airport.

Development in the zone will consist of a high level of amenity and quality built form.

AVIATION BUSINESS AND COMMERCIAL PRECINCT

Objectives
The objectives of the Aviation Business and Commercial Precinct are to:

- Provide an area accommodating aviation operations and related activities (including aviation attractions), commercial and business uses
- Provide an area accommodating aviation-related training and education facilities and associated infrastructure, including accommodation for students
- Recognise the Airport Chevron as the historical and critical aviation operational area for the Airport
- Deliver an integrated landscape theme throughout the precinct.

Desired Future Character
The Aviation Business and Commercial Precinct will facilitate aviation-related development, training activities and aviation-related attractions.

It is envisaged that this area will largely accommodate a range of aviation-related development, including freight and distribution, office/warehousing, training and education, car parking/vehicle storage and other storage facilities, and uses that would benefit from an airport location.

Workers and visitors to this precinct will enjoy a high level of amenity and quality built form, with a diverse range of functions.

NEIGHBOURHOOD PRECINCT

Objectives
The objectives of the Neighbourhood Precinct are to:

- Provide an area accommodating neighbourhood uses, including education, retail and entertainment services, particularly in locations that interface with the surrounding community
- Provide for a range of commercial, light industry and aviation-related activities
- Deliver an integrated landscape theme throughout the precinct.

Desired Future Character
The Neighbourhood Precinct will develop, as a 'quality built environment', a buffer zone between the aviation operations in the zone and the adjacent residential areas of Georges Hall and the wider Canterbury-Bankstown community.

This area will provide a diverse mix of commercial, light industry and aviation-related support activities, including aviation-related attractions that are inviting to the community. Development in the precinct will have a high level of amenity for residents, workers, students and visitors.



Figure 8.7: Airport Business Zone Structure Plan

Table 8.3: Land Use Table: Airport Business Zone

Land Use Zone: Airport Business Zone	
1. PERMITTED	**AVIATION** - Accommodation for students studying at aviation educational facilities - Airport-related support industries - Aviation educational facilities - Fixed base operations - Runway related activities/facilities **COMMERCIAL** - Advertising structures - Business premises - Office premises - Function centre - Research and development facilities - Retail premises - Service stations - Specialised retail premises (in Neighbourhood Precinct only) - Temporary uses and structures **INDUSTRIAL** - Depots - Industrial training facilities - Light industries - Vehicle storage - Warehouse or distribution centres **INFRASTRUCTURE** - Earthworks or engineering works - Public utility undertaking - Renewable energy generation facilities - Roads - Communication facilities (non-aviation) **COMMUNITY** - Child care facilities - Clubs - Community facilities - Health services facilities - Recreation facilities **OTHER** - Ancillary* - Environmental protection works
2. MERIT	Any other development not listed in items 1, 3 or 4
3. SENSITIVE	Any item listed in *Section 71A of the Airports Act 1996*
4. PROHIBITED	NA

**Ancillary uses relate to subordinate uses to Permitted Uses included in the respective zone. Ancillary uses are defined in Appendix C.*

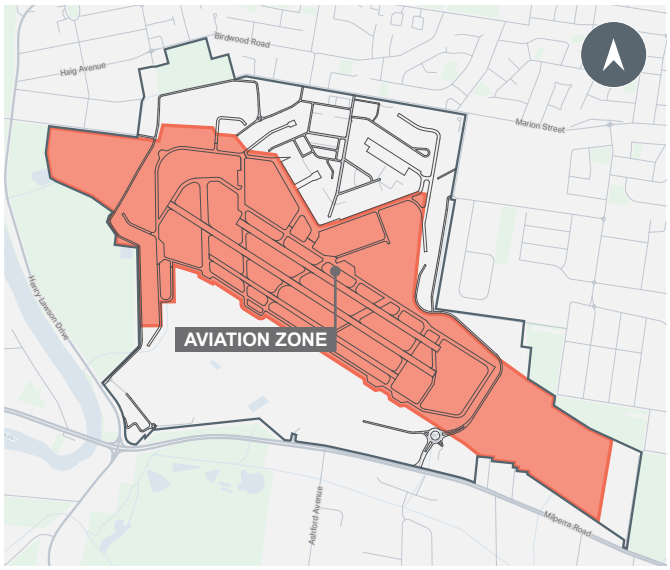
8.4.7 AVIATION ZONE

The Aviation Zone is located in the central section of the Airport. It is the location for runways, taxiways, aircraft movement and parking areas, along with airside and some airside/landside tenancy buildings.

This zone, together with the Airport Business Zone, contains the principal aviation activities for the Airport.

The Aviation Zone includes two areas at the eastern and western ends of the runways that have environmentally sensitive attributes. Refer to section 12.4.2 for further details.

Public Safety Areas are included within this zone.



Objectives

The objectives of the Aviation Zone are to:

- Provide an area accommodating:
  - Safe aircraft landing, take-off and taxiing operations for fixed-wing and rotary aircraft
  - Aircraft navigation aids, radar and communications equipment, including air traffic control
  - Aviation rescue, emergency services and firefighting and meteorological services
  - Aviation-related support industry
  - Airport terminals.
- Provide safe and efficient access and operation of all movement, areas recognising aircraft types, numbers of aircraft movements and surrounding development infrastructure
- Provide a safe and enhanced environment, provided through:
  - Protection of aircraft operations
  - Controlled access and secure operational areas and movement
  - Management of environmentally significant areas to the north-west and south-east of the runway, including minimising bird attraction.

Desired Future Character

The Aviation Zone is an area of the Airport which will continue to develop for the operation and movement of aircraft and associated activities.

Development within the zone will continue to focus on the aviation needs of the Airport, with ancillary and related support facilities developed to enhance Airport operation. This will involve continued maintenance and improvement of aviation infrastructure.

Table 8.4: Land Use Table: Aviation Zone

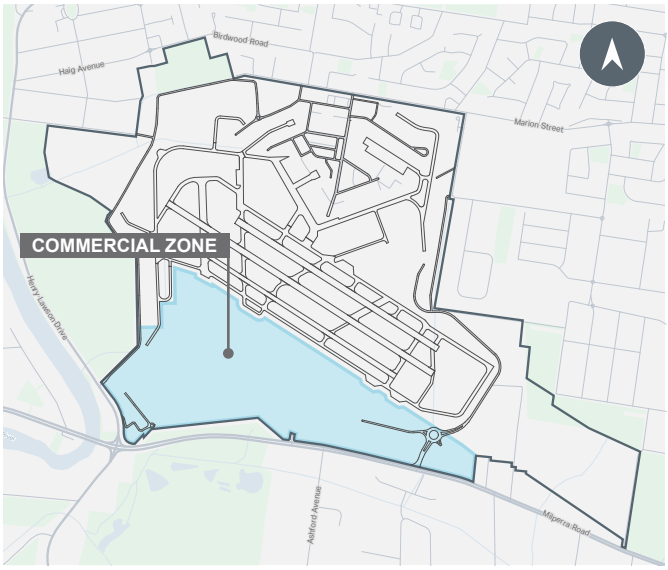
Land Use Zone: Aviation Zone	
1. PERMITTED	**AVIATION** - Airport-related support industries - Aviation educational facilities - Fixed base operations - Runway related activities/facilities **COMMERCIAL** - Advertising structures - Business premises - Temporary uses and structures - Research and development facilities **INDUSTRIAL** - Depots - Vehicle storage **INFRASTRUCTURE** - Earthworks or engineering works - Public utility undertaking - Renewable energy generation facilities - Roads **COMMUNITY** - Emergency services facilities **OTHER** - Ancillary* - Environmental protection works
2. MERIT	Any other development not listed in items 1, 3 or 4
3. SENSITIVE	Any item listed in *Section 71A of the Airports Act 1996*
4. PROHIBITED	- Residential dwellings - Community care facilities - Pre-school, primary, secondary, tertiary or other educational institutions - Hospitals

**Ancillary uses relate to subordinate uses to Permitted Uses included in the respective zone. Ancillary uses are defined in Appendix C.*

8.4.8 COMMERCIAL ZONE

The Commercial Zone is located south of the airfield.

The zone is in close proximity to the M5 motorway, the M7 motorway, Moorebank intermodal and the Milperra industrial area. This proximity provides opportunity for the zone to develop as a major hub for transport logistics and distribution facilities, warehousing and industrial/commercial development, along with retail facilities at the 'gateway'/entrances to the Zone.



Objectives

The objectives of the Commercial Zone are to:

- Provide an area primarily accommodating a range of transport logistics and distribution facilities, commercial, industrial, warehousing and aviation-related support industries in the form of a major logistics hub
- Encourage retail development in Gateway Precincts, forming gateway entry statements to the Commercial Zone
- Ensure safe and convenient pedestrian access and car parking throughout the zone.

Desired Future Character

The Commercial Zone will provide an environment that promotes employment and economic growth at the Airport via a number of commercial and retail uses that will benefit from the proximity to arterial roads and motorways. The zone will support office and warehouse facilities that will engage with the surrounding Milperra and Condell Park industrial precincts, while providing a high level of amenity and quality built form for users and their visitors in this precinct, including retail-based amenity.

INDUSTRIAL WAREHOUSE AND COMMERCIAL PRECINCT

Objectives

The objectives for the Industrial Warehouse and Commercial Precinct are to:

- Accommodate a range of transport logistics and distribution facilities, commercial, industrial, warehousing and aviation-related support industries in the form of a major logistics hub
- Provide an area accommodating development that caters for a range of innovative and technology-based industries and activities
- Enable development that incorporates high-quality design, materials and finishes that enhance the visual amenity of the precinct
- Ensure that landscaping softens the impact of development and enhances the character of the area.

Desired Future Character

The Industrial Warehouse and Commercial Precinct will support a diverse range of industrial development with a focus on warehousing, transport, logistics and manufacturing (light industry). The precinct will continue to support industrial land uses that engage with the neighbouring industrial land uses to the south and east. As renewal occurs over time, employees and visitors will enjoy a high level of amenity and quality built form in this precinct.

GATEWAY PRECINCTS

Objectives

The objectives for the Gateway Precincts are to:

- Encourage retail development forming key 'entry statements' to the Commercial Zone
- Provide a variety of different sized retail and accommodation spaces
- Ensure that the location, scale and bulk of development afford high levels of visual amenity and enhance the character and setting of the area.

Desired Future Character

The Gateway Precincts will create a compatible and complimentary interface with the adjacent Milperra industrial area and a transitionary buffer to aviation uses within the Airport and to Milperra Road. The Gateway Precincts will support a range of retail, industrial and other commercial uses that align with their location adjoining major arterial roads, including the significant exposure to Milperra Road. These precincts are intended to form 'entry statements' to the Airport from the south.



Figure 8.8: Commercial Zone Structure Plan

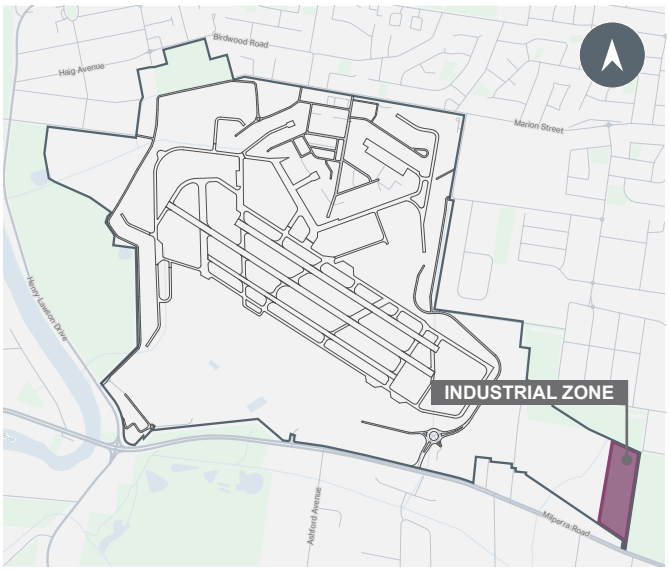
Table 8.5: Land Use Table: Commercial Zone

Land Use Zone: Commercial Zone	
1. PERMITTED	**AVIATION** - Airport-related support industry - Runway related activities/facilities **COMMERCIAL** - Advertising structures - Business premises (in Gateway Precincts only) - Retail premises (in Gateway Precincts only) - Health services facilities (in Gateway Precincts only) - Hotel or motel accommodation (in Gateway Precincts only) - Research and development facilities - Service stations (in Gateway Precincts only) - Specialised retail premises (in Gateway Precincts only) - Temporary uses and structures **INDUSTRIAL** - Depots - General industries - Industrial retail outlets (in Gateway Precincts only) - Industrial training facilities - Light industries - Vehicle storage - Warehouse or distribution centres **INFRASTRUCTURE** - Earthworks or engineering works - Communications facilities (non-aviation) - Public utility undertaking - Renewable energy generation facilities - Roads **COMMUNITY** - Recreation facilities (in Gateway Precincts only) - Child care facilities (in Gateway Precincts only) **OTHER** - Ancillary* - Environmental protection works
2. MERIT	Any other development not listed in items 1, 3 or 4
3. SENSITIVE	Any item listed in *Section 71A of the Airports Act 1996*
4. PROHIBITED	Residential dwellings

**Ancillary uses relate to subordinate uses to Permitted Uses included in the respective zone. Ancillary uses are defined in Appendix C.*

8.4.9 INDUSTRIAL ZONE

The Industrial Zone is located at the eastern edge of the Airport site and is accessed by Steele Street off Milperra Road. This zone is constrained by height limitations and is well suited to industrial uses given the surrounding industrial uses, including the Milperra Industrial Area, and convenient access to Milperra Road.



Objectives

The objectives of the Industrial Zone are to:

- Provide an area primarily operating as a centre for industrial uses, such as warehousing, transport, logistics and manufacturing
- Encourage an integrated landscape theme throughout the zone

Desired Future Character

The Industrial Zone will support a diverse range of industrial development with a focus on warehousing, transport, logistics, manufacturing and storage. The zone will continue to support industrial land uses that engage with the neighbouring industrial land uses to the south and east.

Any development within the Industrial Zone must take into consideration that much of the Zone is contained within a Public Safety Area at the end of the runways. As such, industrial and commercial uses involving large numbers of workers or customers, and the storage of flammable goods must be avoided.

Table 8.6: Land Use Table: Industrial Zone

Land Use Zone: Industrial Zone	
1. PERMITTED	**AVIATION** - Airport-related support industry - Runway related activities/facilities **COMMERCIAL** - Research and development facilities - Temporary uses and structures **INDUSTRIAL** - Depots - General industries - Industrial retail outlet - Industrial training facilities - Light industries - Vehicle storage - Warehouse, storage and/or distribution centres **INFRASTRUCTURE** - Earthworks or engineering works - Public utility undertaking - Renewable energy generation facilities - Roads **OTHER** - Ancillary* - Environmental protection works
2. MERIT	Any other development not listed in items 1, 3 or 4
3. SENSITIVE	Any item listed in *Section 71A of the Airports Act 1996*
4. PROHIBITED	Residential dwellings

**Ancillary uses relate to subordinate uses to Permitted Uses included in the respective zone. Ancillary uses are defined in Appendices C.*

8.5 OTHER PLANNING CONSIDERATIONS

8.5.1 DEVELOPMENT GUIDELINES

A Development Guidelines document has been prepared for the Airport to guide the implementation of the land use planning in the Master Plan. The Bankstown Airport Development Guidelines sets out detailed design objectives and development controls for the Airport.

The Bankstown Airport Development Guidelines is directly aligned with the NSW and Local Government planning systems. The Bankstown Airport Development Guidelines performs the role of guiding Master Plan 2019 implementation in the same way the Bankstown DCP 2015 does for the Bankstown LEP 2015.

The Bankstown Airport Development Guidelines has been developed with reference to the Bankstown DCP 2015, drawing on a similar format and language to facilitate consistency and implementation.

The Bankstown Airport Development Guidelines will be reviewed and updated on a regular basis to respond to evolving design, technological and market changes, and airport operations.

The Development Guidelines apply to the whole of the Airport and provides guidance to proponents of development on specific design elements, including:

- Airspace planning considerations
- Land use
- Built form
- Car parking, access and circulation
- Environmentally sustainable design
- Signage, fencing and lighting
- Waste management, storage and emissions
- Noise and acoustics
- Landscaping
- Services and utilities
- Heritage.



8.5.2 PRE-EXISTING LAND USES

Where there are inconsistencies between existing land uses and the development permitted under the zones within this Master Plan, current land uses may continue to exist with no further approvals.

The existing land use can be expanded or changed subject to consent being obtained by the Airport Lessee Company. It can be changed to a land use that is not within the permitted uses for that zone where the Airport Lessee Company is satisfied that the development is a 'Compatible Land Use'. An alternative use will be considered a 'Compatible Land Use' if the use:

- Is consistent with the provisions of the 2019 Bankstown Airport Master Plan
- Is consistent with the objectives of the zone in which it will be located
- Will not have an adverse effect on the land within the locality.

8.5.3 SURROUNDING DEVELOPMENT

BAL will continue to monitor development surrounding the Airport, including the preparation of strategic plans, planning policies and master plans affecting ongoing Airport operations.

Specific issues for consideration relate to the location of sensitive land uses, along with height and scale of development, which may negatively impact on-airport operations. Further details relating to Airport safeguarding are included in Chapter 6.





9.0

DEVELOPMENT PROGRAM



9.1 OVERVIEW

TO ACHIEVE THE VISION FOR BANKSTOWN AIRPORT AS A DYNAMIC INTEGRATED AVIATION AND COMMERCIAL CENTRE FOR SYDNEY, BAL HAS PREPARED THE FOLLOWING DEVELOPMENT PROGRAM TO GROW AVIATION OPERATIONS AND DELIVER PROPERTY DEVELOPMENT OPPORTUNITIES.



Development at the Airport will focus on:

- Creating employment and contributing to the economy of the Canterbury-Bankstown Region and the NSW economy
- Complementing and enhancing future Airport operations
- Supporting the delivery of a wide range of services and facilities for Airport users
- Improving accessibility to the Airport.

This chapter has been prepared to guide future Airport development.

A number of potential future key developments have been identified in the Master Plan. These are within the five and 20 year planning horizons for aviation and non-aviation development and infrastructure. Changes in market conditions may impact on aviation and property development, which in turn may influence infrastructure timing and delivery.

The implementation of this Master Plan will significantly increase the level of employment and economic activity generated by the Airport, creating jobs at a local, regional and State level.

4,400+
FTE local employees

160+
Businesses on the Airport

Almost $1 Billion
NSW economy

9.1.1 MASTER PLAN ECONOMIC IMPACT

The implementation of this Master Plan will significantly increase the level of employment and economic activity generated by the Airport.

Economic modelling commissioned by BAL indicates that by 2024 the Airport could contribute $1.64 billion annually to the NSW economy (Hudson Howells, 2018). The current economic impact of the Airport and its potential future growth following the implementation of this Master Plan is provided in Table 9.1.

Table 9.1: Economic Contribution of Bankstown Airport Operations (Source: Hudson Howell 2018)

Economic Contribution ($m)	Current (2017)	2024	2039
Canterbury-Bankstown Region	$807	$1,169	$1,264
South West Sydney	$1,042	$1,481	$1,264
New South Wales	$1,157	$1,642	$1,762

9.1.2 EMPLOYMENT IMPACT

The Airport currently provides direct employment for more than 3,000 people. By 2024, on-Airport employment is forecast to grow by more than 1,700 jobs, to over 4,700 jobs.

The forecast employment growth from activities at the Airport is provided in Table 9.2.

Table 9.2: Direct Employment at Bankstown Airport (Source: Hudson Howell)

Direct Employment	Current (2017)	2024
Direct Employment in Air transport activities	1,897	2,120
Direct Employment in other activities	1,155	2,582
Total	**3,052**	**4,702**

This Master Plan will deliver a wider employment benefit within NSW – creating nearly 5,000 State-wide jobs over the period 2019-2039, as shown in Table 9.3.

9.1.3 CHANGES IN AIRPORT ACTIVITY

AVIATION ACTIVITY

Aviation activity will continue to generate revenue for the Airport over the period of this Master Plan. Without investment in existing and new facilities and infrastructure, growth in air traffic will be significantly constrained. Under current conditions, the number of aircraft movements is forecast to grow by 39.0 per cent over the period 2017-2039.

Pilot training schools are a major user of the Airport and generate economic activity from both the training school activities and living expenses incurred by students. Global aviation industry forecasts indicate the Asia-Pacific Region will generate the largest proportion of demand for new pilots and technicians over the period 2017-2036. According to the *Boeing Pilot and Technician Outlook 2017* forecasts that 253,000 new pilots and 256,000 new technicians will be required to meet demand in the Asia-Pacific Region.

NON-AVIATION ACTIVITY

Non-aviation activities will present higher levels of growth following the proposed development of a significant new Commercial Zone in the south-western area of the Airport. It is anticipated that this site will attract significant investment in industrial, warehouse, commercial and retail development.

Table 9.3: Contribution to Regional Employment to 2039 (Source: Hudson Howell 2018)

Contribution to Regional Employment to 2039	2019	2024	2039
Contribution to employment in the Canterbury-Bankstown Region (FTE)	5,683	7,931	8,503
Contribution to employment in the South West Sydney Region (FTE)	7,042	9,726	10,413
Contribution to employment in the New South Wales (FTE)	7,712	10,708	11,403

9.2 PLANNING HORIZON – FIVE YEARS

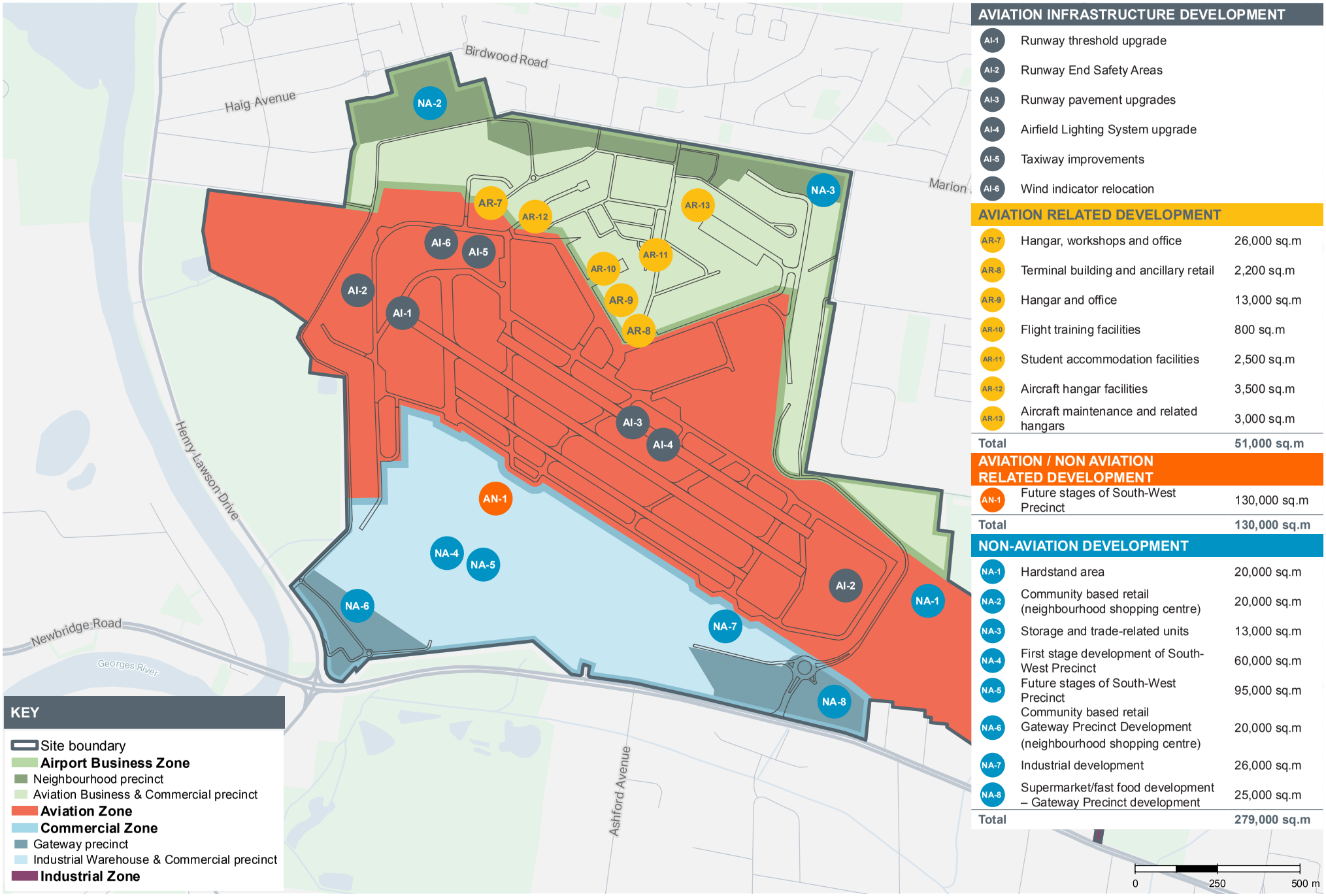
Within the five year planning horizon, a number of possible development projects have been identified at the Airport. These are categorised as follows:

- Aviation infrastructure development (Table 9.4)
- Aviation and Non-aviation related development (Table 9.5)
- Road and transport improvements (Table 9.6)
- Flooding and stormwater management (Table 9.7).

For aviation and non-aviation development projects, these are indicatively spatially referenced on Figure 9.1, with relevant tables indicating the land use zone in which the development is situated.

The likely triggers for projects are also identified in the respective tables. This is based on Airport operational requirements (as detailed in Chapter 7.0), business viability and economic constraints, as well as development approval requirements.

Consistent with the planning process and procedures established in Chapter 8.0, these and other developments may be considered within each Zone.



AVIATION INFRASTRUCTURE DEVELOPMENT		
AI-1	Runway threshold upgrade	
AI-2	Runway End Safety Areas	
AI-3	Runway pavement upgrades	
AI-4	Airfield Lighting System upgrade	
AI-5	Taxiway improvements	
AI-6	Wind indicator relocation	
AVIATION RELATED DEVELOPMENT		
AR-7	Hangar, workshops and office	26,000 sq.m
AR-8	Terminal building and ancillary retail	2,200 sq.m
AR-9	Hangar and office	13,000 sq.m
AR-10	Flight training facilities	800 sq.m
AR-11	Student accommodation facilities	2,500 sq.m
AR-12	Aircraft hangar facilities	3,500 sq.m
AR-13	Aircraft maintenance and related hangars	3,000 sq.m
Total		51,000 sq.m
AVIATION / NON AVIATION RELATED DEVELOPMENT		
AN-1	Future stages of South-West Precinct	130,000 sq.m
Total		130,000 sq.m
NON-AVIATION DEVELOPMENT		
NA-1	Hardstand area	20,000 sq.m
NA-2	Community based retail (neighbourhood shopping centre)	20,000 sq.m
NA-3	Storage and trade-related units	13,000 sq.m
NA-4	First stage development of South-West Precinct	60,000 sq.m
NA-5	Future stages of South-West Precinct	95,000 sq.m
NA-6	Community based retail Gateway Precinct Development (neighbourhood shopping centre)	20,000 sq.m
NA-7	Industrial development	26,000 sq.m
NA-8	Supermarket/fast food development – Gateway Precinct development	25,000 sq.m
Total		279,000 sq.m

Figure 9.1: Five year Development Program

Table 9.4: Five year Development Program – Aviation Infrastructure Development

Zone	Map Ref.	Development	Trigger/Comment
AVIATION ZONE	AI-1	**Runway threshold upgrade** - Realignment of the threshold on the Centre Runway (Runway 11C)	Subject to airport safety requirements
	AI-2	**Runway End Safety Areas** - Establish Runway End Safety Areas (RESA) to both ends of the Centre Runway – (Runway 11C/29C)	Subject to airport safety requirements
	AI-3	**Runway pavement upgrades**	Dependant on outcome of pavement inspection
	AI-4	**Airfield Lighting System upgrade** - Upgrade of the Airfield Lighting System associated with the Centre Runway (Runway 11C/29C), including lighting upgrades to some taxiways and the Airport Lighting Room - Decommissioning of the lights on the Northern Runway (Runway 11L/29R)	Subject to airport safety requirements
	AI-5	**Taxiway improvements** - Detailed description of taxiway improvements included in Section 7.3	Subject to airport safety requirements, aviation developments and aviation improvements
	AI-6	**Wind indicator relocation** - Relocation of illuminated wind indicator in the north-west sector of the Airport	NSW Police Air Wing facility development (under construction) and discussions with Airservices

Table 9.5: Five year Development Program – Aviation and Non-Aviation Related Development

Zone	Map Ref.	Development	Proposed Area Development Program *	Trigger/Comment
AVIATION ZONE	AR-7	**Hangar, workshops and office** - Consolidation and upgrade of existing NSW Police facilities for NSW Police Air Wing	26,000 sqm	Approved development (under construction)
AIRPORT BUSINESS ZONE	AR-8	**Terminal building** - Existing terminal building refurbishment, including new ancillary retail facilities	2,200 sqm	Subject to approvals and commercial demand
	AR-9	**Hangar and office** - Refurbishment and consolidation of hangars and new office	13,000 sqm	Subject to approvals and commercial demand
	AR-10	**Flight training facilities** - Up to 90 additional students	800 sqm	Subject to approvals and commercial demand
	AR-11	**Student accommodation facilities**	2,500 sqm	Subject to approvals and commercial demand
	AR-12	**Aircraft hangar facilities**	3,500 sqm	Subject to approvals and commercial demand
	AR-13	**Aircraft maintenance and related hangars**	3,000 sqm	Subject to approvals and commercial demand
AVIATION ZONE	NA-1	**Hardstand area** - 20,000 square metres hardstand areas	20,000 sqm	Under construction
AIRPORT BUSINESS ZONE	NA-2	**Community based retail (neighbourhood shopping centre)** - Supermarket, entertainment, club	20,000 sqm	Subject to approvals and commercial demand
	NA-3	**Storage and trade related units**	13,000 sqm	Approved development
COMMERCIAL ZONE	NA-4	**First stage development of South-West Precinct** - Site works - Warehouse development	60,000 sqm	Subject to MDP approval and commercial demand
	NA-5	**Future stages of South-West Precinct** - Industrial/warehouse development	95,000 sqm	Subject to approvals and commercial demand
	NA-6	**Community based retail (neighbourhood shopping centre)** - Bulky Goods Retail - Retail - Food - Hotel	20,000 sqm	Subject to approvals and commercial demand
	NA-7	**Industrial development**	**26,000 sqm**	Approved development
	NA-8	**Supermarket/fast food development – Gateway Precinct development** - Supermarket - Fast Food	**25,000 sqm**	Subject to approvals and commercial demand

* Area includes the building floor area, Lot areas including aprons

Table 9.6 identifies road and transport improvements for the five year planning horizon, addressing both on-and off-Airport projects. BAL will work closely with Roads and Maritime Services (RMS) and Canterbury-Bankstown Council in relation to timely improvements to off-airport road and transport improvement projects.

Table 9.7 relates to flooding and stormwater management, addressing airport-wide flood management. It has been developed in collaboration with Canterbury-Bankstown Council.

Table 9.6: Five year Development Program – Road and Transport Improvements

Zone	Development	Trigger/Comment
COMMERCIAL ZONE	New internal collector road - Connecting Milperra Road/Murray Jones Drive intersection and Tower Road - To provide access to the proposed South-West Precinct commercial/ industrial estate	Under construction
EXTERNAL TO AIRPORT	Intersection upgrades and widening of roads surrounding Bankstown Airport Detailed description of potential road improvements included in Section 9.5. Key projects identified include: - Additional intersection capacity along Milperra Road (into Bankstown Airport) - Henry Lawson Drive between Milperra Road and Haig Avenue - duplication to two lanes in each direction	Subject to approvals and commercial demand
AIRPORT-WIDE	Improved wayfinding signage directing traffic into and around Bankstown Airport	Approved development

Table 9.7: Five year Development Program – Flooding and Stormwater Management

Zone	Development	Trigger/Comment
AIRPORT-WIDE	Site-wide Flooding and Stormwater Management Strategy (developed in collaboration with Canterbury-Bankstown Council) - Main Stream (Georges River) Water Quantity Management – Floodplain Storage - Stormwater Quantity Management – Local Catchment Runoff - Stormwater Quality Management	Implementation though SW MDP, building approvals and ongoing site management improvements

9.3 PLANNING HORIZON – FIVE TO 20 YEARS

Aviation development and road and transport improvements envisaged within this Master Plan's 20 year planning horizon is outlined in Tables 9.8 and 9.9.

Aviation infrastructure development focuses on the potential future extension of the Centre Runway (Runway 11C/29C), as identified in Chapter 7.0.

A key aspect of the road and transport improvements is the potential extension of the passenger rail between Bankstown and Liverpool CBDs, with a possible station and associated rail infrastructure within the northern area of the Airport, as identified in Chapter 10.0.

Table 9.8: 20 year Development Program – Aviation Infrastructure Development

Zone	Development	Trigger/Comment
AVIATION ZONE	**Future extension of Centre Runway (11C/29C) to the south-east** - 220 metre extension to the Centre Runway (Runway 11C/29C) to enable Code 3C aircraft to operate at Maximum Take-Off Weight (MTOW)	Subject to demand, a detailed cost-benefit analysis, and relevant approvals

Table 9.9: 20 year Development Program – Road and Transport Improvements

Zone	Development	Trigger/Comment
AIRPORT BUSINESS ZONE	Metro South-West Rail Extension - Extended passenger rail between Bankstown and Liverpool CBDs - Active promotion of rail alignment on northern boundary of Bankstown Airport with a station (bus-rail interchange) within Airport land	BAL to actively promote development opportunity and consider reserving land for such purposes
EXTERNAL TO AIRPORT	Active promotion of major road improvements surrounding Bankstown Airport, including: - Henry Lawson Drive duplication (between M5 and Hume Highway) - Marion Street (subject to Metro South-West Rail Extension) - Intersection upgrades along Milperra Road, Henry Lawson Drive and Edgar Street	BAL to work proactively with RMS and Canterbury-Bankstown Council
INTERNAL TO THE AIRPORT	Formalisation of a ring road around Bankstown Airport	Subject to demand

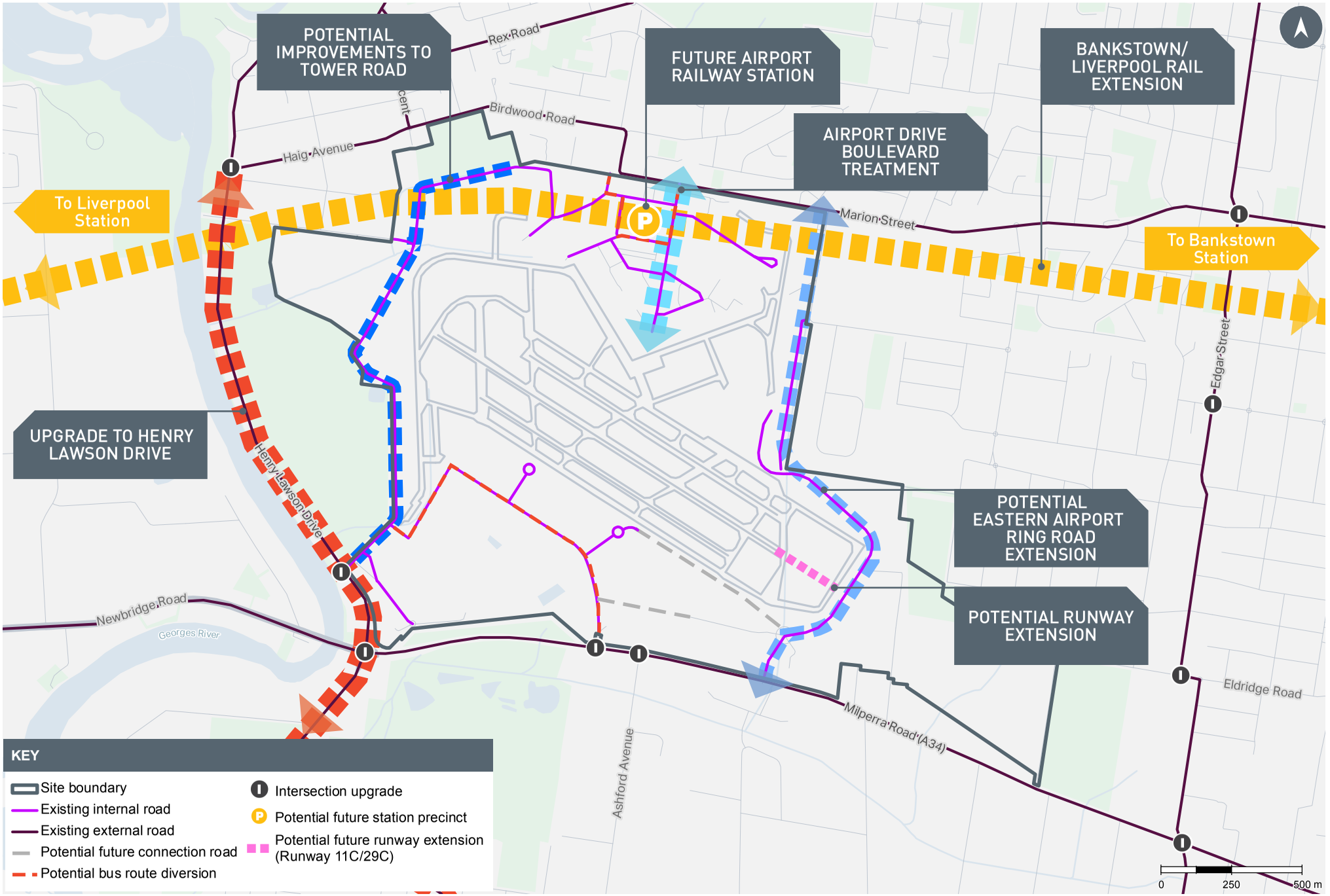


Figure 9.2: 20 year Airport Development Strategy

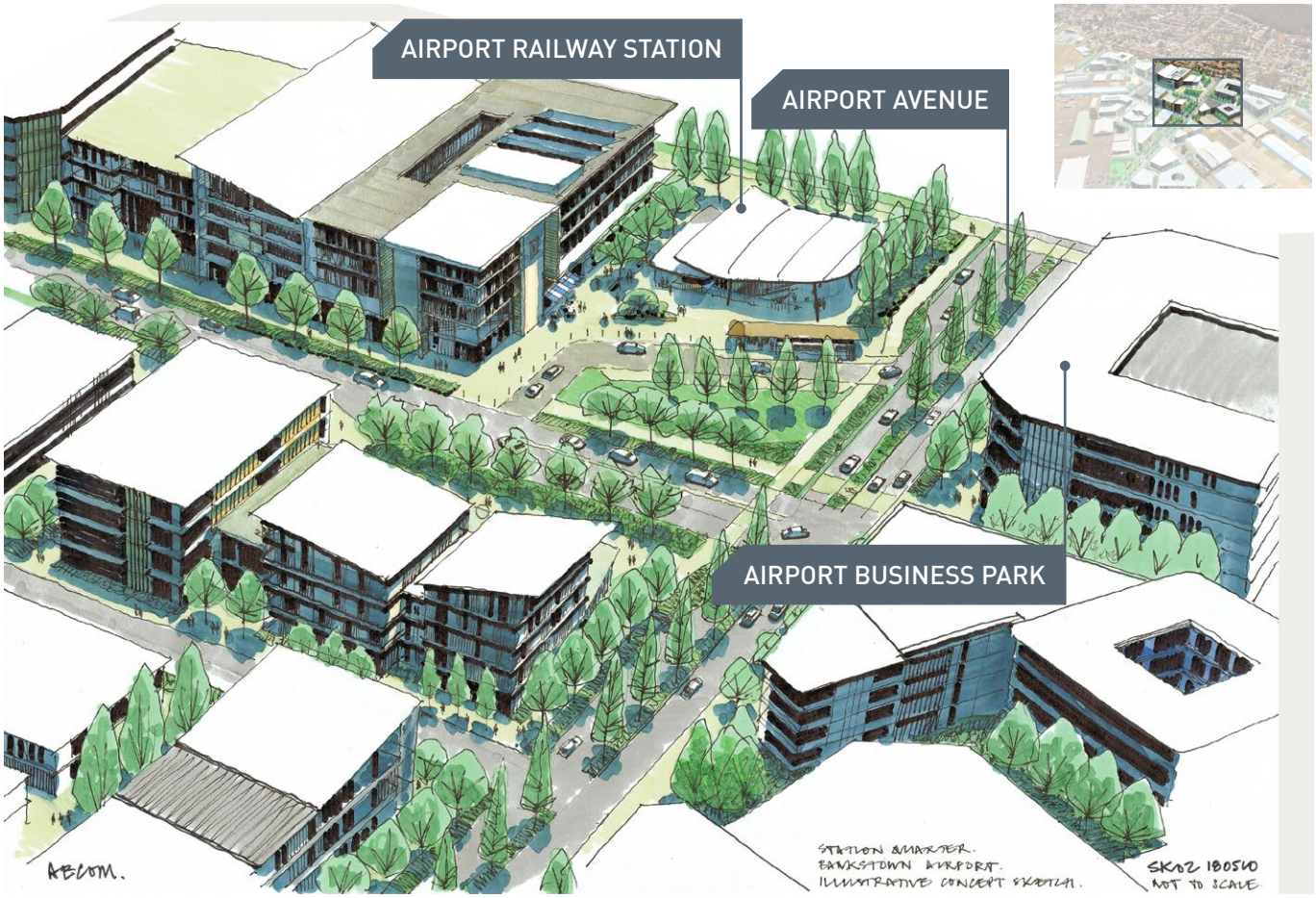


Figure 9.3: 20 year Airport Railway Station Vision



10.0

GROUND TRANSPORT PLAN



10.1 OVERVIEW

THIS GROUND TRANSPORT PLAN (GTP) WILL PLAY AN IMPORTANT ROLE IN DELIVERING MORE RELIABLE TRAVEL TO AND FROM THE AIRPORT AND MORE CONVENIENT MOVEMENT WITHIN THE AIRPORT.

The Ground Transport Plan has been prepared to support the aims and objectives of the Master Plan 2019 and considers:

- The Airport's relationship to existing ground transport links including public transport
- Vehicular traffic growth both as a result of proposed Airport development and organic growth
- State and local government plans and future considerations
- Potential transport disruptors and innovations;
- The relationship between the 2014 Master Plan and this Master Plan 2019
- The 20 year vision for ground transport at the Airport.

The Airport is heavily reliant on the road network with approximately 96% of all people travelling to the Airport doing so by car. Improvements to public transport, cycle ways and footpaths servicing the Airport will encourage more journeys to the Airport using these modes of travel.

An overview of roads servicing the Airport are summarised below:

Regional Road Network – Interchanges with the Major Road Network are located three to four kilometres from the Airport. The South Western Motorway (M5) to the south of the Airport is the primary motorway link between the Westlink (M7) in the west and the Pacific Highway (M1) in the east. The Airport is accessed via two interchanges off the M5 at The River Road and at Henry Lawson Drive.

Figure 10.1 illustrates that major north-south roads are limited between the Bankstown CBD and the A6. Henry Lawson Drive immediately to the west of the Airport caters for a large number of local north and south movements as well as trips connecting to the Hume Highway or to the M5.

The Surrounding Road Network - the roads and streets immediately surrounding the Airport typically suffers from congestion, particularly at peak periods (with the exception of Marion Street to the North). A summary of the surrounding road network is as follows:

- Milperra Road is located immediately to the south of the Airport and is a Classified State Road which is congested at peak periods (particularly at intersections)
- Henry Lawson Drive is located to the west of the Airport and is a Classified State Road which is moderately trafficked throughout the day building to heavy traffic in the afternoon and early evening peak periods
- Edgar Street is located east of the Airport and is an Unclassified Regional Road which experiences localised congestion
- The northern part of the Airport is served by Marion Street, Owen Road, Birdwood Road and Haig Avenue (referred to as the "Northern Route" in this GTP). These Unclassified Regional Roads do not experience much congestion throughout the day.

Connections between the surrounding road network and the Airport are identified in Figure 10.2. As the Airport has no continuous internal loop road, the Local Road Network is sometimes used for some inter-Airport journeys.

BAL has developed a traffic model using VISSIM software to assess the implications of potential development at the Airport during the first five years of this Master Plan 2019.

The Airport and the surrounding road network are forecast to experience an increase in traffic demands due to local development and broader traffic growth associated with greater Western Sydney expansion. Potential development on the Airport will introduce new businesses and services, particularly in the Commercial Zone. Such development may further increase traffic on roads surrounding the Airport.

The traffic modelling has been used inform the creation of the five year GTP to optimise the use of existing transport infrastructure and increase its capacity where necessary to support growth.

FIVE YEAR PLAN (2019-2024)

The road network surrounding the Airport is becoming more congested as Sydney expands to the west. Access to the Airport is slowed when Milperra Road and Henry Lawson Drive are congested during peak periods. The five year GTP recommends action by state and local authorities to relieve pressure on these roads and their intersections in order to meet projected traffic demands.

Development on the Airport site will contribute minor increases to traffic on roads surrounding the Airport, mostly in the Airport's proposed Commercial Zone in the South West Precinct which outlined in Chapter 9 Development Plan. The five year GTP recommends upgrades to road infrastructure to improve access to and from South West Precinct. BAL will work closely with the relevant authorities to implement any recommended upgrades.

Most travel to the Airport is by car, with limited access by public transport, cycling and walking. The majority of people who work at the Airport live locally in Bankstown and Liverpool. The Airport would benefit from any upgrades to footpaths and shared paths to encourage more people commute by walking or cycling. A Public Transport Plan and Active Transport Plan form part of the five year GTP.

Emerging innovations that may change the way people travel to and from, and within Bankstown Airport include Mobility as a Service (MaaS) applications such as Uber, on-demand public transport, bike share schemes. Whilst some commuters may change to these modes of travel in the future, it is clear that efficient traffic access and circulation will still be required by the vast majority of airport employees and visitors.

Traffic movement within the Airport itself is constrained by the absence of internal access roads connecting the various precincts of the Airport. The five year plan recommends the construction of a new internal connector road within the Commercial Zone, linking Milperra Road and Murray Jones Drive to Tower Road and Henry Lawson Drive. This would improve intersection operating conditions at the intersection of Henry Lawson Drive, Milperra Road and Newbridge Road.

20 YEAR STRATEGY

Over the longer term, the GTP for the Airport will be influenced by whether the potential extension of the Metro Southwest between Bankstown and Liverpool actually proceeds and passes through the Airport, and the potential for a station at the Airport. Beyond the Metro Southwest opportunities over the next 20 years, key ground transport considerations include:

- Increasing north-south connectivity around the Airport including increasing the capacity of Henry Lawson Drive between the Hume Highway and the M5 to cater for increasing background traffic growth
- Upgrading intersections along Milperra Road, Henry Lawson Drive and Edgar Street
- Incrementally developing an internal ring road system within the Airport.

The longer-term scenario will involve upgrades to major roads by the relevant authorities, such as the Henry Lawson Drive corridor, which will be required due to traffic growth in background traffic. Beyond this, demand for transport infrastructure for the 20 years from 2019 cannot be predicted with any certainty.

Similarly, key transport unknowns include the location for the preferred alignment, stations and timing for any extension of Metro Southwest from Bankstown to Liverpool along with the availability of project funding.

10.2 GROUND TRANSPORT INFRASTRUCTURE

10.2.1 REGIONAL GROUND TRANSPORT INFRASTRUCTURE

MAJOR ROAD NETWORK

Bankstown Airport is located near several major arterial roads as shown in Figure 10 .1. These roads distribute traffic across the Greater Sydney Region and include:

- Hume Highway (A22)
- South Western Motorway (M5)
- Milperra Road (A36)
- Henry Lawson Drive
- Fairford Road, Stacey Street, Rookwood Road (A6).

The South Western Motorway (M5) to the south of the Airport is the primary motorway link between the Westlink (M7) in the west and the Pacific Highway (M1) in the east, providing regional connections to and from the Airport. The Airport is accessed via two interchanges from the M5 at The River Road and at Henry Lawson Drive. These interchanges are located three to four kilometres from the Airport's southern access onto Milperra Road, providing access to the regional motorway network.

The M5 is the primary route to the Sydney CBD for south-west Sydney commuters. Widening of the M5 was completed in December 2014, which added a third lane in each direction. Despite this widening, the M5 is heavily congested eastbound during the morning peak period. During the afternoon-early evening peak period, congestion extends further west from Liverpool to Sydney International Airport.

The Hume Highway (A22) to the north of the Airport provides a secondary major east-west connection between inner Sydney and Liverpool. It connects a number of major centres to the Airport from the north, east and west via Henry Lawson Drive and Edgar Street. The Hume Highway near the Airport is typically a six-lane urban arterial route carrying heavy volumes of road freight and general traffic. It carries moderate to heavy traffic loads in peak periods without excessive congestion, and sustains a steady flow of traffic throughout the day.

The spacing of major north-south roads increases significantly to the west of the Bankstown CBD and the A6. The result is Henry Lawson Drive, immediately to the west of the Airport, caters for a large number of local access movements, as well as trips connecting to the Hume Highway or to the M5, and other north-south trips. The route is primarily a single lane in each direction with widening at key intersections between the Hume Highway and the M5.

The heavy reliance on Henry Lawson Drive for a number of trip types along with its limited capacity results in heavy congestion, particularly in the afternoon and evening peak periods, with steady traffic flows throughout the day. A major 'pinch point' exists at the intersection of Newbridge Road, Milperra Road and Henry Lawson Drive.

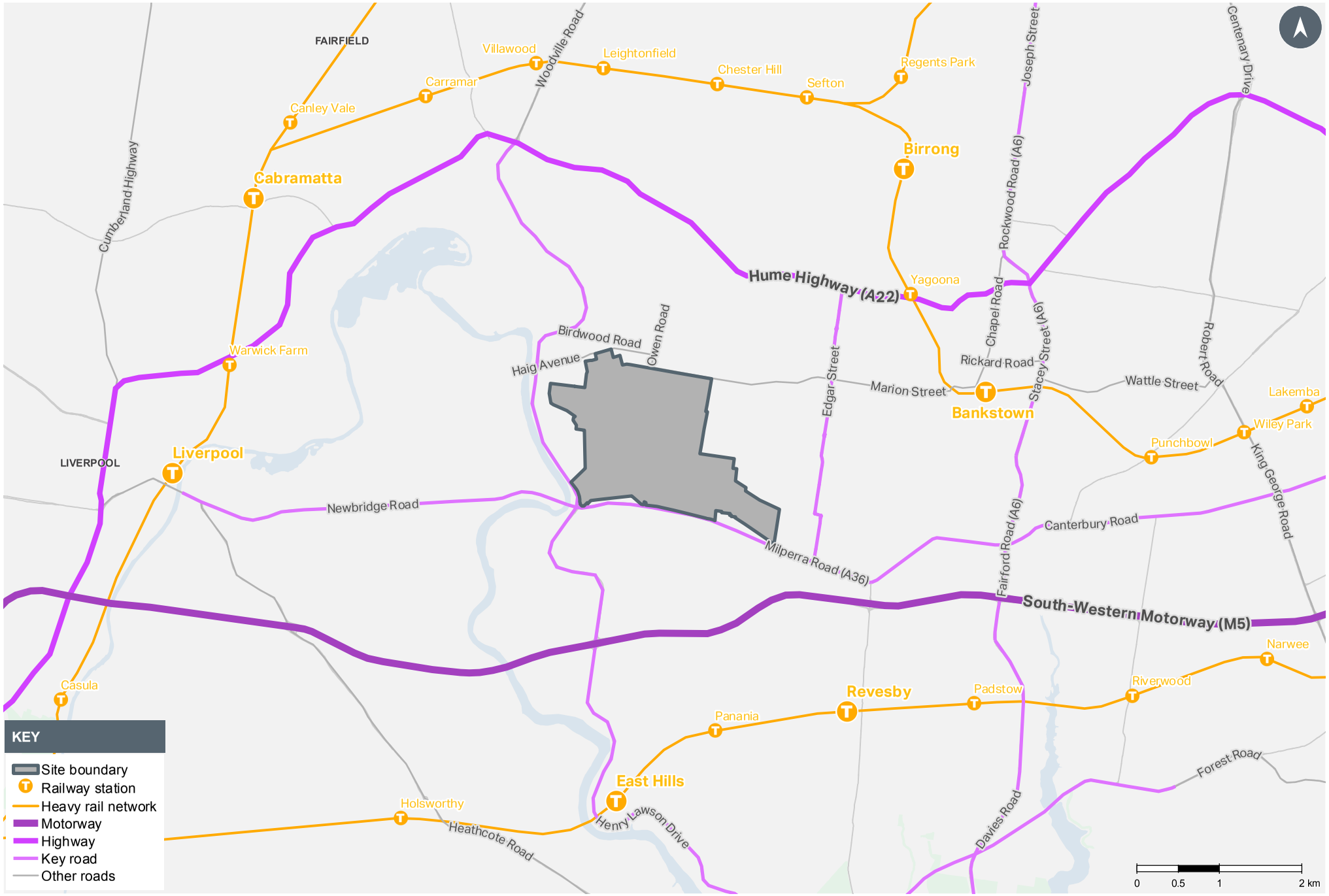


Figure 10.1: Regional Transport Infrastructure Services

TRUNK PUBLIC TRANSPORT

There is no trunk public transport within walking distance of the Airport. The Airport is located midway between the T3 and T8 passenger rail lines.

Bankstown Station is approximately four kilometres east of the Airport and is the nearest location for rail-bus interchanges for trips to the Airport Precinct. The location of the Airport in relation to the rail network is shown in Figure 10.2.

Current travel times between key locations and the Airport are summarised in Table 10.1 which demonstrates that the Airport is highly inaccessible by trunk public transport services. Public transport to the Airport results in relatively long travel times when compared with private vehicle travel times.

10.2.2 LOCAL GROUND TRANSPORT INFRASTRUCTURE

The primary roads near to and serving the Airport include:

- Milperra Road
- Henry Lawson Drive
- Edgar Street
- The 'Northern Route' including Marion Street, Owen Road, Birdwood Road, and Haig Avenue.

All of the above roads are designated as being either Classified State Roads or Unclassified Regional Roads. These roads and their key intersections are shown in Figure 10.2, while a description of their classification is provided in Table 10.2.

Table 10.1: Comparison of Travel Times – Public Transport versus Private Vehicle

From	To	Public Transport Travel Time	Private Vehicle Travel Time
Central Station	Bankstown Airport	1h:08mins	1h:02mins
Cronulla CBD	Bankstown Airport	1hr:34mins	0hr:55mins
Liverpool CBD	Bankstown Airport	1hr:15mins	0hr:24mins
Camden CBD	Bankstown Airport	1hr:51mins	0hr:43mins
Parramatta CBD	Bankstown Airport	1hr:02mins	0hr:36mins
Macquarie Park	Bankstown Airport	1hr:45mins	1hr:03mins

Table 10.2: Classification of Roads in NSW

Classified State Roads	Strategic arterial roads linking major sites across broad areas, and are managed and financed by RMS; • Milperra Road • Henry Lawson Drive
Unclassified Regional Roads	Perform an intermediate function between the main arterial network and council-controlled Local Roads, and due to this network significance RMS provides financial assistance to councils for the management of these roads; • Edgar Street • The Northern Route

MILPERRA ROAD

Milperra Road is a Classified State Road under the control of RMS and comprises three traffic lanes in each direction with turn pockets at intersections. Milperra Road is generally posted at 70 kilometres per hour and has a number of direct property accesses onto it, which are restricted to left in and out movements and are mostly located along its southern side. Its intersections, particularly its major intersections, are congested in peak periods. The alignment of Milperra Road is primarily straight and flat.

HENRY LAWSON DRIVE

Henry Lawson Drive is a Classified State Road under the control of RMS and typically includes a single lane in each direction north of its intersection with Tower Road. It is generally posted at 60 kilometres per hour. Between Tower Road and its intersection with Newbridge Road and Milperra Road, Henry Lawson Drive provides a wide urban driving environment with lanes and road widths dictated by intersection capacity needs. North of Tower Road, Henry Lawson Drive takes on a semi-rural character, with no kerb and channel, and a heavily-treed driving environment.

Directional signage to the Airport is located at the intersection of Henry Lawson Drive and Haig Avenue.

Henry Lawson Drive is moderately trafficked all day building to heavy traffic in the afternoon and early evening peak periods.

EDGAR STREET

Edgar Street is an Unclassified Regional Road under the control of Canterbury-Bankstown Council. It is used as a through-traffic route between Milperra Road and the Hume Highway, and used as a collector road for light industrial development and residential development within its catchment. It is generally posted at 60 kilometres per hour and is mostly a single lane each way with some unmarked on-street parking north of Eldridge Road. A school is located near Birdsall Avenue. The long, mostly straight and wide alignment, encourages its use as a through traffic alternative to Henry Lawson Drive.

THE NORTHERN ROUTE (MARION STREET, OWEN ROAD, BIRDWOOD ROAD, HAIG AVENUE)

This route comprises Unclassified Regional Roads under the control of Canterbury-Bankstown Council.

The route borders the northern side of the Airport and the primary access to the Airport Business Zone. The route is mostly four lanes wide with two lanes in each direction, and outer lanes used for on-street parking in some locations. The route is generally posted at 60 kilometres per hour.

Travelling in a westerly direction, Marion Street turns into Owen Road which has one lane in each direction plus parking lanes. Owen Road then turns into Birdwood Road which has the same cross-sectional profile and residential property accesses along its length. Further west, Birdwood Road passes through the local Georges Hall Village before becoming Haig Avenue, which connects through to Henry Lawson Drive with a signalised intersection.

This corridor does not experience much congestion throughout the day.

KEY INTERSECTIONS

There are a number of key intersections on roads immediately surrounding the Airport that provide direct access or are on-route to the Airport Precinct. These key intersections are identified in Figure 10.2, and include:

- Milperra Road, Edgar Street and Queen Street: 4-leg signalised intersection
- Milperra Road and Nancy Ellis Leebold Drive: 3-leg signalised intersection which currently provides primary access to the Commercial Zone
- Milperra Road and Murray Jones Drive: 3-leg signalised intersection which currently provides primary access to the Commercial Zone
- Milperra Road, Henry Lawson Drive and Newbridge Road: The most heavily trafficked intersection in the area as it is the confluence between major north-south and east-west routes, in close proximity to the M5 interchange and with heavy turning movements
- Henry Lawson Drive and Tower Road: Signalised intersection used primarily for access into the Commercial Zone from the south and west. Also provides access to the north of the Airport.

INTERNAL ROADS AND PARKING

Within the Airport itself, there is no continuous 'loop road' to provide access around the entire site. While Tower Road allows for access from Henry Lawson Drive to the Airport Business Zone, the most direct access to the majority of the Airport is via the external road system and separate access points provided for each zone.

The Airport Business Zone includes a number of local streets, which connect off Airport Avenue to individual and varied land uses on separate lots.

Parking is highly dispersed around the site and typically involves free off-street parking associated with each of the businesses occupying the site. Some on-street parking exists in the Airport Business Zone. Similarly, parking for businesses in the Gateway Precincts of the Commercial Zone is mostly in the form of off-street car parks associated with each business.

10.2.3 PUBLIC TRANSPORT

The Airport is serviced by two bus routes shown in Figure 10.2:

- Route 905
- Metro Bus Route M90.

ROUTE 905

Route 905 connects Fairfield to Bankstown, via Villawood, Chester Hill and the north of the Airport (Airport Business Zone). This route connects the north of the Airport with Bankstown Railway Station and its train services. The bus service follows Marion Street, along the Airport's northern boundary.

Route 905 runs every 30 minutes outside peak times and every 15 minutes during the morning peak period and afternoon and early evening peak period.

The primary bus stop for Route 905 at the Airport is along Marion Street near Airport Avenue. There is no pedestrian pathway connecting the bus stop on the southern side of Marion Street to businesses within the Airport Business Zone.

METRO BUS ROUTE M90

The M90 originates in Burwood, delivering passengers from Burwood Railway Station to Strathfield Railway Station, the south of the Airport and Bankstown Railway Station. The service bisects a gap in the train network, running through the middle of south-western Sydney, broadly from Bankstown to Liverpool.

The M90 runs along Milperra Road to the south of the Airport and provides a connection from Bankstown Railway Station to the Airport's southern side. The M90 runs every 15 minutes outside peak times and every 10 minutes during peak periods.

The M90 services the southern Commercial Zone at two locations, with stops located on either side of Milperra Road east of the Henry Lawson Drive intersection and east of the Murray Jones Drive intersection. Footpath treatment within the vicinity of these bus stops is poor.

10.2.4 FOOTPATHS AND CYCLEWAYS

In general, there are few footpaths surrounding or within the Bankstown Airport site, providing limited walk-access to/from the Airport, either from nearby residential areas or from surrounding bus stops.

Isolated sections of new footpath have been provided along Milperra Road for access to bus stops near Murray Jones Drive. Similarly, there are footpaths between Milperra Road and the Bunnings and McDonalds sites for access to these businesses.

A regional off-road cycleway runs along the western side of Henry Lawson Drive and can be accessed from the Airport via Tower Road, Rabaul Road or Haig Avenue.

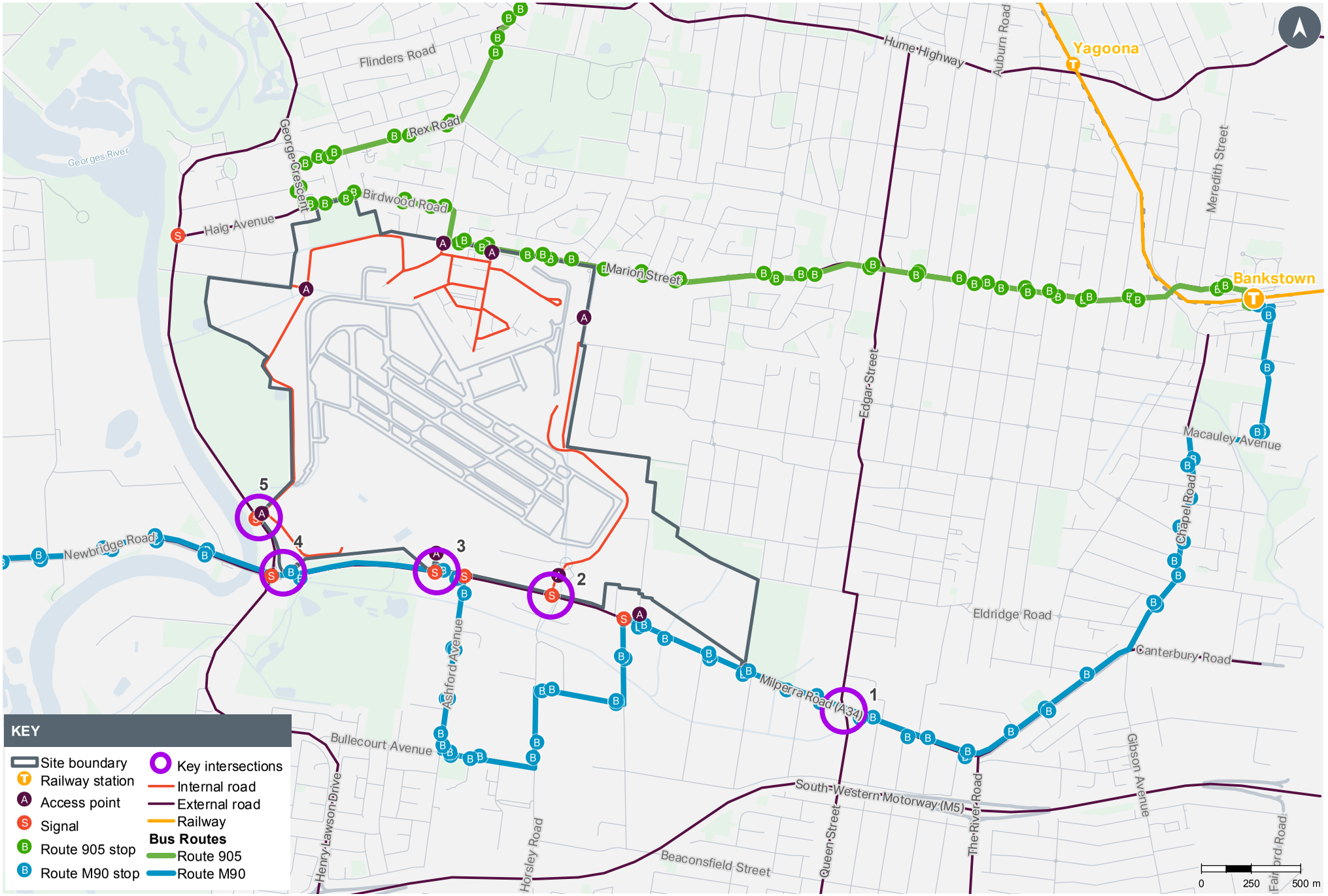


Figure 10.2: Airport and Surrounds Transport Infrastructure and Services

10.3 PROJECTED GROUND TRANSPORT DEMANDS

10.3.1 CURRENT TRANSPORT DEMANDS

TRANSPORT MODE USAGE

Approximately 96 per cent of people travelling to the Airport for work use a car, with 2.3 per cent using public transport and other active transport. This reflects the:

- Limited number of bus services surrounding the site
- Walking distances between bus stops and businesses within the Airport
- Absence of footpaths and cycle ways servicing the site.

TRAVEL PATTERNS

The majority of 'journey to work' trips that end at the Airport originate within Bankstown and Liverpool. These suburbs are within close proximity of the Airport. Increasing public transport access to the Airport with conventional fixed route services may be difficult to achieve in the shorter term. However, there may be some potential for increasing walking and particularly cycling usage that may be accessed by employees.

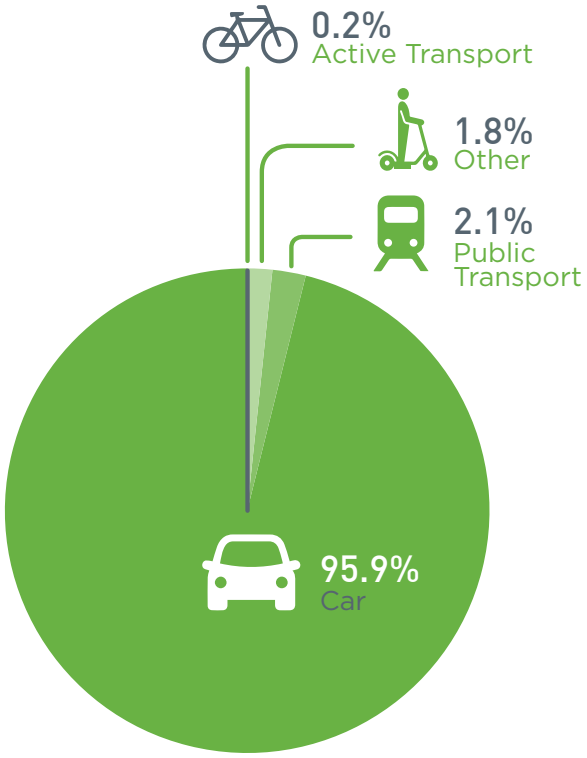


Figure 10.3: 2016 Airport Journey to Work Access Modal Shares (Source: ABS 2016)

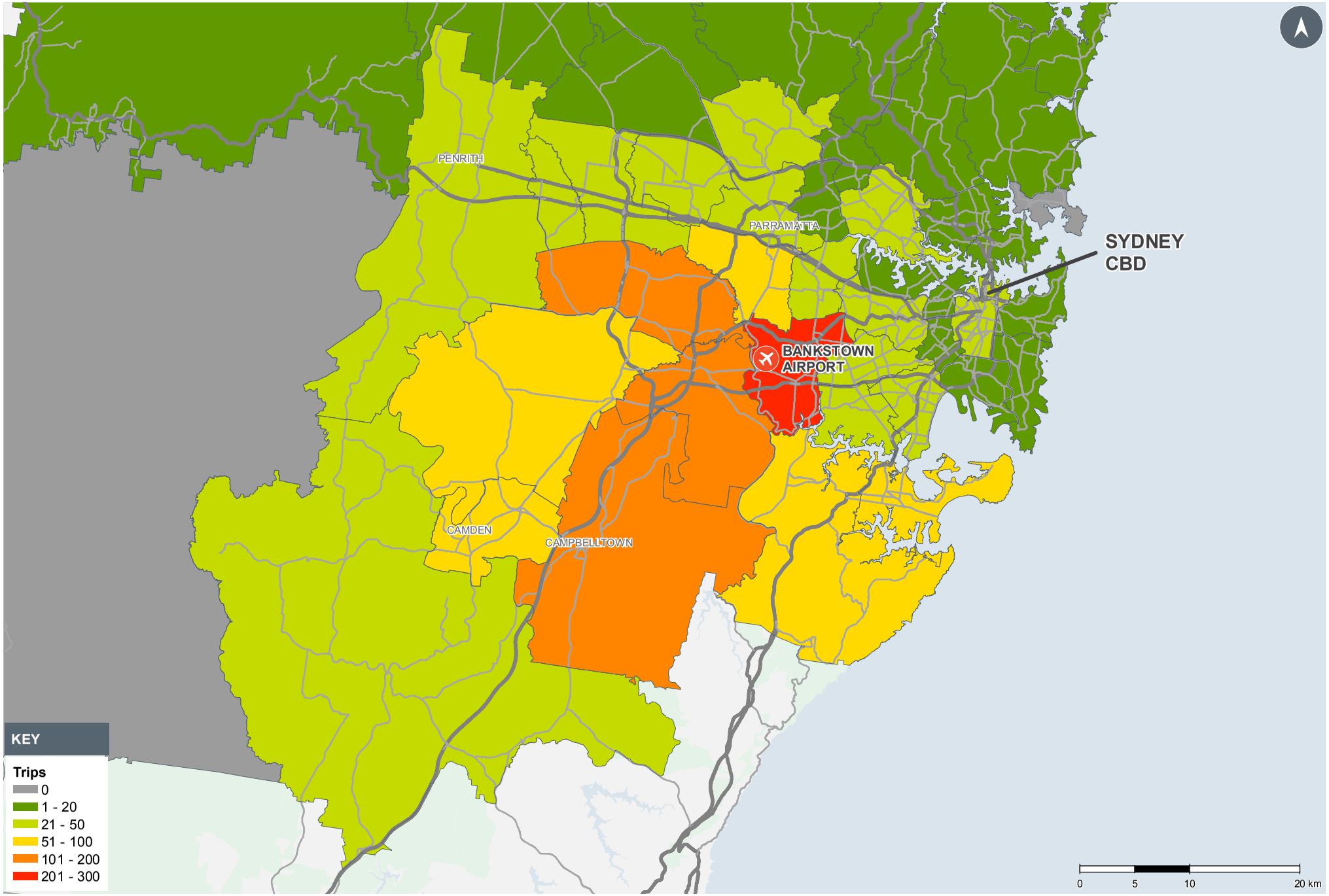


Figure 10.4: Origin Locations of Work Trips to the Airport

TRAFFIC MODEL

BAL has developed a traffic model using VISSIM software to assess the implications of potential development at the Airport during the first five years of this Master Plan 2019. The traffic modelling has built upon an RMS-approved 2017 Base VISSIM traffic model prepared by BAL and covering the study area. The new traffic model:

- Includes a study area (agreed with RMS) of key intersections and roads;
- Incorporates on Airport activities, including traffic growth attributable to growth in aircraft movements and likely property development, over the 5 year Master Plan period (2019-2024); and
- Forecasts background traffic growth (i.e. traffic generated by activities outside of the Airport).

The traffic model has been used to inform the Ground Transport Plan, and provides insights into site-generated traffic demands. An overview is provided in this section.

SITE-GENERATED TRAFFIC DEMANDS

The Airport currently generates approximately 1,320 vehicle trips in the morning peak hour and 1,470 vehicle trips in the afternoon and early evening peak hour, as shown in Figure 10.5.

This demand is evenly split between the Marion Street access and the Milperra Road access, with the Starkie Drive egress used heavily in the afternoon peak. Off Marion Street, the traffic demands at both the Airport and the Drover Drive intersections are similar. Off Milperra Road, traffic demands are heaviest via the Nancy Ellis Leebold Drive intersection.

Some access points to the Airport also serve destinations that are off-Airport. The traffic volumes identified in Figure 10.5 include these trips.

INTERSECTION TRAFFIC DEMANDS

The highest volume intersection within the study area is the intersection of Milperra Road, Newbridge Road and Henry Lawson Drive, as shown in Figure 10.6 and Figure 10.7. This intersection acts as a major 'pinch point' for the adjacent intersections along Milperra Road and Henry Lawson Drive.

The Edgar Street and Milperra Road intersection is also heavily trafficked, with volumes at the Edgar Street intersections approaching those at Henry Lawson Drive intersections.

By comparison, Marion Street has relatively low traffic volumes for a four-lane road.

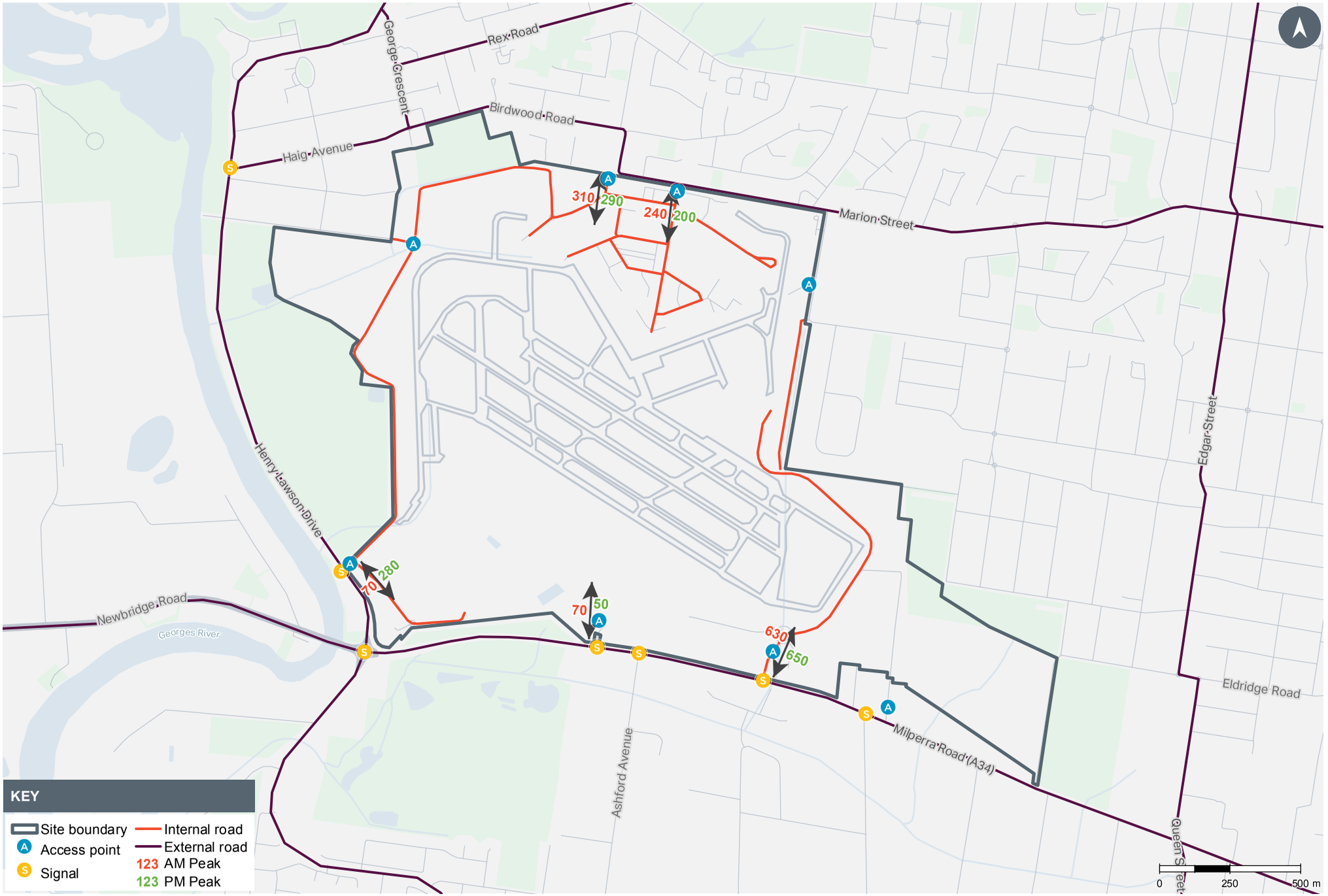


Figure 10.5: 2017 Peak Hour Vehicular Access Demands

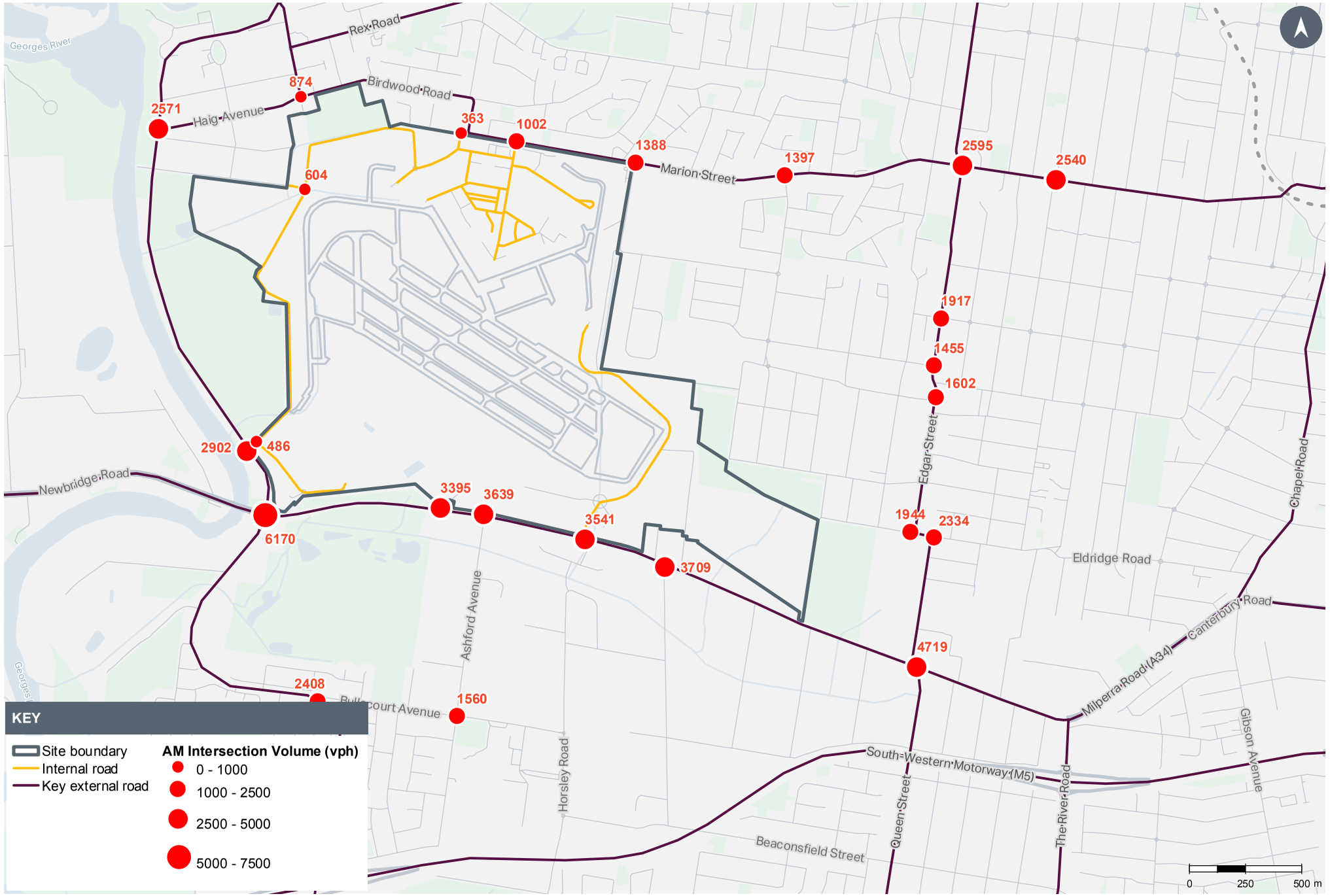


Figure 10.6: 2017 Morning Peak Hour Intersection Traffic

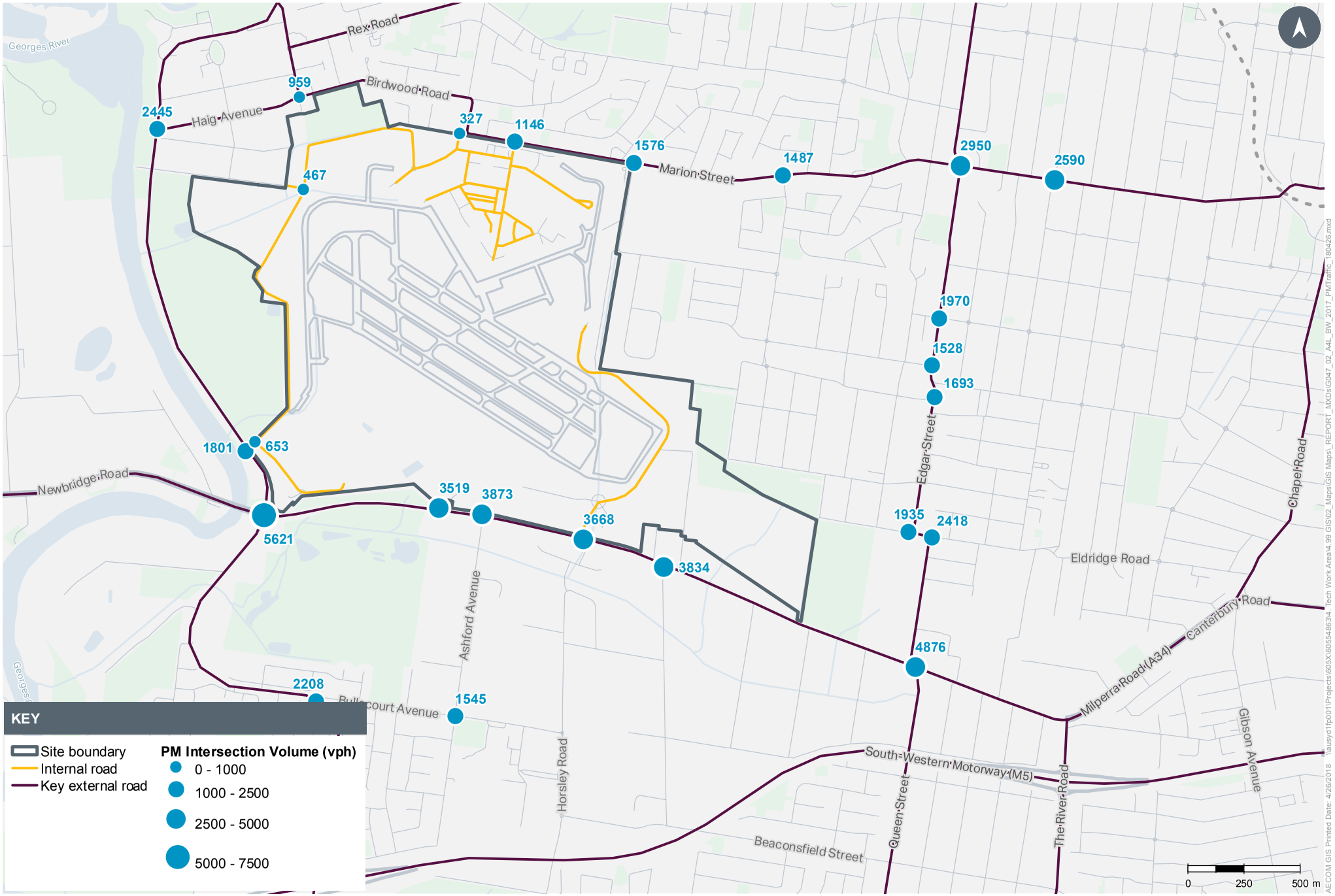


Figure 10.7: 2017 Afternoon and Early Evening Peak Hour Intersection Traffic

10.3.2 FUTURE TRAFFIC DEMANDS 2024

BACKGROUND TRAFFIC GROWTH

Traffic demand on roads surrounding the Airport will continue to grow as activity and development occurs in the broader catchment of these roads.

Milperra Road and Henry Lawson Drive are through-traffic routes that are expected to accommodate some of this growth. However, in the absence of any road or intersection upgrades, there is the potential for this growth to be suppressed due to excessive congestion on these roads. Excessive congestion would result in a range of travel choice responses such as the use of alternative modes of transport, the use of alternative routes, changing departure times of trips and, in some cases, suppressing or relocating trips to other destinations in less congested areas.

The traffic modelling for this GTP includes estimates of background traffic growth between 2017-2024 which have been sourced from the Sydney Metropolitan Region Strategic Travel Model (STM). Background traffic growth indicates traffic in the study area that is not destined for the Airport, reflecting only the through traffic. Background traffic growth surrounding the Airport is estimated at less than one per cent per annum.

GROWTH IN AIRCRAFT MOVEMENTS

Growth in the number of aircraft movements is likely to increase traffic movements at the Airport. Aircraft movements are forecast to grow at 3.8 per cent between the years 2018 to 2023 as shown in Table 4.1. However, in the context of total traffic demands to and from the Airport, the volume of ground traffic associated with aircraft movements is relatively small.

PROPERTY DEVELOPMENT-GENERATED TRAFFIC

A number of development projects have been identified in the first five years of this Master Plan. These are detailed in Chapter 9.0 – Development Program. The potential trip generation of this development is detailed in Table 10.3. New non-aviation development at the Airport is estimated to generate approximately an additional 1,300-1,850 peak hour vehicle trips by 2024.

SUMMARY OF 2024 TRAFFIC DEMANDS

The intersection volumes projected in 2024 are detailed in Figure 10.8 and Figure 10.9, and show the increases in background traffic in the study area from 2017.

Table 10.3: BAL Five year Development Plan

Zone	Map Ref.	Development	Building Floor Area	Trigger/ Comment	Trip Generation AM 1 hr	Trip Generation PM 1 hr
AVIATION ZONE	AR-7	**Hangar, workshops and office** - Consolidation and upgrade of existing NSW Police facilities for NSW Police Air Wing facility development	10,000 sqm	**Approved development (under construction)**	0	0
				Airport Business Zone Sub-Total:	**0**	**0**
AIRPORT BUSINESS ZONE	NA-2	**Community based retail (neighbourhood shopping centre)** - Supermarket, entertainment, club	5,000 sqm	Subject to commercial demand and approvals	86	308
	NA-3	**New storage and trade related units**	8,000 sqm		27	27
	AR-8	**Terminal building** - Existing terminal building refurbishment, including new ancillary retail facilities	1,000 sqm		0	0
	AR-9	**Hangar and office** - Refurbishment and consolidation of hangars and new office	10,000 sqm		34	34
	AR-10	**Flight training facilities** - Up to 90 additional students	800 sqm		41	45
	AR-11	**Student accommodation facilities**	1,600 sqm		34	34
	AR-12	**Aircraft hangar facilities**	1,300 sqm		4	4
	AR-13	**Aircraft maintenance and related hangars**	1,500 sqm		5	5
				Airport Business Zone Sub-Total:	**231**	**457**
COMMERCIAL ZONE	NA-4	**First stage development of Commercial zone** - Site works and warehouse development	Up to 37,000 sqm		126	126
	NA-5	**Future stages of Commercial zone** - Industrial/warehouse development	Up to 126,320 sqm		429	429
	NA-6	**Community-based retail (Gateway Precinct Development – neighbourhood shopping centre)** - Bulky Goods Retail - Retail - Food - Hotel	- Supermarket 4,000 sqm - Retail 3,000 sqm - Food 1,000 sqm - Hotel 2,000 sqm		396	398
	NA-7	**Warehouse development** - Warehouse development	12,000 Sqm		41	41
	NA-8	**Supermarket/fast food development – Gateway Precinct development** - Supermarket - Fast Food	- Supermarket 6,600 sqm - Fast Food 500 sqm		128	374
				Commercial Zone Sub-Total:	**1,120**	**1,368**
				Total – 5-Year Development Plan	1,351	1,825



Figure 10.8: 2024 Morning Peak Hour Intersection Traffic

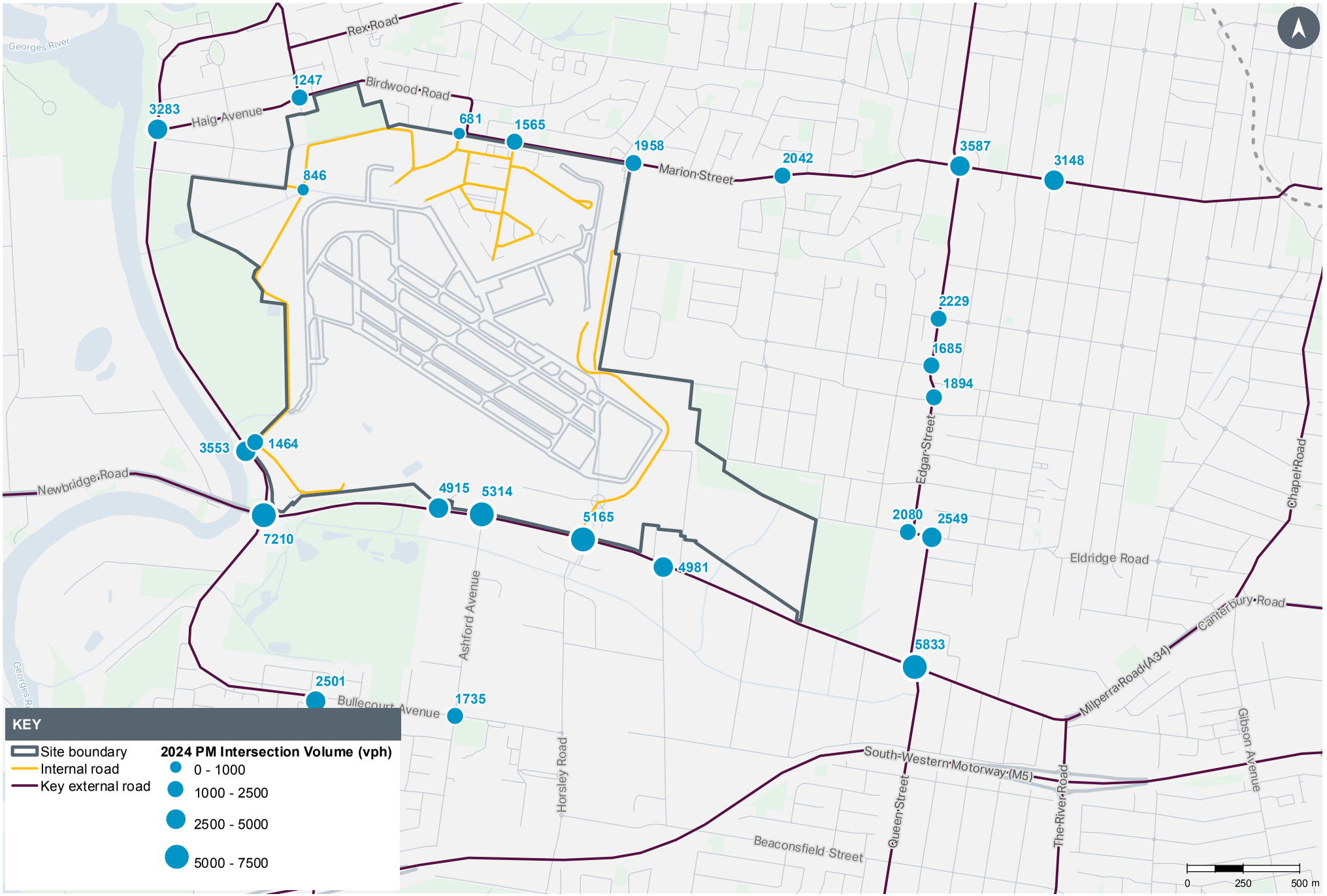


Figure 10.9: 2024 Afternoon/Early Evening Peak Hour Intersection Traffic

10.4 TRANSPORT PLANS AND OTHER FUTURE CONSIDERATIONS

10.4.1 NEW SOUTH WALES GOVERNMENT TRANSPORT PLANS

FUTURE TRANSPORT STRATEGY 2056

In March 2018, the NSW Government released its long term transport strategy titled: *Future Transport 2056*. This document contains a 40-year vision for the NSW transport system – supported by a suite of plans. The Strategy provides a 'directions and outcomes' framework to guide transport investment decisions over the longer term in NSW.



Figure 10.10: Hierarchy of Future Transport Strategy 2056

GREATER SYDNEY SERVICES AND INFRASTRUCTURE PLAN

Also released in March 2018, the *Greater Sydney Services and Infrastructure Plan* (GSSIP) underpins Future Transport Strategy 2056. The GSSIP includes several long-term infrastructure projects which make reference to Airport and surrounding areas, as shown in Figure 10.11. These include:

- The M5 extension from Liverpool to Badgerys Creek
- A new central city road corridor from Kogarah to the M1 via Bankstown and Parramatta
- A major cycling corridor from Bankstown to Liverpool
- Extension of the Metro Southwest from Bankstown Airport to Liverpool
- Dedicated freight rail corridors connecting Bankstown Airport to Port Botany, Campbelltown, Penrith and Richmond.



Figure 10.11: Greater Sydney Services and Infrastructure Plan 2056

M5 EXTENSION

The construction of the Western Sydney Airport will intensify trip generating activities in the region. To service this demand, and to link the Western Sydney Airport with the Sydney CBD, it is proposed that the M5 will be extended from Liverpool to the proposed Outer Sydney Orbital. Extending the M5 will allow for more efficient distribution of road freight between the Airport and the western areas of Greater Sydney.

CENTRAL CITY ROAD CORRIDOR

Transport for New South Wales (TfNSW) has proposed a new arterial road commencing at Kogarah, intersecting with the A1 (Princes Highway). The road will be aligned to the east of Bankstown and Greater Parramatta, and will intersect with the M2 west of Macquarie Park. This road will provide greater accessibility to and from the Airport for road freight and for employees and visitors to the Airport.

CYCLING CORRIDOR FROM BANKSTOWN TO LIVERPOOL

A key cycling corridor is proposed to be constructed by 2026 linking Bankstown to Greater Parramatta, Kingsgrove and Campsie. By 2036, it is proposed that this cycling corridor will extend to the Airport. By 2056, it is proposed that the corridor will connect from the Airport to Liverpool.

METRO SOUTHWEST FROM BANKSTOWN TO LIVERPOOL

The GSSIP identifies the extension of the Metro Southwest passenger rail line from its terminus in Bankstown to a new terminus in Liverpool. Although the alignment of the proposed extension is yet to be finalised, there is an opportunity to provide an alignment and station servicing the Airport together with the opportunity for a marshalling yard to be provided. This would represent a major change in public transport accessibility to the Airport and would have a significant impact on development opportunities, both within and surrounding the Airport.

DEDICATED FREIGHT RAIL CORRIDORS

TfNSW has proposed an expansion of the existing Sydney Freight Network. Under this proposal, dedicated freight rail lines will be built throughout Sydney. The proposed dedicated freight rail corridor will run from Port Botany to the new Western Sydney Airport at Badgerys Creek, Campbelltown to Richmond, and from Campbelltown to the Airport (intersecting with the east-west line). As the alignment of these freight rail corridors have yet to be determined, there is an opportunity to influence and plan to construct the new freight rail corridors near the Airport.

10.4.2 CANTERBURY-BANKSTOWN COUNCIL TRANSPORT PLANS

Canterbury-Bankstown Council does not presently have an overarching transport strategy documenting transport system goals or mode-specific transport strategies and action plans. Council plans also do not identify major roadworks or cycleways programmed for the area surrounding the Airport.

Council is preparing an 'Issues Paper' as a first step in preparing a Local Area Plan (LAP) for the Airport precinct.

The 2009 Bankstown Employment Lands study identified the need to 'expand opportunities for high value-added industries and skilled jobs associated with aviation, manufacturing and logistics and education, through improving planning and industry networks, development and redevelopment opportunities, and access to and from the area'. This study nominated a series of actions including:

- Improving road access to the M5
- A new airport ring road connection at Milperra Road
- Possible re-routing of the Liverpool-Bankstown strategic bus route to service the Airport.

10.4.3 TRANSPORT DISRUPTION AND INNOVATION

Emerging innovations that may influence transport access to and from Bankstown Airport in the future include:

- Mobility as a service (MaaS)
- On-demand public transport
- Bike share schemes
- Autonomous vehicles.

MOBILITY AS A SERVICE

With near-complete market penetration of smartphones, ride-sharing services are experiencing increasing levels of popularity. Peer-to-peer ride-sharing companies, such as Uber and Lyft, are proving the effectiveness of marketing Mobility as a Service (MaaS). MaaS could conceivably provide a platform for a single payment multi-modal trip within a city, while optimising the trip based on travel time, cost and personal preferences, such as a desire to use active transport. With increased awareness of MaaS, it is anticipated that car ownership will decrease over time within major cities.

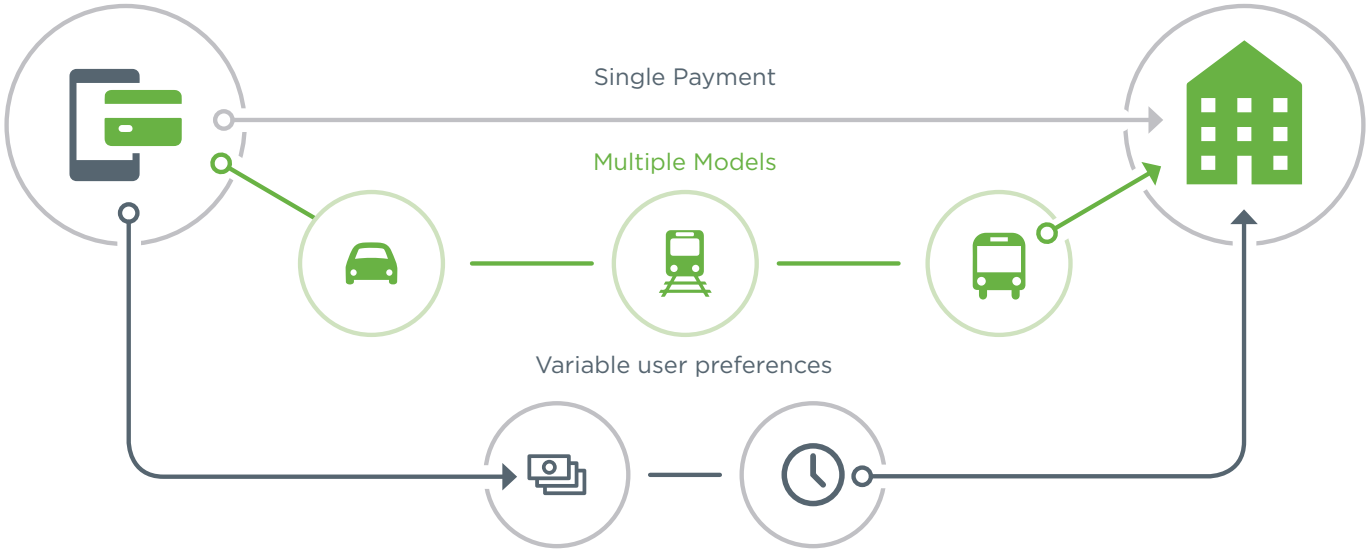


Figure 10.12: Mobility as a Service Overview

MaaS has the potential to increase accessibility to public transport and active transport from and to the Airport, to facilitate the anticipated modal shift from individually-owned private cars. Future planning considerations for the Airport include allowing for more set-down and pick-up zones (to facilitate the increasing popularity of peer-to-peer ride sharing), and introducing flexibility to convert excess parking space should private vehicle usage reduce.

ON-DEMAND PUBLIC TRANSPORT

An on-demand bus service takes passengers door-to-door. If on-demand bus services continue to be supported, there is potential for an on-demand bus service to be provided for employees at the Airport. This would reduce reliance on private vehicles and encourage a modal shift towards public transport.

BIKE SHARE SCHEMES

A number of dockless bike share schemes are already established in Sydney. Available bikes can be located through a smartphone 'app', which is also the mechanism for booking and 'unlocking' the bike for use. As these bikes are not required to be parked in a designated rack, local governments across Sydney are establishing guidelines to keep pathways and roadways clear of parked bicycles.

As and when the dockless bike share schemes expand towards the Airport, bicycle racks and end of trip facilities could be implemented as part of the development in centralised and convenient locations.

AUTONOMOUS VEHICLES

Initial stages of autonomous vehicle technology (i.e. adaptive cruise control, lane-keeping assistance and parking assistance features) are already in place in many new vehicles. Another form of this automation is heavy vehicle platooning. This is based on vehicle-to-vehicle communications and allows trucks to decrease headways, increase average speed, reduce braking and improve fuel efficiency.

The Airport generates reasonably high volumes of heavy vehicle (truck) trips now and will do so into the future. Autonomous vehicle technologies may be most applicable in loading and unloading areas within the Airport environment (both airside and landside).

Another form of autonomous vehicle is the completely autonomous (driverless) car. These autonomous vehicles are best used in controlled locations. A service is already in operation in Sydney Olympic Park where the NSW Government (through the TfNSW Smart Innovation Centre) has launched a trial using a small, driverless shuttle bus.

10.5 NEW GROUND TRANSPORT PLAN

The Airport is planned to grow significantly over the next five years. This will influence the ground transport needs, particularly in relation to access and circulation around the site. There will be minimal ground transport demand growth associated with increased aircraft movements with the majority of ground transport demand is forecast to be associated with land development. This is primarily associated with transport demands in major development proposals in the southern Commercial Zone and, to a lesser extent, the northern Airport Business Zone.

Over 1,300 vehicle trips in the morning peak hour and over 1,800 vehicle trips in the evening peak hour are expected to be added to the surrounding network if all planned development is approved and eventuates over the Master Plan's five year period.

10.5.1 KEY PLANNING PRINCIPLES

With the volumes of traffic already surrounding the Airport and the challenges in providing new or widened major road links, there is a need to encourage, over time, as much travel as possible to and from the Airport via walking, cycling and public transport. While there may be some trips to the Airport that can be shifted to these travel modes, it is clear that efficient traffic access and circulation will still be required by the vast majority of airport employees and visitors.

The key traffic and transport planning principles used as the foundation for the 2019-2024 GTP are as follows:

- Ensure that effective vehicular access is maintained, working with the NSW Government and Canterbury-Bankstown Council to implement necessary upgrades
- Improve traffic circulation within and surrounding the site to minimise the volume of traffic and the length of congested external roads that need to be used by Airport-related traffic
- Encourage as many trips as possible to walk, cycle and use public transport for access to and from the Airport, for example by engagement with Canterbury-Bankstown Council
- Ensure flexibility in design to accommodate rapidly evolving changes, such as on-demand public transport, reduced individual private vehicle ownership and autonomous vehicle technologies.

10.5.2 FIVE YEAR GROUND TRANSPORT PLAN (2019-2024) ROADS

Traffic modelling described in Section 10.3.1 assessed the need for upgrades to the road network generated by growth in background traffic and by this Master Plan. The modelling shows that background traffic growth and traffic generated by development within and surrounding the Airport will result in more traffic passing through intersections along Milperra Road, Henry Lawson Drive and Edgar Street.

The timing and triggers for upgrade works in this Ground Transport Plan will depend on the scale and location of development at the Airport, and continued discussions with RMS, TfNSW and Canterbury-Bankstown Council.

Most of the upgrade works identified to 2024 in Section 9.5 are required to cater for existing traffic and growth in background traffic for the study area surrounding the Airport.

The additional upgrade works generated by this Master Plan involve augmenting lanes and lane extensions, at access points to Milperra Road and to Henry Lawson Drive, into the upgraded configurations that would otherwise be required.

Road widening, and a number of intersection upgrades have been identified as being required in the area by 2024. The upgrade locations and improvement details are shown in Figure 10.14 and include:

NEW INTERNAL CONNECTOR ROAD

The key addition to the local network by 2024 is an internal connector road which connects the Milperra Road and Murray Jones Drive intersection and Tower Road (using Starkie Drive), to provide access to the industrial development in the Airport Commercial Zone. This internal connector road effectively creates a partial ring road within the south-west area of the Airport, which can be extended in the future. This would facilitate traffic originating for traffic originating from the east along Milperra Road destined for businesses off Tower Road or off Starkie Drive to avoid passing through congested intersections at Milperra Road, Henry Lawson Drive and Newbridge Road, or Henry Lawson Drive and Tower Road. Re-routing of traffic is expected to alleviate right-turn pressures at these intersections.

INTERSECTION UPGRADES

Traffic growth along Milperra Road, Henry Lawson Drive and Edgar Street will also generate the need for upgrades at a number of intersections, even with re-routed traffic removed from some of the major intersections.

Major intersection upgrades are anticipated to be required at:

- Henry Lawson Drive, Milperra Road and Newbridge Road intersection (off-airport)
- Henry Lawson Drive and Tower Road intersection.

Less significant lane lengthening and widening works are identified for Milperra Road and Murray Jones Drive intersection.

In relation to development in the Commercial Zone, BAL has agreed with RMS that no off-airport road/intersection upgrades are required for the first stage development of the Commercial Zone, which includes site works and initial industrial warehouse development (refer "Development NA-4" in Table 10.3). For this first stage of development, BAL has agreed with RMS to either upgrade or contribute to costs for the roads/intersections at (a) Henry Lawson Drive and Tower Road; and (b) Milperra Road and Murray Jones Drive.

For any future stages of development of the Commercial Zone beyond the initial warehouse, which is anticipated to include industrial/warehouse development and community-based retail in the Gateway Precinct only (refer "Development NA-5" and "Development NA-6" in Table 10.3), BAL will be required to reach agreement with RMS on the required road/intersection upgrades based on the projected additional traffic generation of those proposed developments. Any such agreements with RMS will include the designs and costs of required road/intersection upgrades, and the respective responsibilities for the delivery of the upgrades and related cost contributions.

IMPROVED SIGNAGE

Improved wayfinding signage to direct traffic approaching Murray Jones Drive from Milperra Road (east) to the Commercial Zone will encourage access at this intersection, rather than traffic passing through congested intersections at Henry Lawson Drive, Milperra Road and Newbridge Road, and at Henry Lawson Drive and Tower Road.

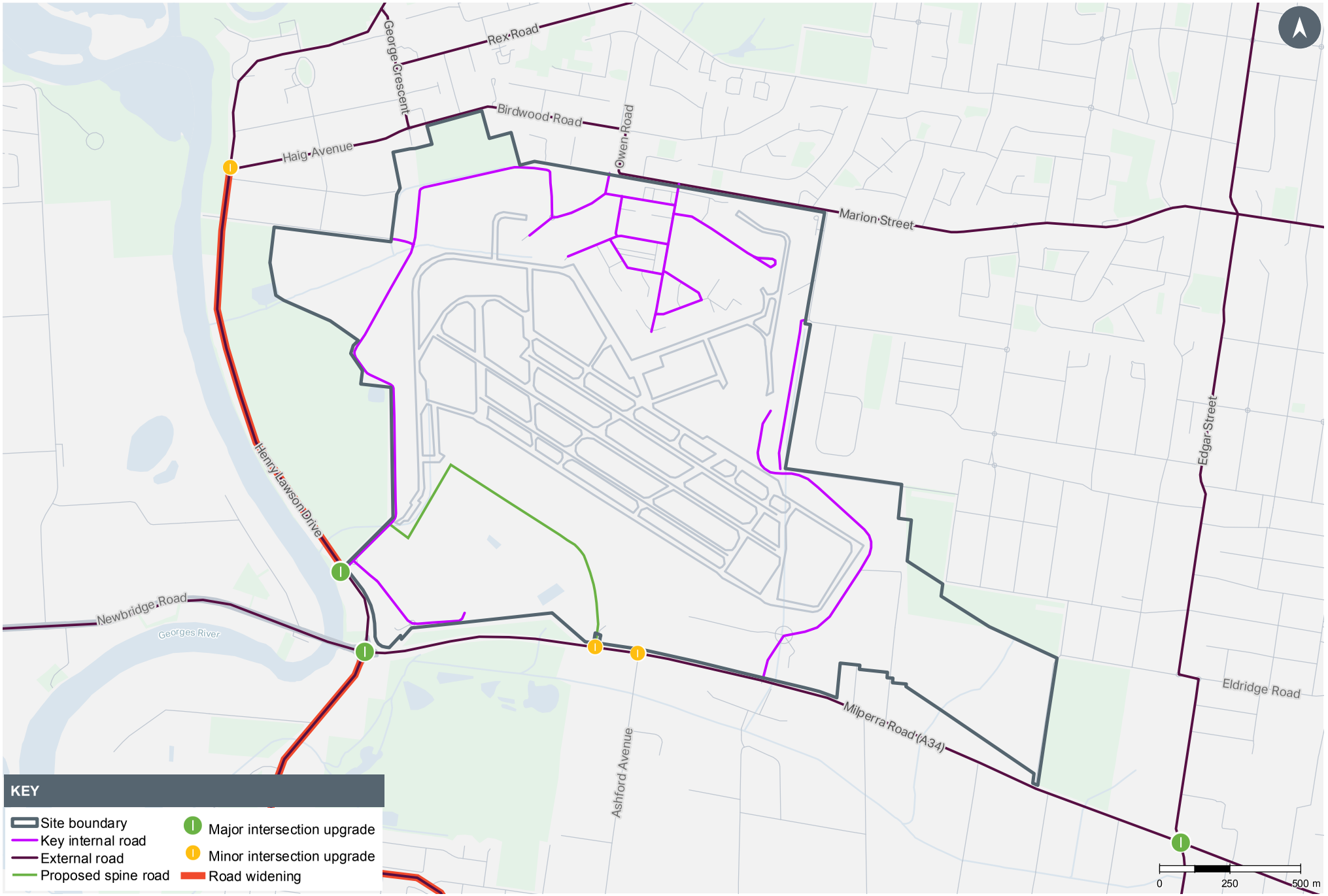


Figure 10.13: 2024 Road Network Plan

PARKING PLAN

There are currently no significant demand pressures on parking supply at the Airport. Parking is provided for each business and development, based on the specific development requirements.

Given the relatively low usage of public transport or walking and cycling for access to the Airport, sufficient parking areas are anticipated to meet the parking demands for each development.

For major developments, BAL will work with RMS, TfNSW and surrounding council to ensure appropriate wayfinding signage is provided to increase the potential for traffic to use the first point of access, rather than circulating on the major road system.

PUBLIC TRANSPORT PLAN

The Airport is currently serviced by two bus routes which traverse Marion Street (Route 905) and Milperra Road (Route M90). Even with the additional development planned at the Airport under this Master Plan 2019, there is unlikely to be sufficient demand to warrant new bus services or increase the frequency of existing services to year 2024.

There is the potential for a bus route diversion for route M90 into the Commercial Zone off Milperra Road, as shown in Figure 10.14. Any route modifications would require consultation with TfNSW and would depend on the level of anticipated demand from new development in the Commercial Zone, and whether this is of sufficient benefit to offset the travel time impact to other users already on M90 services.

2024 ACTIVE TRANSPORT PLAN

The active transport improvements under this 2024 Active Transport Plan are summarised in Figure 10.14.

There is potential to increase the proportion of walking and cycling trips to and from the Airport compared with increasing public transport usage. This is due to the proportion of the working population residing within the potential walking and cycling catchments of the Airport.

Well connected and separated infrastructure is a key determinant in the decision to walk or cycle to work. Major improvements to create shared paths and footpaths within and surrounding the Airport are proposed. Such improvements will require further consultation with local government and TfNSW.

These new connections are intended to leverage the accessibility of bus stops on Marion Street and on Milperra Road by providing direct and continuous footpaths to these facilities. In addition, a shared cycleway and footpath is proposed across the site frontage along Milperra Road, connecting the Henry Lawson Drive intersection to the regional path that runs from north to south, west of Milperra Road.

A new connection for pedestrians and cyclists could be designed from Nancy Ellis Leebold Drive to Wackett Street, completing a missing link to provide walking and cycling access around the entire perimeter of the Airport.

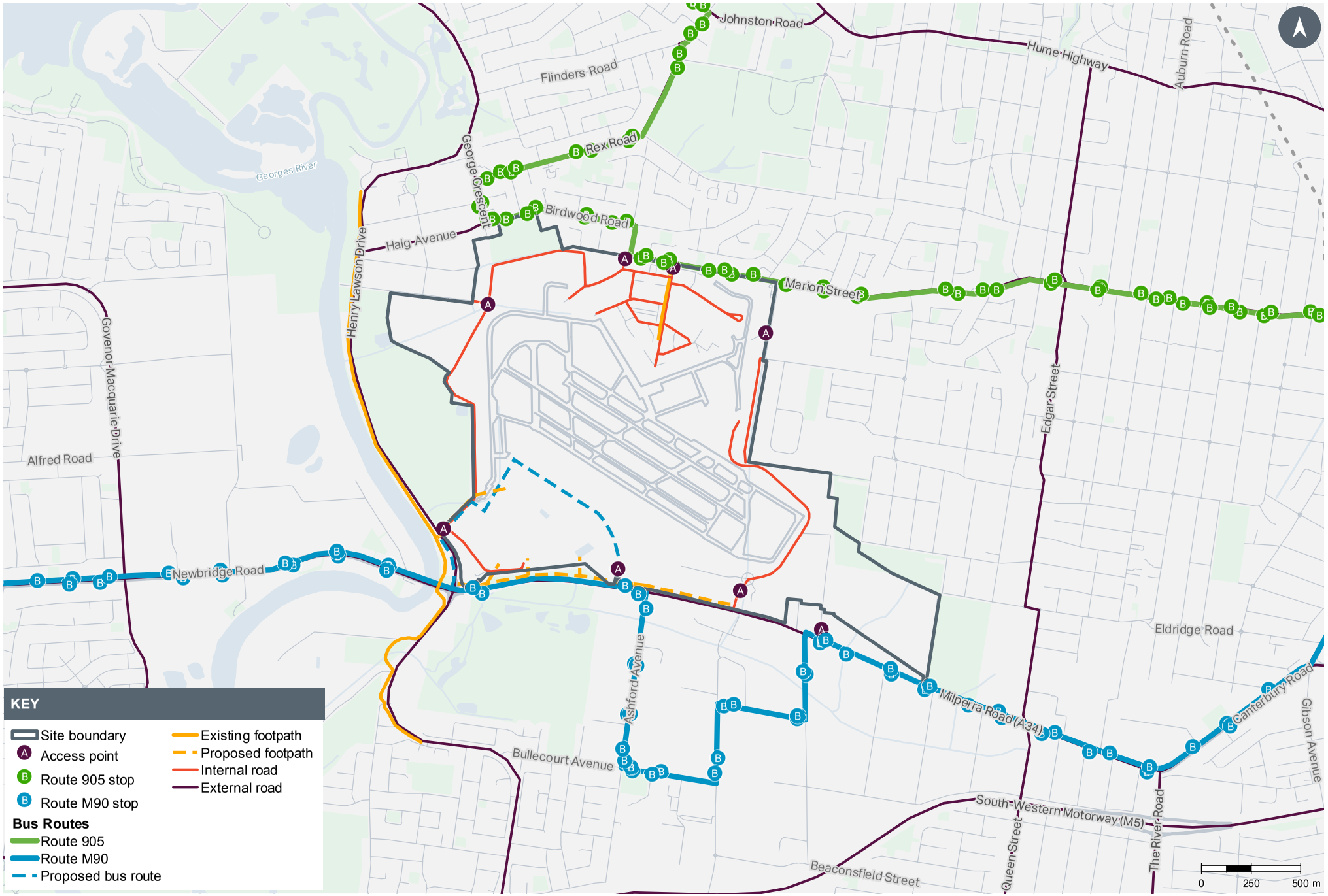


Figure 10.14: 2024 Public and Active Transport Plan

10.6 20 YEAR GROUND TRANSPORT STRATEGY

Transport infrastructure over the long-term, cannot be predicted with certainty. The timing and scale of land use development within the Airport will impact such transport infrastructure.

A number of factors, including development intensification (both on and around the Airport), emerging technologies, autonomous vehicles, the sharing economy and disruption in the transport sector, will influence the nature of demand. Shopping behaviours, air and road freight, distribution and logistics changes, will influence volumes, sizes and arrival patterns of vehicles to the Airport.

Similarly, key transport supply unknowns include the location for any preferred alignment, stations and timing for the extension of Metro Southwest from Bankstown to Liverpool, and the timing of major road upgrades, such as the Henry Lawson Drive corridor, which are anticipated to be required by 2039.

Accordingly, flexibility and resilience are key themes which have been embedded into the 20 year transport strategies. Given the scale of these uncertainties, the strategies presented in the following sections identify issues and opportunities for further consideration over time as planning around the Airport evolves.

The Land Use Plan (see Chapter 8.0) provides an indication of the types of uses that are to be developed within the Airport over the planning horizon for this Master Plan:

- The Commercial Zone is anticipated to continue to develop with warehouse and light-industrial uses. Initial development of this area is anticipated in the first five years with access provided by Milperra Road and connections towards the M5 interchanges
- Further intensification of business office and aviation education uses is envisaged in the Airport Business Zone. The scale and rate of this development is variable, and may be influenced by transport accessibility and the future of the proposed Metro Southwest rail line
- Development within the Aviation Zone is not expected to generate significant ground transport demand.

ROAD NETWORK STRATEGY

The 20 year Road Network Strategy includes the following:

- **Milperra Road** and its intersections in the vicinity of the Airport are expected to continue to be heavily utilised over the next 20 years with increasing congestion a likely consequence. There are no major upgrades planned for Milperra Road. The Milperra Road-Newbridge Road corridor is already six lanes wide and it would be impractical to widen this road further. Major intersections along Milperra Road also incorporate either single or dual-lane turn pockets. Over time, it is expected that additional turn pockets, or lengthening of existing turn pockets will be required at intersections with Milperra Road to accommodate increasing turning volumes for access to development along its length, including development on the Airport. RMS does not have any major upgrade works funded or planned for Milperra Road.
- **Henry Lawson Drive** is the primary north-south road located mid-way between the Bankstown CBD and Liverpool CBD. It is a relatively large catchment area for a single north-south distributor road, particularly as it has a single lane in each direction for much of its length between the M5 and the Hume Highway. There is a compelling rationale to double the capacity of Henry Lawson Drive between the Hume Highway and the M5 to four lanes to cater for growing north-south traffic. The network benefits of this upgrade would be significant. RMS has no funding commitment or planning for the upgrade of Henry Lawson Drive to four lanes between Milperra Road and the Hume Highway.
- **Marion Street** is expected to have sufficient capacity in its current form and would be unlikely to require any upgrades – even with some additional development within the Aviation Business Zone. Over the 20 year Master Plan period, the upgrade of the intersection at Marion Street and Airport Avenue to a signalised form, may be required to respond to the proposed future Metro Southwest rail line.

AIRPORT 'RING ROAD'

Within the Airport and its immediate surrounds, implementation of a ring road would provide the following benefits:

- Allow traffic moving between the three zones at the Airport to do so without having to use the broader external road system
- Allow traffic to egress the major road system at the first opportunity to access the Airport, rather than circulating on major roads impacting major intersections unnecessarily.

The eastern part of this ring road system could, subject to design and agreement with stakeholders and relevant authorities, provide benefits to the broader road network by introducing another north-south link between Milperra Road and Marion Street. This link, if feasible, could reduce demand on Edgar Street and Henry Lawson Drive as traffic volumes increase, given the limited north-south connections between Bankstown CBD and Liverpool CBD.

ON-SITE PARKING

Given the nature of development envisaged at the Airport, site-specific parking is expected to continue as compared to constructing common commercial parking facilities. However, should the Metro Southwest project extend along the northern border of the Airport, there is the potential for 'park and ride' facilities to be established. Parking at each development would be provided at rates consistent with Canterbury-Bankstown Council's planning requirements until there is a significant change in public transport options to the Airport.

PUBLIC TRANSPORT IMPROVEMENTS

The NSW Government has identified the potential extension of the Metro Southwest from its proposed interim terminus in the Bankstown CBD to a new terminus in the Liverpool CBD. While the alignment of this route has not yet been planned, nor have stations been identified, there is a strong case for the alignment to traverse the northern Airport Business Zone, with a station located in this zone.

A new station at the Airport would have significant impact on the development opportunities both in and surrounding the Airport. Accordingly, opportunities to consider a station on the Airport site include:

- Rail corridor protection
- Station location and the surrounding development uplift opportunities
- Rail and bus interchange
- Park and ride facilities
- Holding and marshalling yard or other maintenance facilities for trains.

As the Airport Business Zone in the north of the site intensifies over time there may be sufficient demand generated to re-route the 905-bus service via Airport Avenue, or to add additional bus services. Similarly, as more development occurs in the Commercial Zone in the south, the demand to re-route the M90 through the internal connector road may increase, with the potential to provide additional bus services.

Over time, and with more north-south regional demand, TfNSW may consider introducing another north-south service in the region due to the distances separating the services through Bankstown and Liverpool. The routing of a new service – through a new north-south connection linking Nancy Ellis Leebold Drive to Marion Street – would be beneficial, as compared to via Henry Lawson Drive.

ACTIVE TRANSPORT OPPORTUNITIES

Shared cycle paths and footpaths are anticipated with and surrounding the Airport as trip activity intensifies over time. Attracting more walking and cycling access for trips to and from the Airport is considered to have the greatest potential for reducing private vehicle demands for employment trips over time.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11.0

SERVICES AND INFRASTRUCTURE



11.1 OVERVIEW

BANKSTOWN AIRPORT OWNS AND MAINTAINS AN EXTENSIVE NETWORK OF UTILITIES TO SUPPLY VARIOUS OPERATIONS AND FACILITIES ACROSS THE SITE, AND INCLUDES POWER, WATER, SEWER, NATURAL GAS, TELECOMMUNICATIONS AND STORMWATER. THE AIRPORT WORKS CLOSELY WITH VARIOUS EXTERNAL UTILITY AUTHORITIES TO ENSURE THAT THESE ESSENTIAL SERVICES ARE AVAILABLE IN SUFFICIENT QUANTITY AND RELIABILITY TO SUPPORT AIRPORT OPERATIONS.



The Airport is committed to investing in services infrastructure with the objectives of:

- Improving reliability and redundancy in utility networks
- Improving the sustainability of the supply arrangements
- Continuing to support growth projected to occur at the Airport.

The Airport is currently undertaking a strategic review of its services infrastructure networks to inform how to most efficiently deliver on these objectives.

In addition to increasing the capacity of trunk supply arrangements, demand management and alternative supply arrangements will play a key role in ensure that utility networks efficiently and sustainably support Airport growth.

11.2 SERVICES

11.2.1 ELECTRICITY

EXISTING INFRASTRUCTURE

The power reticulation system within the Airport boundary is predominately owned and managed by BAL. There are connections to the Ausgrid 11kV supply at various locations along the site boundary via padmount kiosk substations and subsurface transformers.

The Airport is serviced from the external Ausgrid network from two zone substations as shown in Figure 11.1 as follows:

- Bass Hill Zone 33kV Substation (Airport Business Zone) supplied from the Ausgrid Inner Metropolitan transmission system
- Milperra Zone 132kV Substation (Commercial Zone) supplied from the TransGrid Sydney South Bulk Supply Point.

There are currently four existing Ausgrid Low Voltage padmount substations and subsurface transformers servicing the Airport in the Airport Business Zone. These transformers are each supplied by two 11kV feeders (PA11 and PA8) originating from the external Bass Hill 33kV Zone Substation.

In addition, four existing Ausgrid Low Voltage padmount substations and subsurface transformers service the Commercial Zone of the Airport. These transformers are each supplied by 11kV feeders (PA17, PA26 and PA2) originating from the external Milperra Zone 132kV Substation.

NETWORK DEVELOPMENT

BAL proactively consults with Ausgrid to provide ongoing information on development proposals at the Airport to ensure that associated demands can be provided from the external network.

Ausgrid has confirmed that the forecast future demand from proposed development can be supplied from its Milperra Zone substation network which currently supplies the Commercial Zone. It is envisaged that this supply may require new feeders to be laid from zone substations to the site, depending on the timing of additional connection requirements.

In addition, the internal Airport electricity network will need to be expanded, particularly to reticulate the supply originating from Milperra Zone to the north of the Airport. Additional kiosk substations and medium voltage reticulation will be required to supply individual developments at the Airport.

Critical aviation infrastructure on the Airport is provided with back-up generation capacity. This back-up generator capacity is in line with CASA and ICAO requirements, and will continue to be supported as development occurs on the Airport.

BAL recognises the significant potential for management of demand for additional electrical capacity through energy saving measures, alternative supply arrangements and other sustainability initiatives. BAL will consider these as part of future development on the Airport. In particular, BAL is currently investigating the feasibility of delivering solar generation on the Airport to augment the mains electrical supply.

11.2.2 POTABLE WATER

EXISTING INFRASTRUCTURE

Potable water is supplied to the Airport from the external Sydney Water Network from the Prospect Water Filtration Plant and Kurnell Supply System via Potts Hill Water Pumping Station. The site is connected to the Sydney Water Network at a number of locations on the boundary, including at:

- Rabaul Road through to Airport Ave, which services the north-western and eastern Airport areas
- Allingham Street, which services a portion of the north-eastern Airport area
- Milperra Road, which services the south-eastern Airport area
- Tower Road, which services the south-western Airport areas (including existing buildings on Henry Lawson Drive and Tower Road).

The existing on-site reticulation network consists of several smaller sized pipes ranging from 25mm to 100mm in diameter.

NETWORK DEVELOPMENT

BAL has consulted with Sydney Water to ensure that increased demand for potable water from development on the Airport can be supplied from the external network. Sydney Water has advised that the preferred servicing strategy for water to be supplied from the existing main on Newbridge Road/Milperra Road.

Ongoing consideration of the broader area and assessment of upgrades to existing systems is required, and BAL is working with Sydney Water to undertake this study to ensure that servicing arrangements to the Airport is optimised.

The on-site reticulation network will similarly be augmented to meet the needs of new development and points of supply to the Airport provided by Sydney Water. BAL recognises the significant potential for management of demand for additional potable water supply through water saving measures and other sustainability initiatives, and will consider these as part of future development on the Airport.

It is anticipated that part of the non-potable component of the water demand of new development can be met by providing on-site rainwater tanks or stormwater reuse. As part of network development at the Airport, emergency and firefighting requirements for all areas of the Airport will be accommodated.

11.2.3 WASTEWATER

EXISTING INFRASTRUCTURE

Wastewater infrastructure servicing the Airport's private wastewater network is owned and maintained by Sydney Water, forming part of the network that ultimately discharges to the Malabar Wastewater Primary Treatment Plant.

The sewer network on-Airport comprises a range of gravity mains, pump stations and rising mains, connected to the external Sydney Water network at a number of locations, including:

- Sydney Water Pumping Station SPS0406 – located off Henry Lawson Drive
- Sydney Water Pumping Station SPS0400 – located off Wackett Street
- Sydney Water Pumping Station SPS0355 – located off Sheridan Close.

The Airport is also traversed by a major 2.5 metre diameter trunk main across the north-east and south-east Airport areas, although the Airport facilities do not directly connect to this trunk main.

NETWORK DEVELOPMENT

BAL is working closely with Sydney Water to develop a preferred servicing strategy to support future Airport development. Sydney Water has advised that future development would continue to be transferred to the Malabar system through amplification and augmentation to meet the demands of potential developments.

BAL is undertaking a sewer planning and model investigation of the Sydney Water surrounding catchment area network. The aim is to identify an optimised staged network development approach to ensure that proposed development on the Airport is supported. The internal Airport sewer network will be developed in line with this external connection strategy. It is envisaged that a range of gravity sewers, pump stations and rising mains will be required to discharge to nominated points.

BAL recognises the significant potential for management of demand for additional sewer capacity through water saving measures and other sustainability initiatives. The company will consider these as part of future development on the Airport.

11.2.4 GAS

EXISTING INFRASTRUCTURE

Limited gas infrastructure currently exists at the Airport.

There is a substantial gas reticulation network owned by Jemena around the boundary of the Airport. This comprises medium pressure networks in the northern and eastern areas of the Airport, and a secondary main situated on the southern side of Milperra Road.

NETWORK DEVELOPMENT

Consultation with Jemena indicates that gas supply to new developments at the Airport can be provided.

BAL will continue to monitor the growth in demand for gas supply to new development at the Airport, and will work closely with Jemena to ensure that required gas servicing is delivered in an efficient manner.

11.2.5 TELECOMMUNICATIONS

EXISTING INFRASTRUCTURE

Bankstown Airport is currently serviced by Telstra from its optical fibre and conventional cabling network surrounding the Airport. The feed enters the site at the Airport exchange located at the northern area of the Airport. A number of additional connections directly service customers on the Airport.

National Broadband Network (NBN) fibre services are not currently installed at the Airport, however there is detailed planning by NBN for infrastructure to be rolled out in the surrounding area of Bankstown.

There are two NBN technologies available in the Bankstown area, as follows:

- Hybrid Fibre Coaxial (HFC)
- Fibre to the Node (FTTN).

NETWORK DEVELOPMENT

It is expected that future telecommunication supply to the Airport will be provided by NBN.

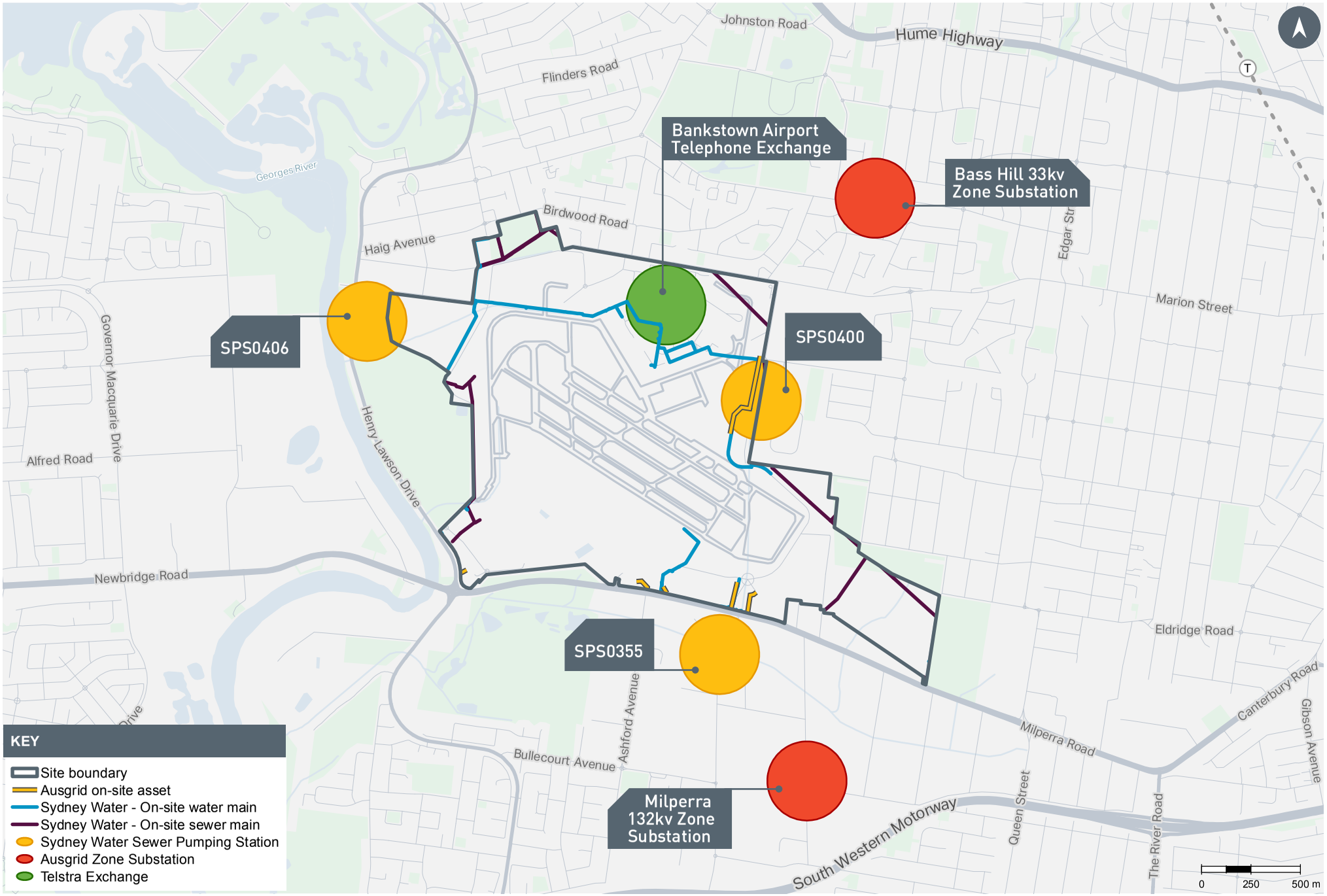


Figure 11.1: Existing Trunk Utilities Plan

11.3 FLOODING AND STORMWATER MANAGEMENT

Flooding and stormwater management at the Airport includes two key flooding contributors:

- Georges River flooding
- Overland flooding.

11.3.1 EXISTING FLOODING CONTEXT

GEORGES RIVER FLOODING

Georges River, located approximately 100 metres west of the Airport, flows in a southerly direction. The catchment upstream of the Airport is approximately 560 square kilometres in area.

Upstream (south) of Campbelltown, the catchment is relatively undeveloped and forested. However, significant clearing for agriculture and urban development has occurred downstream of Campbelltown, in particular, between Liverpool and Bankstown.

Georges River is tidally influenced where it runs near the Airport, with the tidal limit extending upstream to the Liverpool Weir (located approximately seven kilometres upstream from the Airport).

Flooding along the Georges River in the vicinity of the Airport occurs in response to heavy prolonged rainfall over the greater catchment, typically in the order of 24-48 hours in duration. In the vicinity of the Airport, floodwaters surcharge the left (eastern) bank of the river and extend out across Henry Lawson Drive and the relatively low lying floodplain within the Airport and its surrounds.

Backwater flooding from George River also occurs along the Milperra Drain and extends further upstream along the various drainage lines that feed into the drain. Parts of the Airport (along Milperra Rd) are anticipated to be affected by the Georges River for floods at least as frequent as the 20-year Average Recurrence Interval (ARI) – based on findings in previous mainstream flooding investigations (e.g. Bewsher, 2004).

The most recent assessment of Georges River flood behaviour is now relatively dated. This is based on a one-dimensional (1D) MIKE 11 hydraulic model developed as part of technical studies undertaken to inform the Georges River Floodplain Risk Management Study (Bewsher, 2004). The MIKE 11 model relies on inputs dating back as far as the previous Georges River Flood Study by the NSW Public Works Department (PWD) in 1991. These flood models are being updated by Canterbury–Bankstown Council using contemporary two-dimensional (2D) modelling techniques, updated bathymetric and floodplain topographic survey, and include review and possible update of the associated catchment hydrologic inputs. This work is referred to as the Georges River Flood Model Update.

OVERLAND FLOODING

The primary watercourse within the Milperra catchment is the Milperra Drain which flows generally west before joining the Georges River.

The Airport is subject to flooding that occurs following localised rainfall over the site and adjacent developed areas to the north and east, which comprise parts of the suburbs of Georges Hall, Bass Hill, Yagoona and Condell Park. The extent of the sub catchment areas contributing runoff to the various drainage lines that pass through the Airport. All of these subcatchment areas form part of the Milperra catchment.

Canterbury-Bankstown Council has recently finalised flood and flood risk management studies for the Milperra catchment (BMT WBM, 2015 and 2017). Flood behaviour was assessed using TUFLOW software and a linked 1D-2D modelling approach enabling integrated analysis of both surface flows across the catchment and flows within the underground piped drainage network.

Local overland flooding of the Airport and surrounds occurs as a result of short intense rainfall events in the order of two hours duration or less. As noted by BMT WBM (2015), it is unlikely that significant flooding of the local Milperra catchment will coincide with Georges River flooding of the same frequency and magnitude. This is due to the vastly different catchment sizes and different meteorological conditions necessary to generate flood-producing rainfall.

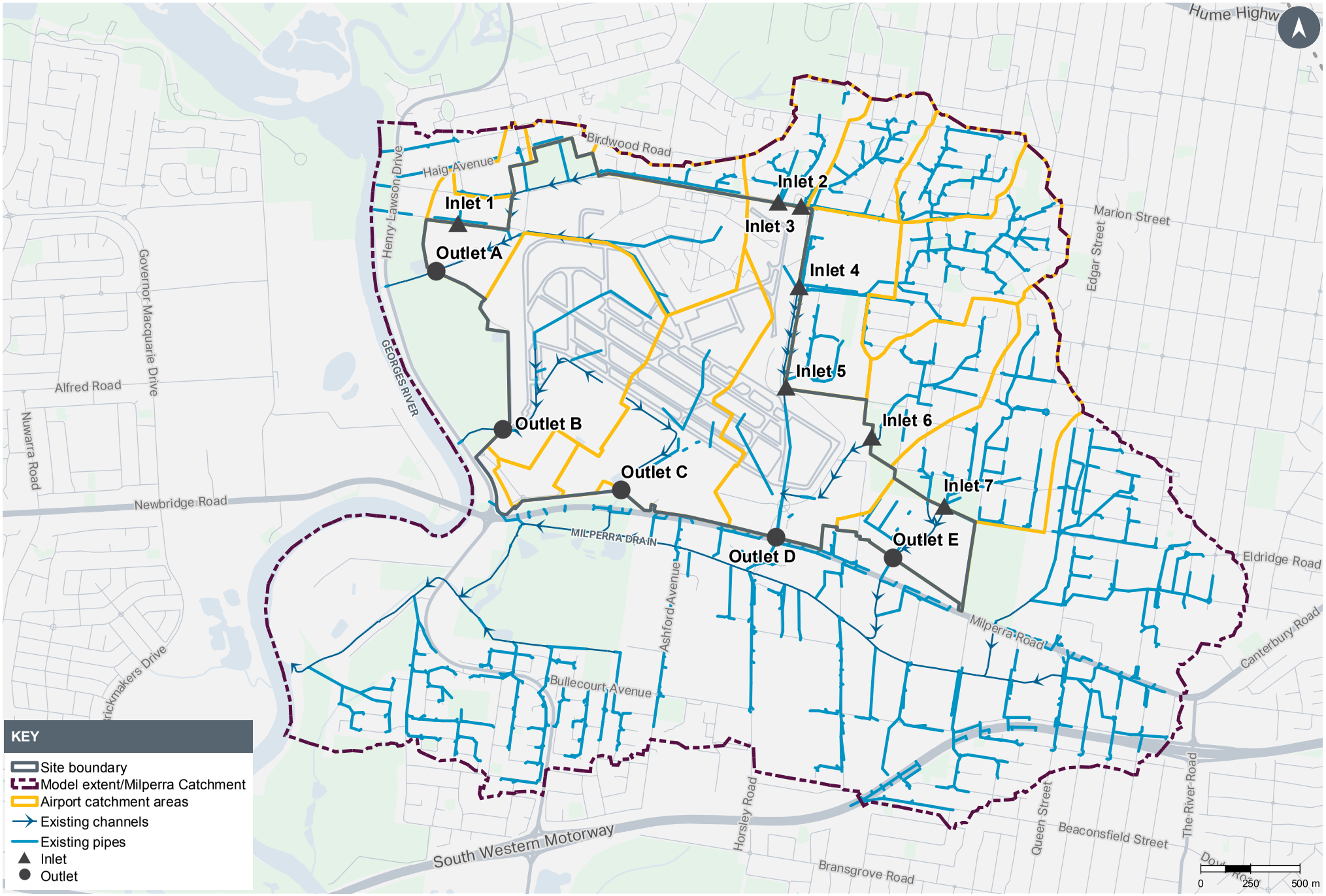


Figure 11.2: Local Catchment Plan and Drainage System

Bankstown Airport forms a large proportion of the catchment area that contributes runoff to the local Milperra Drain, including approximately 50% of the existing open space areas within the catchment However, the Airport also receives runoff from upslope catchments situated to its north and east. These external catchment areas are approximately 300ha – approximately the same size as the Airport shown in Figure 11.2.

BAL has recently worked with Canterbury-Bankstown Council to update its flood model to incorporate additional detail of the topography and drainage infrastructure located at the Airport as part of the Flood and Stormwater Management Strategy.

11.3.2 EXISTING STORMWATER CONTEXT

The Airport has an extensive network of stormwater management infrastructure to convey stormwater flows across the site and towards the outlets. This includes numerous on-site detention (OSD) systems that have been constructed within the Airport over many years to mitigate the impacts of development.

The Airport discharges via five primary outlets directly to either the Georges River (across the Georges River Golf Club) or into the Milperra Drain across Milperra Road to the south shown in Figure 10.2

11.3.3 FLOODING AND STORMWATER MANAGEMENT STRATEGY

BAL has developed a site-wide Flooding and Stormwater Management Strategy in consultation with Canterbury-Bankstown Council. The strategy demonstrates how flooding, stormwater and water quality can be manage through an extensive range of development scenarios.

The overarching objectives of this strategy are to:

- Ensure that any future development within the Airport does not lead to increased adverse offsite flood risk to property and critical infrastructure;
- Ensure that planning controls at the Airport form part of a consistent and coordinated strategy to manage flood risks at the Airport; and
- Achieve relevant water quality objectives and adoption of Water Sensitive Urban Design (WSUD) principles to reduce the load of stormwater pollutants entering drainage lines downstream of the Airport.

The strategy considers three potential sources of development impact, as follows:

1. Main stream (Georges River) flood management outcomes and residual impacts
2. Local catchment flood management outcomes and residual impacts
3. Water quality outcomes.

In addition, the Flooding and Stormwater Management Strategy includes requirements for flood emergency and evacuation strategy.

The strategy is intended to:

- Serve an important engagement function in terms of improving communication, data sharing and collaboration around flooding and stormwater management issues with Canterbury-Bankstown Council
- Form the a basis for agreement with Council on flood management approaches for the Airport site;
- Provide a basis for assessment of future development proposals
- Assist with streamlining development concurrence and approvals through the DITCRD
- Serve as a key input to concurrent Major Development Plan for the Airport's South West Precinct
- Provide an update to the existing flood model for the Milperra local catchment for future use by BAL and Council.

A freeboard of 300mm has been adopted for all new development at Bankstown Airport to ensure development achieves flood immunity from the 100 year ARI flood event. The adoption of a 300mm freeboard for new development within the bounds of the Airport, taking into regard the limits of the Obstacle Limitation Surface will strike a balance between providing flood immunity to aviation operations and commercial/ industrial development on the Airport site and reduce the extent of compensatory floodplain storage works required across the site.

The assessment has shown that the proposed Strategy can avoid any adverse offsite impacts for local catchment flood events up to the 100 year average recurrence interval (ARI).

The key management approaches identified in the Strategy are summarised as follows.

MAIN STREAM (GEORGES RIVER) FLOOD MANAGEMENT OUTCOMES AND RESIDUAL IMPACTS

Development within the Georges River floodplain area requires compensatory floodplain storage to offset filling works up to the peak of a 100-year ARI Georges River flood level of 6.0 m AHD.
In addition to flood storage, maintenance of flood flow capacity through some parts of the Airport is also potentially relevant to minimise adverse impacts on Georges River flood behaviour. This will be assessed using the Canterbury–Bankstown Council's adopted flood model.

LOCAL CATCHMENT FLOOD MANAGEMENT OUTCOMES AND RESIDUAL IMPACTS

Increasing the area of roads, hard stand and roofs within the Airport will result in increased rates of stormwater runoff leaving the site and potentially worsening flooding on downstream property if untreated. Furthermore, re-direction of stormwater flows through internal catchment modifications has the potential to increase discharge rates at the outlets with associated adverse impacts.

These potential impacts are considered in the development design process, and include the temporary detention of stormwater on the Airport using on-site detention (OSD) basins to mitigate these impacts. While OSD and floodplain storage are different concepts, stormwater basins can potentially be configured to provide a dual function to manage both issues.

WATER QUALITY OUTCOMES

The Water Quality Management Strategy at the Airport is designed to achieve the objectives from the Botany Bay Water Quality Improvement Plan. This approach has been identified through consultation with Canterbury-Bankstown Council to achieve consistency with contemporary development within the adjacent Canterbury-Bankstown Council LGA.

The Strategy is based on deployment of bio-filtration devices incorporating vegetated sand filters which provide an efficient means at achieving the pollutant load reduction targets. Other measures will be considered in a case-by-case basis and include gross pollutant traps, grassed swales and filtration devices.

11.3.4 WATER SENSITIVE URBAN DESIGN

Where appropriate, WSUD approaches will be adopted for future development at the Airport to achieve sustainability aspirations, reducing impacts on receiving waterways, and mitigating the increase in demand for potable water.

It is anticipated that rainwater harvesting will be implemented in new developments where there is appropriate demand for non-potable water supply.



12.0

AIRPORT ENVIRONMENT STRATEGY



12.1 OVERVIEW

THIS AIRPORT ENVIRONMENT STRATEGY WILL HELP TO BUILD A CULTURE OF SHARED RESPONSIBILITY FOR ALL ASPECTS OF ENVIRONMENTAL MANAGEMENT ACROSS THE AIRPORT. BAL IS WORKING TO IMPROVE THE ENVIRONMENTAL PERFORMANCE OF THE AIRPORT AS IT BECOMES A CENTRE OF EXCELLENCE FOR AVIATION, COMMERCIAL AND INDUSTRIAL FACILITIES. MOST OF THE AIRPORT HAS BEEN SIGNIFICANTLY MODIFIED SINCE IT WAS FIRST ACQUIRED AS AN AIRFIELD SITE IN 1940; HOWEVER IT CONTAINS AREAS OF ENVIRONMENTAL AND HISTORIC VALUE WHICH NEED TO BE CAREFULLY MANAGED.

12.1.1 PURPOSE

The purpose of this Airport Environment Strategy (AES) is to:

- Establish clear objectives for environmental management at the Airport and maintain and develop systems to achieve required outcomes
- Describe how BAL will fulfil the vision for the Airport, as set out in this Master Plan
- Ensure statutory requirements are complied with
- Build on achievements detailed in the 2014 Airport Environment Strategy (2014 AES).

12.1.2 KEY ENVIRONMENTAL ACHIEVEMENTS

Considerable progress has been made since the development of the 2014 AES in the following areas:

- The Airport undertook all required environmental monitoring and cooperated with relevant government agencies to define, monitor, manage and protect endangered and threatened species on the Airport
- The Environmental Management System (EMS) continued to develop to improve environmental performance across the Airport
- Vegetation maintenance and monitoring of the critically endangered Hibbertia glabrescens MS was undertaken
- Bush regeneration works within Deverall Park which is an area of environmental significance
- Registers to ensure that information is readily available for compliance purposes were maintained
- Engagement with Airport tenants led to increased participation in the environmental auditing process
- The Metro-Flyer e-newsletter was used to communicate with all operators situated on the Airport to inform them of environmental obligations and achievements at the Airport.

12.1.3 CONSULTATION

Key stakeholders were consulted during preparation of this AES, as detailed in Section 2.4. They include the BACACG, Canterbury-Bankstown Council, the NSW Government, DITCRD and Department of Environment and Energy (DoEE). Consultation included a review of this AES by the Airport Environment Officer (AEO) appointed by DITCRD.

12.2 LEGISLATIVE AND POLICY FRAMEWORK

The Airports Act and *Airports (Environment Protection) Regulations 1997* (AEPR) provide a system of regulation and accountability which requires operators of Commonwealth Government leased airports to manage the impacts of airport activities and promote improved environmental management practices. This AES has been prepared in accordance with these requirements:

AIRPORTS ACT

This AES includes the following information required by section 71(2)(h) of the Airports Act:

- Identification of the current environmental status of the Airport, including areas of environmental significance
- Environmental management objectives for the Airport
- Sources of environmental impacts associated with the Airport operations
- Measures to prevent and minimise environmental impacts associated with the operation of the Airport
- Studies, reviews and monitoring of current and future activities including timeframes and reporting
- Details and outcomes of the stakeholder consultation undertaken to prepare this AES.

AIRPORTS (ENVIRONMENT PROTECTION) REGULATIONS

In addition to the Airports Act objectives, the AEPR:

- Sets standards and imposes duties relating to environmental pollution
- Authorises the monitoring and remediation of breaches of environmental standards
- Requires continuous improvement in environmental performance of activities at the Airport

While the AEPR outline major obligations with respect to environmental matters on the Airport, they do not apply to pollution or noise generated by aircraft (except ground-based generated noise). The Commonwealth Government regulates these matters through the *Air Navigation (Aircraft Engine Emissions) Regulations 1995* and the *Air Navigation (Aircraft Noise) Regulations 2018* respectively.

OTHER LEGISLATION AND STANDARDS

The Airport is on Commonwealth Government land and is therefore subject to the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*. The EPBC Act details requirements for managing matters of national environmental significance, such as threatened flora and fauna species, heritage approvals of activities involving Commonwealth Government land and activities by Commonwealth Government agencies.

NSW Government legislation applies where Commonwealth Government legislation is silent. BAL will consider NSW legislation to achieve best practice environmental standards or where there is a risk to off-airport environment.

Industry codes of practice, Australian Standards, relevant national and state environment protection measures and other guidelines are also applicable to operators at the Airport.

12.3 ENVIRONMENT MANAGEMENT FRAMEWORK

The Environment Management Framework as illustrated in Figure 12.1 outlines the policies, programs and activities developed by the Airport to improve the environmental outcomes associated with Airport operations.

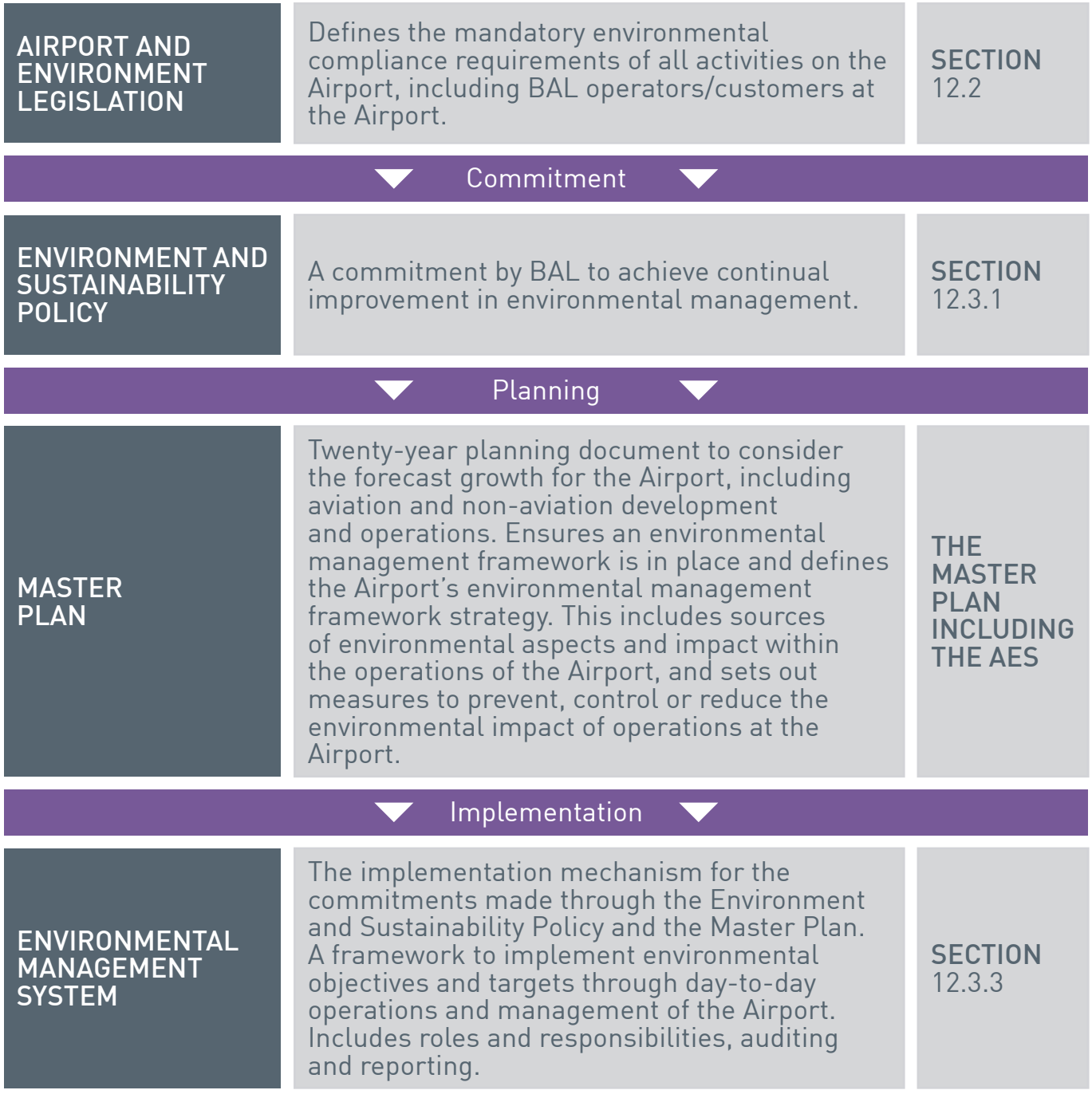


Figure 12.1: Environmental Management Framework

12.3.1 ENVIRONMENT AND SUSTAINABILITY POLICY

BAL is committed to meeting or exceeding compliance with its environmental management objectives through the application of its Environment and Sustainability policy. The policy is provided in Appendix F and is reviewed annually.

12.3.2 ENVIRONMENTAL PLANNING

BAL's objectives, goals and management actions associated with each environmental and sustainability aspect are detailed in this AES. These objectives, goals and management actions have been developed to ensure that BAL meets the commitments stated in the Environment and Sustainability Policy. Objectives and goals for each environmental aspect were developed with consideration of the following:

- The vision for the Airport
- Development objectives
- Environment and Sustainability Policy
- Statutory requirements
- Environmental risk
- Feedback from stakeholders and the community
- Timeframes and resources to undertake required works.

12.3.3 ENVIRONMENTAL MANAGEMENT SYSTEM

The EMS developed and maintained by BAL conforms to the requirements of *AS/NZS ISO 14001:2016 Environmental management systems – Requirements with guidance for use*. It provides a structure for managing environmental impacts on the Airport. An EMS review is undertaken annually and updated to ensure BAL complies with all applicable environmental legislation outlined in Section 12.2. Key elements of the EMS and how they support AES implementation are detailed in the following sections. The EMS consists of plans and procedures to manage the following:

- Inspections
- Monitoring
- Incidents, non-conformances and corrective actions
- Training
- Stakeholder engagement
- Records and document control
- Auditing
- Reporting
- Continuous environmental improvement.

INSPECTIONS

BAL undertakes regular inspections across the Airport to ensure that environment-related issues are identified and addressed in a timely manner. Records of inspections are maintained, and actions raised are completed within agreed timeframes. A responsible person is identified for completing the actions.

MONITORING

BAL undertakes monitoring to comply with statutory requirements, to understand trends, and identify areas where additional focus is required. The environmental monitoring program for the Airport is provided in Table 12.1, and the monitoring procedures are detailed in the EMS.

Monitoring associated with development is detailed in specific Construction Environmental Management Plans (CEMP). Monitoring associated with tenants operations is detailed in their Operational Environmental Management Plans (OEMP).

Monitoring is undertaken by suitably qualified and experienced people. Sample analysis is undertaken by laboratories registered with the National Association of Testing Authorities (NATA) for the specific test method.

BAL reviews monitoring results to identify if any actions are required. Monitoring results are reported to DITCRD and other relevant Commonwealth and NSW Government departments.

The level of monitoring may change as a result of monitoring and changes that occur on or off the Airport.

Table 12.1: Frequency of Environmental Monitoring

Environment Aspect	Frequency
Surface water	Biannual (rainfall dependant)
Groundwater	Annual
Air quality	As required
Noise and vibration	As required
Wildlife (airside)	Daily
Vertebrate pests	As required
Soil and contamination	As required
Resources	**Frequency**
Waste and recycling	6-monthly
Water	6-monthly
Electricity	6-monthly
Fuel	6-monthly
Tenants	**Frequency**
Audits	As required

INCIDENTS, NON-CONFORMANCES AND CORRECTIVE ACTIONS

Incidents (as defined in the Airport's Emergency Management Plan) that occur on the Airport are reported to the Airport Environment and Heritage Manager (AEHM). The AEHM maintains a record, investigates, determines if external notification is required, and followed up to ensure that any corrective actions have been completed.

Non-conformances identified in the course of audits, inspections, monitoring and incidents will be addressed within timeframes agreed between the AEHM and the person responsible for addressing the non-conformance. BAL will subsequently confirm the corrective action has been taken.

TRAINING

BAL provides training for employees in accordance with the Skills Training Matrix detailed in the EMP to ensure the Airport's obligations to comply with statutes and other regulatory requirements are understood, and better environmental outcomes are promoted. At a minimum, the following employee training is conducted:

- EMS awareness
- Applicable statutory and compliance requirements
- General environmental and sustainability awareness relating to the Airport
- Roles and responsibilities.

BAL also provides guidance to Airport tenants to ensure they promote better environmental and sustainability outcomes with their employees.

STAKEHOLDER ENGAGEMENT

BAL communicates proactively with stakeholders about environmental and sustainability matters associated with Airport operations and developments by:

- Reviewing and updating relevant EMS documents
- Undertaking monitoring and reporting to stakeholders
- Undertaking regular reviews of environmental and sustainability performance.

BAL has established a Bankstown Airport Community Aviation Consultation Group (BACACG), which includes representatives from a range of stakeholders including local environmental interest groups. This forum is a means of facilitating communication between the Airport and the community about environmental and sustainability issues.

RECORDS AND DOCUMENT CONTROL

BAL maintains a filing system to ensure that records and documents are controlled and stored in a secure and logical manner. This system encompasses the Environmental Site Register (as required by the AEPR) which includes:

- Correspondence of formal communications with the AEO
- Assessments and reports
- Monitoring results
- Environmental programs
- Details of contamination
- Details of heritage items
- Inspection and auditing records
- Incident reports
- Other environmental and sustainability records.

It is the responsibility of the AEHM to maintain the Environmental Site Register to ensure that all required documentation is readily available.

AUDITING

BAL undertakes two categories of audits, EMS audits and tenant audits. The EMP sets out the annual EMS auditing schedule which the AEHM has responsibility for managing. The purpose of EMS audits is to ensure that compliance requirements are met and that the EMS is effectively implemented and maintained.

Tenants are assigned an environmental risk ranking (Tier 1, 2, 3 and 4) based on the potential for their business activities to cause environmental harm. The risk rankings, which determine the audit requirements of different tenants, are defined in Table 12.2. Guidance is provided in the EMP on determining which tier classification applies to the tenant.

REPORTING

BAL prepares an Annual Environment Report which is submitted to DITCRD in accordance with the AEPR. Information to be provided in the report is detailed in Regulation 6.03, and includes reporting on BAL's performance in achieving the targets identified in the AES.

CONTINUOUS ENVIRONMENTAL IMPROVEMENT

BAL continues to work closely with DITCRD and the AEO to improve environmental performance on the Airport by:

- Implementing the AES management actions and outcomes
- Working with the community and government agencies
- Implementing, reviewing and updating the EMS
- Continuing to identify and update environmental standards
- Undertaking monitoring
- Conducting regular reviews to identify opportunities for continuous improvement.

Table 12.2: Tenant Environmental Risk Rankings Tiers

Tenant Risk Rating	Definition	OEMP Mandatory	Audit Frequency
Tier 1	Potential to cause serious environmental harm	Yes	Annual
Tier 2	Potential to cause material environmental harm	Yes	Annual
Tier 3	Potential to cause environmental nuisance	No	Every 5 years
Tier 4	Operations pose negligible environmental risk	No	As required

12.3.4 RESPONSIBILITIES

BAL has a responsibility to ensure that Airport operations comply with the Airports Act and AEPR to minimise environmental impacts. All BAL employees, tenants and users of the Airport have a responsibility to minimise environmental impacts on the Airport, as defined in the EMP. To ensure the successful implementation of the AES, roles and responsibilities have been assigned are detailed in Table 12.3

Table 12.3: AES Roles and Responsibilities

Role	Responsibility
Chief Executive Officer (CEO)	• Overall environmental performance of the Airport • Reporting to DITCRD • Ensure that adequate resources are made available to manage environmental aspects • Ensure that BAL employees fulfill their environmental responsibilities
Environment and Heritage Manager (AEHM)	• Effectively lead and manage the development and implementation of the AES and EMS • All reasonable steps to be taken to achieve environmental compliance • Oversee environmental monitoring, inspections and audits • Oversee the investigation, corrective action and reporting of any environmental incidents or complaints (in conjunction with respective executive management) • Undertake environmental reporting • Produce any correspondence and documentation necessary for approvals and environmental and sustainability management • Identify and implement environmental training for BAL employees • Manage environmental and sustainability specialist consultants
General Manager - Property and General Manager - Aviation	• Integrate environmental requirements into daily operations • Manage of environmental issues associated with respective operations • Provide employee environmental awareness in consultation with the AEHM • Identify staff training needs in consultation with the AEHM
BAL employees	• Adhere to the EMS • Undertake activities on the Airport in accordance with applicable environmental legislation • Reporting of environmental incidents and complaints • Participation in environmental training and awareness
Tenants and contractors	• Adhere to relevant EMS Procedures and management plans • Undertake work in compliance with applicable environmental legislation • Development and implementation of OEMP and CEMP as required • Participate in site inductions and relevant environmental training and awareness programs • Report environmental incidents, and complaints
Airport Environment Officer (AEO)	• Is authorised under the Airports Act to exercise powers regarding environmental issues conveyed through the legislation. • Ensure management of the Airport environment is in accordance with the Airports Act and Airport Regulations through regular monthly meetings, site inspections, monitoring and reporting

12.4 ENVIRONMENTAL ASPECTS AND IMPACTS

Bankstown Airport is a large general aviation airport supporting a range of aviation and non-aviation businesses that have the potential to cause environmental harm. Accordingly, BAL is responsible for ensuring that environmental impacts are minimised. While the Master Plan has a 20 year horizon, this AES focuses on the actions over the initial five year period and considers the impacts that can reasonably be anticipated from implementing this Master Plan. The environmental aspects managed at the Airport is illustrated in Figure 12.2.

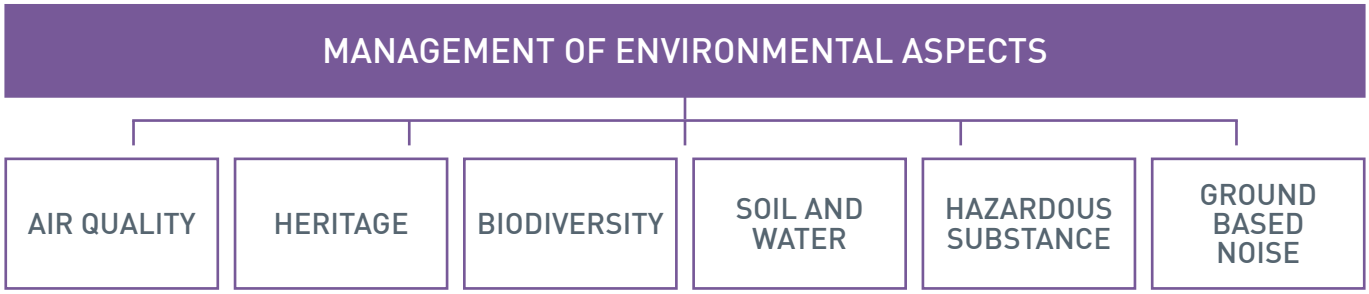


Figure 12.2: Management of Environmental Aspects

12.4.1 AIR QUALITY

Air quality requirements under the Airports Act apply to emissions from ground-based airport activities, such as fuel storage, stack emissions and engine running. Air emissions from flying, taxiing, landing and take-off are governed under the *Air Services Act 1995* and Air Navigation (Aircraft Engine Emissions) Regulations.

BAL has prepared an Air Quality Management Plan which details actions to improve air quality and is reviewed annually. The NSW Office of Environment and Heritage (OEH) also undertakes air quality monitoring in Sydney and the nearest monitoring stations to the Airport are located at Liverpool and Chullora.

The Airport is situated in a highly urbanised environment. Surrounding land uses include commercial, industrial and residential. There are also a number of significant arterial roads, being the Hume Highway, Milperra Road, Henry Lawson Drive and the M5 Motorway which contribute to localised reductions in air quality.

The main sources of emissions from the Airport relate to airport vehicles, dust associated with construction, spray painting stacks and engine testing facilities. Typical pollutants that may be emitted from ground operations include carbon dioxide, carbon monoxide, nitrous oxides, sulphurous oxides, particulates (PM10 and PM2.5), volatile organic compounds and dust from construction.

National air quality standards are defined in the National Environment Protection (Ambient Air Quality) Measure (Air NEPM). The objective of the Air NEPM is to protect human health from poor air quality. The Air NEPM is implemented through the *Protection of the Environment Operations (Clean Air) Regulation 2010*, and is administered by the OEH.

ACHIEVEMENTS

The following achievements have been made at the Airport relating to air quality since the release of the 2014 AES:

- Air Quality Management Plan has been implemented
- Ensured that tenants comply with the Airports Regulations
- The Asbestos Register has been maintained.

IMPACTS

Activities with the potential to impact air quality at the Airport are listed in Table 12.4.

AIR QUALITY OBJECTIVES AND MANAGEMENT ACTIONS

Air quality goals and management actions for the Airport are listed in Table 12.5.

AIR QUALITY MONITORING REQUIREMENTS

Air quality is monitored as frequently as required.

Table 12.4: Activities and Associated Air Quality Impacts

Activities	Potential Impact
Construction and demolition works	• Air emissions, including greenhouse gases and potentially ozone depleting substances • Reduced visibility (mainly from dust) • Public nuisance or health issues • Offensive or concerning odours (e.g. fuel odours)
Vehicle, plant and equipment operation	
General aviation maintenance i.e. spray painting, workshop activities, cleaning etc.	
Fuel storage and refuelling operations	
Landscaping i.e. vegetation maintenance works	
Aircraft engine testing	
Auxiliary power units	
Exhaust stacks	

Table 12.5: Air Quality Objectives and Management Actions

Objectives	
• To comply with the requirements of the Airports Act and AEPR • To appropriately manage Airport operations on developments to minimise impacts on the local air quality	
Management Action	**Timing**
BAL to ensure their plant and equipment is appropriately serviced and maintained	Ongoing
Continue to ensure CEMPs incorporate measures to reduce potential adverse impacts to local and regional air quality associated with construction activities	Ongoing
Review annual tenant NPI reports for those tenants that trigger NPI reporting thresholds	Annual
Undertake air quality monitoring associated with known contaminated sites	As required
Implement Air Quality Management Plan	Ongoing

12.4.2 HERITAGE

The objective of the Heritage Management Plan 2018 (HMP 2018) is to assist BAL, tenants and contractors to manage sites and structures which have heritage value. BAL engaged specialist heritage professionals to prepare a new HMP 2018 for the Airport. This document supersedes the previous Heritage Management Strategy 2005 (HMS 2005) and a Heritage Management Plan 2016 which was drafted but not finalised for implementation. The HMP 2018 provides a comprehensive whole-of-Airport strategy aligned with the objectives of this AES and is implemented as part of the EMS. The management of heritage assets in the context of aviation operations is a central part of the new 2018 HMP.

LEGISLATIVE REQUIREMENTS

A Heritage Management Plan is required by Section 341S of the EPBC Act for places inscribed on the Commonwealth Heritage List (CHL). Schedule 7A of the EPBC Regulations specifies the content of a management plan for Commonwealth Heritage places. The HMP 2018 complies with the EPBC Regulations, which specify the content of a management plan for Commonwealth Heritage places.

The Air Traffic Control Tower is the only CHL-listed place on the Airport and is listed as Place ID #106118. The identified heritage values of the tower are managed under the Bankstown Air Traffic Control Tower No.2, Heritage Management Plan (2017) prepared by Lovell Chen on behalf of Airservices.

Whilst the remainder of the Airport is not on the CHL, BAL recognises its heritage significance and is committed to managing the site in accordance with Commonwealth heritage management principles referred to in Section 341Y of the EPBC Act and Schedule 7B of the *Environmental Protection* and *Biodiversity Conservation Regulations 2000* (EPBC Regulations).

The Airport is listed on one statutory register, this being the *Bankstown Local Environmental Plan 2015* as item #I18

INDIGENOUS HERITAGE

The Airport has been extensively modified since initial preparations in 1940 and the potential for Aboriginal sites and artefacts to be located on the site is considered to be low.

There are no references to Aboriginal sites at the Airport registered with the OEH Aboriginal Heritage Information System (AHIMS). Discussions with representatives of the Gandangarra Local Aboriginal Land Councils (LALC) in 2000 confirmed that Indigenous sites were unlikely.

Proposed future development may be subject to archaeological assessments where appropriate. In particular, an 'Unexpected Finds Protocol' is a requirement of all development applications. Should a relic be discovered during construction, the works will stop in the immediate area and the AEHM will ensure further investigations are undertaken.

NON-INDIGENOUS HERITAGE

The Airport has historical significance as the location of a Royal Australian Air Force station from the 1940s to the 1960s. The Airport has transitioned through a number of significant phases including:

- Military period (1940-1948)
- Department of Civil Aviation (1948-1988)
- Federal Airports Corporation (1988-1998)
- Sydney Airports Corporation Limited (1998-2001)
- Privatisation from 2001 to present day.

Items of significant heritage have been identified in the HMP 2018 which provides for the conservation of these structures. A distinct area of heritage environmental significance is detailed in Table 12.6 and also identified in Figure 12.3.

ACHIEVEMENTS

The following achievements have been made in relation to heritage since the release of the 2014 AES:

- The monitoring of the management by tenants of the Airport properties with heritage value through customer environmental audits.
- A 2016 HMP was drafted for the northern area of the Airport
- BAL has ensured that buildings with heritage values have their heritage management requirements included in the OEMP's when they are leased to tenants
- A new HMP 2018 was prepared for the whole of the Airport.

IMPACTS

Activities with the potential to impact on heritage at the Airport are detailed in Table 12.7.

HERITAGE GOALS AND MANAGEMENT

The heritage goals and management actions for the Airport are listed in Table 12.8.

Table 12.6: Heritage Areas of Environmental Significance

Heritage Aspect	Location	Significance
Airport Control Tower	Aviation Zone: located on the western side of the Airport adjacent Tower Road.	Commonwealth heritage place (Place ID: #106118). Consisting of operating control tower dating from the first phase of post World War II, managed by Airservices.
Chevron area	Aviation Zone: located north of the runways. The chevron created by the pattern of roads, hangars and hardstand fanning out at the southern end of Airport Avenue	Original layout indicating division of functional zones. Holds historic, associative and representative significance. Chevron area is considered the only 'heritage area of significance' at the Airport.

Table 12.7: Activities and Associated Heritage Impacts

Activities	Potential Impact
Modifications to non-indigenous heritage items	• Damage to historic fabric • Loss of heritage value
Construction works impacting indigenous and non-indigenous heritage items	• Damage to unexpected heritage artefact • Loss of heritage value (e.g. impacts on site lines)

Table 12.8: Heritage Objectives and Management Actions

Objectives
• To manage sites and structures of heritage significance in accordance with the requirements of the Airports Act, AEPR and the EPBC Act • Ensure that historic sites and structures are managed appropriately

Management Action	Timing
Implement the Heritage Management Plan 2018	2019
Deliver heritage awareness training for BAL employees and contractors	Ongoing
Prepare CEMP for work on heritage structures and sites to address potential heritage impacts and detail management requirements	Ongoing
Ensure that customers leasing sites and structures having heritage value address the heritage management in their OEMPs.	Ongoing
Undertake environment audit of customers that occupy heritage sites and structures	Ongoing
Asset condition surveys and reporting for all BAL owned assets	Ongoing

12.4.3 BIODIVERSITY

Vegetation at the Airport is limited to open grassed areas, isolated pockets of re-growth shrub and formal landscaped areas. The Airport is home to a number of native and exotic bird species, reptiles, amphibians and mammals.

The Airport is located within a highly urban setting which has developed considerably since the Airport was first constructed. Rapid development continues to occur in the Canterbury-Bankstown Local Government Area, particularly along transport corridors.

FLORA

There are four areas of the Airport which have been identified as having environmental significance as defined by the AEPR. These areas are detailed in Figure 12.3.

BAL engages qualified professionals to prepare and review EMS documents to ensure the Airport's obligations are complied with and areas of environmental significance are managed appropriately.

A flora and fauna survey undertaken in 2017 identified the presence of *Hibbertia fumana* at the Airport. *Hibbertia fumana* is a small shrublet endemic to NSW, and was thought to be extinct when originally described in 2012. In 2016, the species was rediscovered in Moorebank, and a final determination as 'Critically Endangered' under the *Biodiversity Conservation Act 2016* (BC Act) was made in December 2017 (NSW Scientific Committee 2017).

The current conservation status of *Hibbertia fumana* in NSW is listed as Critically Endangered. *Hibbertia fumana* is not currently listed by the Commonwealth Government.

Table 12.9: Areas of Environmental Significance

Species Name	Location	Significance
Hibbertia glabrescens MS	Aviation Zone: located at the western area of the Airport	Listed as 'Critically Endangered' under both the EPBC Act and BC Act. This population of *Hibbertia glabrescens MS* is managed under both a DoEE Permit and a NSW OEH Licence
Hibbertia fumana	Aviation Zone: located adjacent to taxiway E and J in the north western area of the Airport	Listed as 'Critically Endangered' under the BC Act. This population of *Hibbertia fumana* is managed under a NSW Office of OEH licence
Deverall Park Bushland (Cooks River/Castlereagh Ironbark Forest)	Aviation Zone: Deverall Park is located at the eastern area of the Airport	Listed as 'Endangered Ecological Community' under the BC Act.
Acacia pubescens	Airport Business Zone: located along a surface drain adjacent to the Airport boundary in the north eastern area of the Airport	Listed as 'Vulnerable' species under both the EPBC Act and BC Act

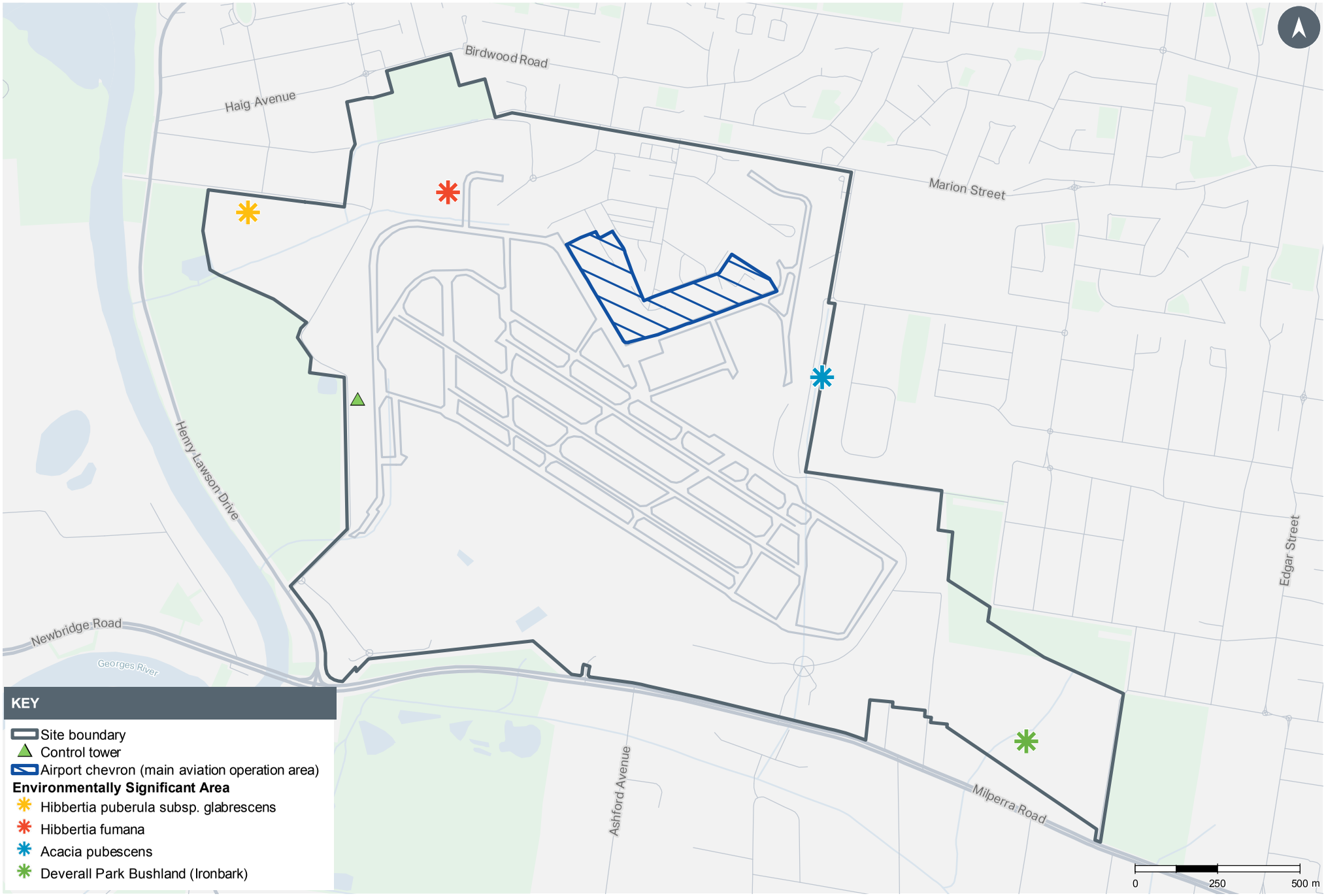


Figure 12.3: Areas of Heritage and Environmental Significance

FAUNA

A Wildlife Management Plan has been prepared to reduce the interaction of birds and aircraft and its impact on aviation operations. The Bankstown Airport DCP provides guidance to ensure the selection of plant species reduces the attractiveness of the Airport to birds. BAL also implements a series of escalating procedures designed to deter birds on the Airport, these include:

- Disturbing birds that land near runways
- Firing loud but non-lethal blasts in the vicinity of birds
- In extreme circumstances, the use of lethal shots to remove one of the birds in a flock is used. This option is a last resort, and is infrequently used.

ACHIEVEMENTS

The following achievements have been made at the Airport in relation to biodiversity since the release of the 2014 AES:

- BAL continued to build strong working relationships with external stakeholders regarding management of native flora and fauna at the Airport
- BAL continued to work co-operatively with relevant government agencies to define, monitor, manage and protect the 'Critically Endangered' *Hibbertia glabrescens*
- Bush regeneration works were undertaken within the Airport.

IMPACTS

Activities with the potential to impact biodiversity at the Airport are detailed in Table 12.10.

BIODIVERSITY OBJECTIVES AND MANAGEMENT

The biodiversity objectives and management actions for the Airport are listed in Table 12.11.

BIODIVERSITY MONITORING AND REPORTING REQUIREMENTS

The biodiversity monitoring and reporting requirements are listed in Table 12.12.

Table 12.10: Activities and Associated Biodiversity Impacts

Activities	Potential Impact
Vegetation removal due to: • Grounds maintenance activities • Construction associated with development • Weed control	• Impact on listed flora species • Loss or fragmentation of habitat • Loss or degradation of foraging or breeding habitat • Reduced native biodiversity • Introduction and spread of weed and animal pest species
Bushfire	Loss of native vegetation and fauna species
• Implementation of fauna management process to deter birds from the Airport • Animal pest control • Vehicle/aircraft movements	Injury to fauna species

Table 12.11: Biodiversity Objectives and Management Actions

Objectives	
• To protect areas of environmental significance • To minimise bird strike by aircraft • To manage areas of environmental significance in accordance with BAL's EMS and Government Permits/ Licences • To facilitate government efforts in preserving and facilitating research of native species identified on the Airport	
Management action	**Timeframe**
Prepare and implement an Airport-wide Flora and Fauna Management Plan that will encompass all current and future documentation to effectively manage biodiversity on the Airport	2020
Undertake vegetation mapping across the whole of the Airport to facilitate vegetation maintenance and also tree replacement associated with development works	2020
Continue to manage areas of environmental significance in accordance with the EMS and Government permits/licences	Ongoing
Utilise Geographical Information Systems (GIS) to facilitate vegetation maintenance, development work and streamline monitoring and reporting requirements	2022
Review the Wildlife Management Plan and incorporate it within the new Flora and Fauna Management Plan	2021
Undertake biodiversity assessments, where required as part of construction works to ensure biodiversity is managed	Ongoing
Prepare Tree Replacement Policy and implement as part of the new Flora and Fauna Management Plan	2019
Work cooperatively with relevant government agencies to facilitate access to the Airport and contribute through the review of management plans to protect species identified on the Airport that are listed as under both the EPBC Act and BC Act	Ongoing
Engage with government to investigate and implement animal pest species control within Deverall Park	2020
BAL will work with the Airport tenants to: • Provide further education on the importance of protecting the species located within the areas of environmental significance • Inform them through the digital newsletter of works associated with protecting species within the areas of environmental significance	Ongoing

Table 12.12: Biodiversity Monitoring Requirements

Species Name	Monitoring and Reporting Requirements	Frequency
Hibbertia glabrescens MS	Detailed in the following: • DoEE Permit issued under the EPBC Act • OEH Biodiversity Licence issued under the BC Act as per relevant permit / licence	
Hibbertia fumana	As detailed in the relevant OEH Biodiversity License issued under the BC Act	
Bushland (Cooks River/ Castlereagh Ironbark Forest)	Detailed in the following: • Bushland Management Plan • Bushfire Management Plan	Annually

12.4.4 SOIL AND WATER

The Airport is situated within the Georges River catchment, which is a major waterway immediately west of the Airport. The Georges River is split into two different sections by the Liverpool weir. The section upstream of the weir is freshwater, while downstream is saltwater and tidal. The Georges River and its tributaries form a vertically well-mixed estuary with waters in the lower reaches having essentially marine salinities. The Georges River makes its way through heavily urbanised areas of Sydney before discharging into Botany Bay. This river is subject to pollution from urban run-off from both industrial and residential users.

The Airport is also a major feature of the Milperra Drain catchment area comprising roughly 3.1 square kilometres of the total catchment area of 5.1 square kilometres. The catchment area includes the suburbs of Milperra, Condell Park and Georges Hall. Channels within the catchment are largely concrete; however a number of unlined, open watercourses are present on the Airport. Other features of this catchment are the residential areas in the upper reaches and the extensive industrial area along the Milperra Drain to the immediate east of the Airport. The entire Milperra Drain catchment area lies within the catchment of the Georges River.

SOIL QUALITY

Any proposed development will require an assessment of its environmental impacts by BAL. This assessment includes a review of historical land uses, a contamination assessment, and any remediation required. A Site Contamination Register is maintained by BAL and comprises known, potential and remediated sites:

- 'Confirmed' contaminated sites consist of areas where environmental investigations have confirmed soil pollution
- 'Potential' contaminated sites are areas where contamination is suspected because historical activities frequently associated with contamination are known to have occurred, or environmental audits have identified the potential for soil pollution as a result of past practices
- 'Remediated' sites are those where the contamination has been addressed.

Contamination prevention is achieved through activities including:

- **Lease terms:** leases at the Airport incorporate terms and obligations relating to environmental compliance
- **Development control:** all developments on the Airport are subject to an assessment by BAL, and approvals contain conditions to reduce the risk of potential contamination from construction activities
- **Audits and inspections:** The Airport's AEHM and the AEO inspect and assess all Customer sites on the expiry of the lease or a proposed change of land use. The AEO may inspect all tenancies as set out in Section 6.07 of the AEPR. If there is reason to suspect soil contamination may have occurred during the Customer's occupation, a site assessment may be required
- **Reviews:** A lessons learnt exercise is undertaken following incident investigations.

WATER QUALITY

Current and historical activities at the Airport have the potential to impact water quality. The Airport, which comprises seven sub-catchments, is drained via an extensive system of pipelines, box culverts and open drains, which ultimately discharge via seven points on the Airport boundary off-site into either the Georges River directly or via the Milperra Drain. Three discharge points have significant catchments upstream of the Airport. The catchments for these drains include industrial and commercial, as well as residential areas, which have potential to impact the water quality on and off the Airport.

The seven stormwater catchments of the Airport and associated discharge points are identified in Figure 12.4.

A Water Quality Management Plan (WQMP) is implemented across the Airport. The purpose of the WQMP is to provide a broad framework to manage storm and ground water quality at the Airport in accordance with standards defined in the Airports Regulations. The WQMP includes strategies to monitor and manage pollution. Surface water monitoring is undertaken (rainfall dependent) to establish water quality levels of water flowing on and off the Airport.

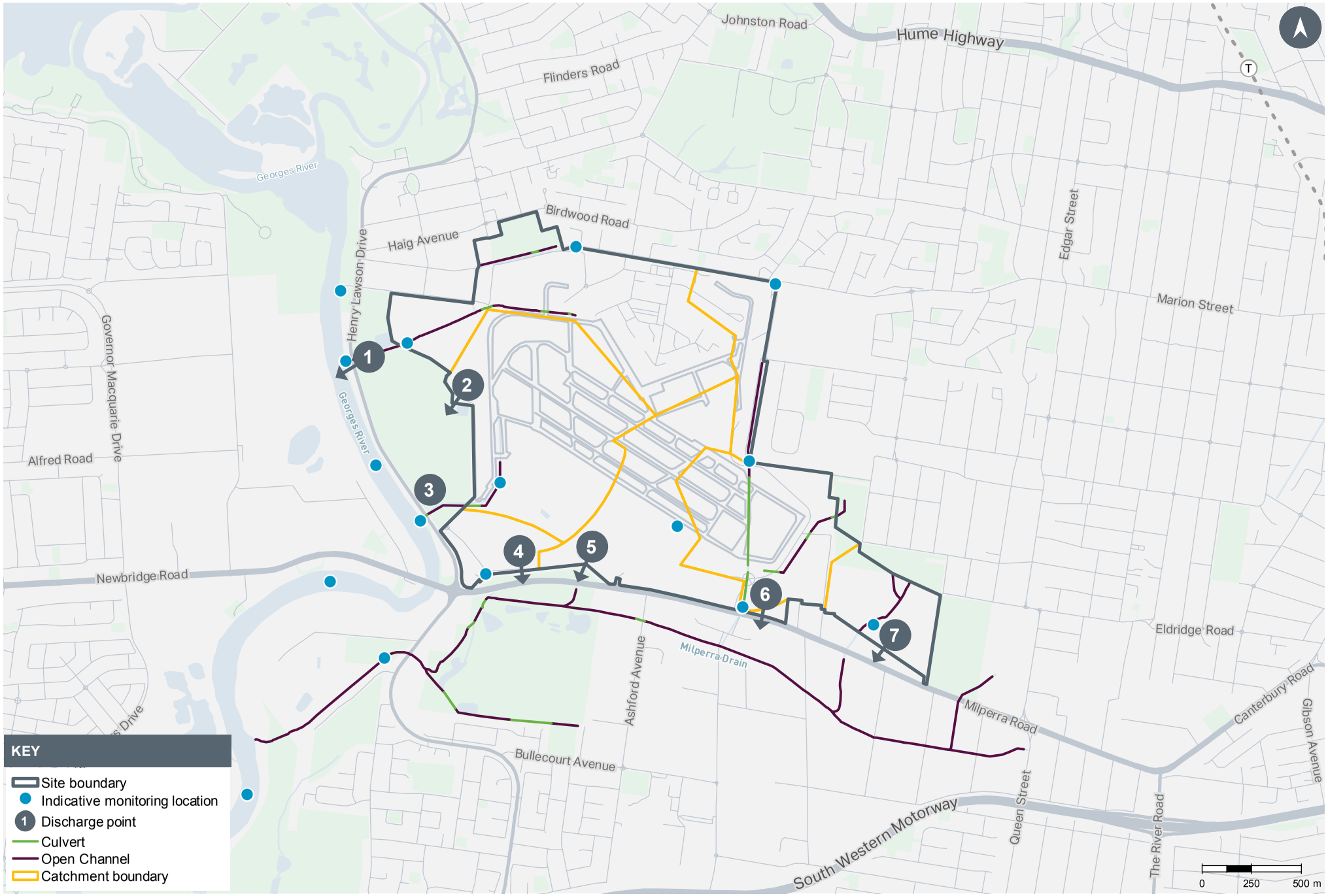


Figure 12.4: Stormwater Catchments and Discharge Points

GROUNDWATER

Groundwater is not used for any purpose at the Airport or immediately down gradient.

The Airport is situated on Ashfield Shale, which is part of the Wianamatta Group of sedimentary rocks in the Sydney Basin. The characteristics of the Ashfield Shale determine the hydrological regime of the Airport area. The shale has negligible primary porosity and permeability. Some secondary permeability exists in fractures within the shale. Groundwater in the shale is generally low in volume and poor (brackish) in quality with concentrations of some metals often occurring at naturally elevated levels. Perched groundwater may exist in localised fill areas overlaying the weathered shale, particularly following rain.

PER-AND POLY-FLURO ALKYL SUBSTANCE

Substances containing Per- and Poly-fluro Alkyl Substances (PFAS) have been detected at the Airport. Although less than 5% of PFAS is contributed to Fire Fighting foam it is one of the reasons it is found on the Airport. PFAS is understood to be in firefighting foams; mainly foams used by the NSW Fire Brigade but this has not been utilised since the early 2000's. Due to the widespread use of PFAS by industry, there is potential that PFAS found at the Airport are from other sources, including those originating off-site.

PFAS are a large group of compounds consisting of a fully fluorinated hydrophobic alkyl chain of varying length (typically four to 16 carbon atoms) and a hydrophilic end group. These are emerging contaminants and their sources, fate and transport and toxicity are still not well understood. Similarly, the regulatory framework for characterising, assessing and managing risks associated with PFAS is in its infancy.

A PFAS National Environmental Management Plan (PFAS NEMP) has been prepared by the Heads of EPA Australia and New Zealand (HEPA), and was endorsed by Environment Ministers on 16 February 2018. It provides guidance on:

- Identifying and implementing site and catchment specific risk management actions
- Assessing sites and methods to address contamination.

The PFAS NEMP also includes a program of future work to address key knowledge gaps relating to the impacts of PFAS on environmental and human health and management options, through longer-term research activities undertaken by HEPA Working Groups.

A number of soil, surface and groundwater investigations and monitoring programs have been undertaken at the Airport, including the analysis of PFAS. BAL will continue to assess and manage PFAS contamination in accordance with relevant government guidelines.

ACHIEVEMENTS

Considerable progress has been made since the development of the 2014 AES to manage impacts on soil and water quality:

- Annual groundwater monitoring and biannual surface water monitoring was undertaken
- Bankstown Airport WQMP continued to be implemented
- Site Contamination Register was continually updated
- The development approvals process resulted in practices which had the objective of preventing soil and water contamination at the Airport.

IMPACTS

Activities with the potential to affect soil and water quality at the Airport are listed in Table 12.13.

SOIL AND WATER OBJECTIVES AND MANAGEMENT

The soil and water objectives and management actions for the Airport are listed in Table 12.14.

SOIL AND WATER QUALITY MONITORING AND REPORTING REQUIREMENTS

The water quality monitoring and reporting requirements at the Airport are listed in Table 12.15.

Table 12.13: Activities and Associated Soil and Water Impacts

Activities	Potential Impact
Aircraft operations including: • Aircraft operators • Aircraft fuel storage and refuelling • Chemical storage • Aircraft washing	Potential for spills entering the soil and stormwater system
Historical land use	Potential for continuing soil and water quality impacts
Construction	• Increase in impermeable areas causing increased run-off into the stormwater system • Spills from construction-related activities entering the soil and surface water
Chemical use (i.e. pesticides, herbicides)	Potential for overspray entering the stormwater system
Connections to stormwater	Water quality impacts
Fuel storage	Leakage from above ground and underground fuel storage tanks
Offsite spill entering stormwater system	Stormwater pollution

Table 12.14: Soil and Water Objectives and Management Actions

Objectives

- To comply with the requirements of the Airports Act and AEPR
- Identify opportunities to improve water quality
- Minimise impacts on water quality from construction
- Prevent pollution from underground fuel storage tanks
- Develop strong working relationships with Government agencies
- Minimise soil pollution

Management Action	Timing
Ensure that opportunities identified to improve water quality are captured in customer audits	Ongoing
Ensure customers meet monitoring requirements	Ongoing
Customers are required to monitor underground fuel storage tanks in accordance with NSW Regulations	Ongoing
Pollution control devices are installed as part of new developments (where required)	Ongoing
Identify opportunities to install pollution control devices in existing storm water infrastructure in accordance with the Flood Management Strategy.	2020
Install pollution controls in existing stormwater infrastructure	2022
Ensure that adequate detail is provided in CEMPs to minimise impacts on water quality	Ongoing
Work co-operatively with relevant government agencies to improve water quality not only on the Airport but areas adjacent to the Airport	Ongoing
Work co-operatively with the relevant Government agencies to manage historic contamination issues on the Airport	Ongoing
Manage the importation of fill material to ensure contaminated fill is not brought onto the Airport	Ongoing
Conduct relevant environmental site assessments for new developments and lease terminations	Ongoing
Work with customers to address contamination identified on their sites	Ongoing
Maintain the Site Contamination Register	Ongoing
Contamination Site Register to be updated	Ongoing

Table 12.15: Water Monitoring Requirements

Aspect	Frequency
Surface water	Biannual
Groundwater	Annual

12.4.5 HAZARDOUS SUBSTANCES

Hazardous substances are used at the Airport on a day-to-day basis and include aviation fuel, chemicals in manufacturing and vehicle fuels etc. The use of these substances is a potential risk to the environment and human health if not managed appropriately.

The Airport and its tenants are required to ensure hazardous materials are appropriately managed in accordance with relevant legislation, standards and codes of practice. Airport tenants are responsible for hazardous substances stored in individual premises.

Hazardous materials are managed in accordance with the NSW *Work Health and Safety Act 2011* and *Work Health Safety Regulation 2011*, and relevant standards and codes of practice, as they are not addressed by Commonwealth legislation.

An Asbestos Register is maintained of all buildings owned by BAL which contain asbestos. These buildings are regularly inspected and materials are removed where they are of high risk or if proposed construction works provide an opportunity to remove the material. It is the responsibility of tenants to manage asbestos in buildings owned by them.

IMPACTS

Activities undertaken at the Airport that are likely to involve hazardous materials are detailed in Table 12.16.

HAZARDOUS SUBSTANCE OBJECTIVES AND MANAGEMENT

The hazardous substance goals and management actions for the Airport are listed in Table 12.17.

12.4.6 GROUND-BASED NOISE

The Airports Act and associated regulations include requirements relating to noise generated from ground-based activities. Noise generated by aircraft while flying, or during landing, take-off or taxing is governed by the *Air Services Act 1995* and is addressed in Chapter 5.

The Airport implements the Aircraft Engine Ground Running Guideline for aircraft operators. The guideline identifies the times and locations where aircraft ground running are permitted. A copy of the guideline is available on BAL's website and is provided to relevant tenants.

BAL has prepared a new Noise and Vibration Management Plan, which incorporates a noise impact assessment for ground based activities at the Airport. A specialist acoustics professional was engaged to undertake noise monitoring and modelling to prepare the noise impact assessment. The assessment will be used to assess noise impacts from proposed future development.

The Airport also ensures that noise and vibration impacts associated with new construction are assessed in accordance with NSW EPA Industrial Noise Policy.

ACHIEVEMENTS

Considerable improvements have been made in the management of ground-based noise impacts at the Airport since the 2014 AES:

- The development assessment process ensured all planned construction activities addressed noise and vibration impacts, having regard to the AEPR and the NSW Industrial Noise Policy
- The Complaint Register was maintained and complaints were addressed in a timely manner
- A new Noise and Vibration Management Plan 2018 was prepared.

IMPACTS

Activities undertaken at the Airport that have the potential to generate noise and vibration impacts on surrounding receivers are listed in Table 12.18.

GROUND-BASED NOISE OBJECTIVE AND MANAGEMENT

The ground-based noise goals and management actions are listed in Table 12.19.

Table 12.16: Hazardous Substance Activities and Impacts

Activities	Potential Impact
Construction, earthworks and demolition	• Human health impacts • Release hazardous substances into the air, water and/or soil
General Airport operations, maintenance, landscaping, weed and pest control etc.	
Aircraft refuelling	
Aircraft and vehicle maintenance	
Manufacturing	

Table 12.17: Hazardous Substance Objectives and Management Actions

Objectives

- To comply with the requirements of the Airports Act and AEPR
- Minimise the use of hazardous substances where practicable
- To ensure the storage, handling and use of hazardous materials is carried out in accordance with the applicable legislation, standards and codes of practice

Management Action	Timing
Monitor availability of up-to-date Safety Data Sheets at points of use during internal and customer audits	Ongoing
Review and update the Asbestos Management Plan and Register	2021
Continue to ensure CEMPs incorporate measures to minimise impacts associated with the storage, handling and use of hazardous materials associated with construction activities	Ongoing
As part of customer audits, work with customers to identify opportunities to replace and/ or minimise the use hazardous substances where practicable	Ongoing

Table 12.18: Noise and Vibration Activities and Impacts

Activities	Potential Impact
Construction and demolition works	Nuisance to receivers situated around the Airport including residents, occupants and visitors
Road traffic at the Airport	
Non-aviation industrial activities	
General maintenance activities at the Airport	
Aircraft servicing	
Aircraft ground running and idling on aprons	
General customer and operator activities	

Table 12.19: Ground-based Noise Objectives and Management Actions

Objectives

- To comply with the requirements of the Airports Act and AEPR
- To minimise noise-related impacts on surrounding receivers from ground-based Airport activities

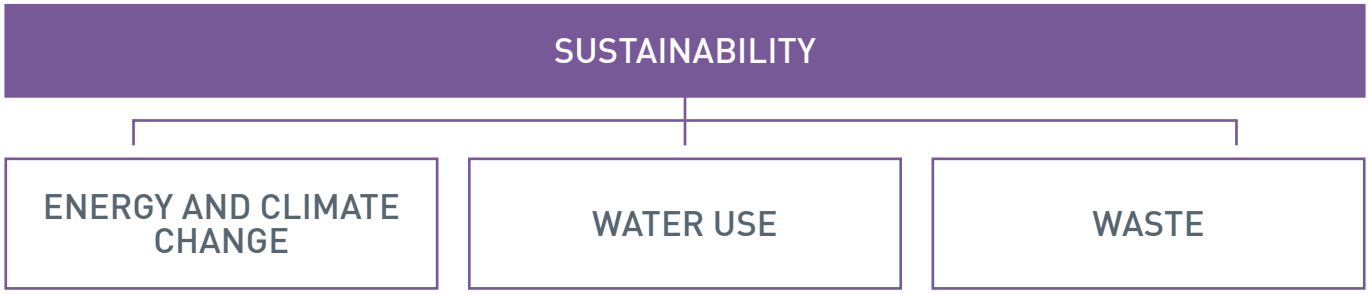
Management Action	Timing
Implement the new Noise and Vibration Management Plan	2019
Continue to implement the Aircraft Engine Ground Running Guideline for the Airport	Ongoing
Respond to noise-related complaints in a timely manner	Ongoing
Maintain an up-to-date Noise Complaints Register	Ongoing
Review and develop educational materials for tenants on how to minimise noise impacts on surrounding receivers from their activities on the Airport	2019
Ensure all construction activities noise and vibration impacts during development planning having regard to the AEPR and the NSW Industrial Noise Policy	Ongoing

12.5 SUSTAINABILITY

The Airport will prepare a Sustainability Strategy over the duration of this Master Plan to guide the minimisation of environmental impacts by Airport users and promote initiatives to reduce climate change. The Airport will continue to identify opportunities to be more sustainable by reducing the use of energy, fuel and water, and by minimising waste. The focus to date has been on identifying sustainability opportunities during:

- Construction/refurbishment activities
- Tenancy environmental audits.

Key elements of the sustainability strategy are illustrated below.



12.5.1 ENERGY AND CLIMATE CHANGE

The Airport is considering ways to minimise the use of energy and maximising its efficiency along with alternative energy supply options for maintenance and development works. The focus is on reducing energy consumption and greenhouse gas emissions from Airport operations. BAL will continue to work with tenants to minimise their impact on the environment and community.

ACHIEVEMENTS

BAL is working towards reducing energy consumption at the Airport and has implemented the following measures:

- Sustainability guidelines were developed for the Airport which included measures to improve energy efficiency and reduce energy consumption
- Energy options for power generation on proposed developments were considered

IMPACTS

Activities that have the potential to increase energy consumption at the Airport are listed in Table 12.20.

ENERGY OBJECTIVES AND MANAGEMENT

The energy goals and management actions for the Airport are shown in Table 12.21.

ENERGY MONITORING AND REPORTING REQUIREMENTS

The energy monitoring and reporting requirements are listed in Table 12.22.

Energy use associated with Airport activities will be tracked every six months and the information used to identify trends and opportunities to reduce its consumption.

Table 12.20: Energy Resource Activities and Impacts

Activities	Potential Impact
Operation of runway lighting	• Carbon emissions • Non-renewable resource depletion
Operation of BAL and tenant owned buildings (i.e. lighting, air conditioners, equipment, refrigeration etc.)	
Operation of electrical equipment	
Construction-related activities	

Table 12.21: Energy Monitoring Requirements

Aspect	Frequency
Energy usage from BAL activities will be tracked to identify trends and opportunities to reduce energy usage	6-monthly

Table 12.22: Energy Objectives and Management Actions

Objectives
• To conserve non-renewable resources through efficient use of energy • Identify and implement opportunities to reduce energy use

Management Action	Timing
Incorporate energy efficiency measures as part of refurbishment and new developments where practicable. For new developments where feasible, principles recognised by authorities on sustainability, for example, the Green Building Council of Australia Green Star rating scheme or National Australian Built Environment Rating System	Ongoing
Investigate opportunities to implement solar initiatives on the Airport	Ongoing
Undertake an energy and carbon audit of Airport operations	2021
Identify opportunities as part of maintenance works to replace lights with more efficient options	Ongoing
Ensure that CEMPs identify opportunities to reduce energy usage during construction-related activities	Ongoing
Educate BAL employees and customers of the importance of conserving energy and resources	Ongoing

12.5.2 WATER USE

The Airport is taking steps to reduce the use of water in operational activities such as manufacturing, aircraft washing, and general maintenance and construction activities.

ACHIEVEMENTS

The following initiatives have been used to manage the level of water consumption at the Airport:

- Development of a Water Savings Action Plan
- Encouraged tenants to use BAL's Climate Change Handbook and adopt sustainable water use practices

IMPACTS

Activities that have the potential to increase water consumption at the Airport are listed in Table 12.23.

WATER OBJECTIVES AND MANAGEMENT

Water goals and management actions for the Airport are listed in Table 12.24.

WATER MONITORING AND REPORTING REQUIREMENTS

The water monitoring and reporting requirements at the Airport are listed in Table 12.25.

Water use from Airport activities will be tracked every six months to identify trends and opportunities to reduce consumption.



Table 12.23: Water Resource Activities and Impacts

Activities	Potential Impact
Customer operations (i.e. toilet flushing, aircraft washing, cleaning, food preparation, manufacturing etc.)	Deplete the potable water resources
BAL operations (i.e. toilet flushing, vehicle washing, general water use, ground maintenance)	
Dust suppression during construction	

Table 12.24: Water Objectives and Management Actions

Objectives	
• To conserve potable water • Identify and implement opportunities to reduce water use	
Management Action	**Timing**
Incorporate water efficiency measures in new developments Where feasible, adopt principles set out recognised authorities on sustainability, for example, the Green Building Council of Australia Green Star rating scheme or National Australian Built ERating System	Ongoing
Investigate opportunities to capture and use rainwater on the Airport where practicable	Ongoing
Ensure BAL's of maintenance activities install efficient equipment to reduce water consumption	Ongoing
Ensure that CEMP's as part of development applications identify opportunities to reduce water usage during construction related activities	Ongoing
Educate BAL employees and tenants of the importance of conserving water through inductions, auditing and general communication	Ongoing

Table 12.25: Water Monitoring Requirements

Aspect	Frequency
Water consumption from BAL activities will be tracked to identify trends and opportunities to reduce water consumption	6-monthly

12.5.3 WASTE

Waste is generated from day-to-day Airport operations, including construction activities. It is the responsibility of the waste generator to ensure their waste is managed and disposed of at an appropriately licensed facility in accordance with NSW legislation.

Regional Illegal Dumping (RID) Squads, which specialise in combating and preventing illegal dumping, have been established in parts of NSW. The Sydney RID Squad covers an area including Canterbury-Bankstown Council area. The Airport works proactively with the Sydney RID squad to address illegal dumping at the Airport.

The Airport has confirmed through tenancy audits that recycling is generally being implemented, and is working with tenants to identify new ways to reduce waste and increase recycling.

The Airport prioritises waste management according to the resource management hierarchy embodied in the *Waste Avoidance and Resource Recovery Act 2001*. The waste management hierarchy is provided in Figure 12.5.

ACHIEVEMENTS

The following achievements have been made in relation to waste and recycling since the 2014 AES:

- Tenants were encouraged to reduce, reuse and recycle their waste through correspondence, environmental audits and awareness programs
- The Airport has worked with the Sydney Regional Illegal Dumping Squad to minimise the frequency of illegal dumping at the Airport.

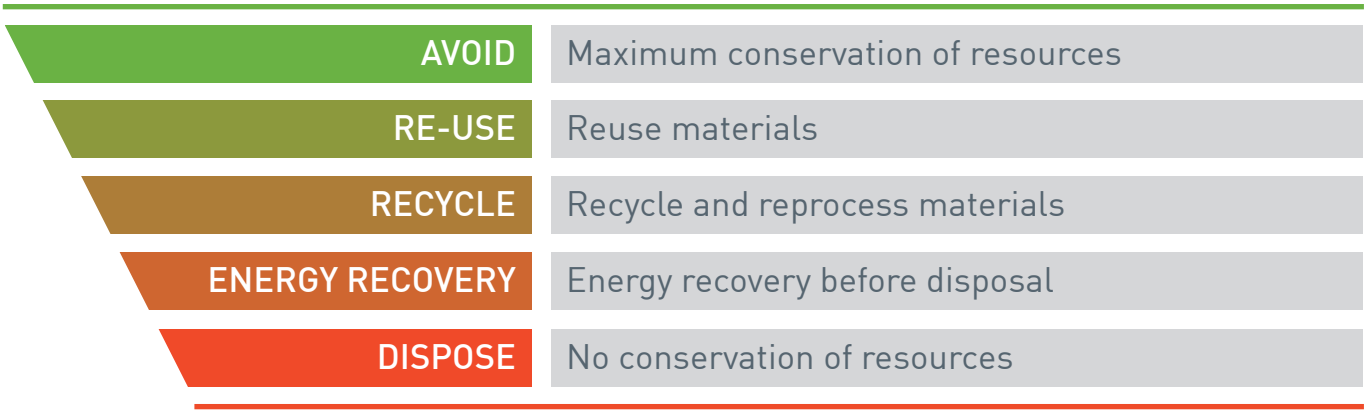


Figure 12.5: Waste Management Hierarchy

IMPACTS

Potential activities on the Airport that may generate waste streams are listed in Figure 12.6.

ACTIVITIES	WASTE STREAM
GENERAL AIRPORT MAINTENANCE	• Vegetation • Oils and grease • Electrical consumables (i.e. wiring, light globes etc.) • Oily rags • Mixed recyclables • Hazardous materials • Scrap materials
AVIATION MAINTENANCE	• Oil and grease • Electrical consumables (i.e. wiring, light globes etc.) • Mixed recyclables • Broken parts • Hazardous materials • Liquid waste (i.e. wash down, parts wash water)
AVIATION AND OTHER BUSINESSES	• Fuel samples • Mixed recyclables • General waste • Wastewater
CONSTRUCTION	• Demolition waste • Movement of contaminated spoil • Contaminated water • Asbestos • Off-cuts • Construction waste • Spoil from earthworks • Hazardous materials
GENERAL OFFICE ACTIVITIES	• Paper/cardboard • Mixed recyclables • Ink cartridges • Putrescible (food) • Unused stationary • Electrical equipment and consumables • Wastewater

Figure 12.6: Potential Waste Streams

WASTE OBJECTIVES AND MANAGEMENT

Table 12.26 provides details on the waste goals and management actions for the Airport.

WASTE MONITORING AND REPORTING REQUIREMENTS

Waste generated by Airport activities will be tracked every six months to identify trends and opportunities to reduce waste being sent to landfill and increase recycling as outlined in Table 12.27.

Table 12.26: Waste Objectives and Management Actions

Objectives	
• Comply with the *NSW Protection of the Environment Operations Act 1997* and the *NSW Protection of the Environment Operations (Waste) Regulation 2014* with respect to waste management • To comply with the principles of the waste management hierarchy of avoid, reuse, recycle and dispose, where practicable • Review options for waste reduction, reuse and recycling and set targets where practicable	
Management Action	**Timing**
Encourage tenants, through correspondence, environmental audits and awareness programs to reduce, reuse and recycle their waste	Ongoing
Ensure that CEMP's provide details on how to maximise the recycling of construction waste from development work	Ongoing
Hold a customer awareness campaign on the opportunities and benefits of effective green purchasing and waste management	2020
Maximise the reuse/recycling of non-hazardous construction/demolition waste for BAL developments on-Airport	Ongoing
Encourage company's undertaking construction works on the Airport to use resources in a sustainable manner to reduce resource use and waste	Ongoing
Investigate opportunities to further reduce, reuse and recycle waste associated with BAL's operations, and develop a Sustainable Procurement Guide for BAL's operations	2020
Ensure that CEMP's provide details on how waste will be managed, classified and disposed of at appropriately licensed waste facilities	Ongoing

Table 12.27: Waste monitoring requirements

Activities	Potential Impact
Waste quantities from BAL activities will be tracked to identify trends and opportunities to reduce waste being sent to landfill and increase recycling.	6-monthly

12.6 SOCIAL AND COMMUNITY

The Airport will continue to engage with its stakeholders about a wider range of environmental matters.

The BACACG is a particularly important mechanism for engaging with community groups to identify and address any issues and concerns. The forum is also an opportunity to provide information about this AES and BAL's commitment to responsible environmental management and sustainability.

Other important stakeholder groups include the local community, Canterbury-Bankstown, Fairfield and Liverpool Councils, State and Commonwealth government agencies.

ACHIEVEMENTS

BAL has engaged proactively and consistently with its stakeholders in the following ways:

- Environmental information was maintained on the website for tenants and the wider community
- The Metro Flyer e-newsletter was produced to provide details on environmental issues and achievements
- BACACG met regularly to identify and discuss environmental matters
- An annual update on environmental activities at the Airport was provided in the Metro Flyer and made available on the Sydney Metro Airports website.

IMPACTS

Activities undertaken at the Airport that have the potential to impact on the community are listed in Table 12.28.

ENGAGEMENT WITH STAKEHOLDERS

Table 12.29 provides details on actions for the Airport to build a strong working relationship with its stakeholders through continued engagement activities.

Table 12.28: Aspects and Social Impacts

Activities	Potential impact
Aircraft movements	• Disturb residents located around the Airport • Damage environment
Vehicular traffic	
Construction works	
Maintenance activities	

Table 12.29: Social Objectives and Management Actions

Objectives

- Maintain strong working relationships with stakeholders to minimise community impacts
- To be open with stakeholders and the community regarding Airport operations
- Maintain strong relationships with tenants to identify opportunities to minimise impacts associated with the operations on the community
- Maintain communication with stakeholders and the community

Management Action	Timing
Produce the Metro Flyer e-newsletter	Ongoing
Hold BACACG meetings	Ongoing
Undertake consultation with stakeholders and community on proposed major developments	As required
Produce and review environmental documentation to ensure that customers review their operations to minimise environmental impacts	Ongoing



A

APPENDIX
ABBREVIATIONS



ABBREVIATIONS

Abbreviation	Name in full
ABC	Airport Building Controller
AEHM	Airport Environment and Heritage Manager
AEO	Airport Environment Officer
AES	Airport Environmental Strategy
Air NEPM	National Environment Protection (Ambient Air Quality) Measure
Airport	Bankstown Airport
Airports Act	Airports Act 1996 (Commonwealth)
Airports Regulations	Airport Regulations1997
ANEC	Australian Noise Exposure Concept
AEPR	Airports (Environmental Protection) Regulations 1997
ANEF	Australian Noise Exposure Forecast
ATCT	Air Traffic Control Tower
BACACG	Bankstown Airport Community Aviation Consultation Group
BAL	Bankstown Airport Limited
Bankstown CTR	Bankstown Airport Control Zone
BC Act	Biodiversity Conservation Act 2016 (NSW)
BDCP	Bankstown Development Control Plan
BLEP	Bankstown Local Environmental Plan
CASA	Civil Aviation Safety Authority
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CEO	Chief Executive Officer
CHL	Commonwealth Heritage List
CHMP	Cultural Heritage Management Plan
CTAF	Common Traffic Advisory Frequency
DITCRD	Department of Infrastructure, Transport, Cities and Regional Development
DCA	Department of Civil Aviation
DCP	Development Control Plan
EMP	Department of Environment
EMS	Environmental Management System
EP&A	Environmental Planning and Assessment (Act 1997 and Regulation 2000)
EPA	Environment Protection Authority (NSW)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
EPBC Regulations	Environment Protection and Biodiversity Conservation Regulations 2000
ERSA	En Route Supplement Australia
EVC	Ecological Vegetation Class
DoEE	Department of Environment and Energy
FAC	Federal Airports Corporation

Abbreviation	Name in full
FSR	Floor Space Ratio
FTTN	Fibre to the Node
GIS	Geographic Information System
GSP	Gross State Product
GSC	The Greater Sydney Commission
GSSIP	Greater Sydney Services and Infrastructure Plan
HEPA	Heads of Environment Protection Authority Australia and New Zealand
HFC	Hybrid Fibre Coaxial
HLS	Helicopter Landing Site
HMS	Heritage Management Strategy
HMP	Heritage Management Plan
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
JAPAT	Joint Airspace and Procedures Analysis Team
LAP	Local Area Plan
LEP	Local Environment Plan
LGA	Local Government Area
LOE	Lane of Entry
MaaS	Mobility as a Service
MDP	Major Development Plan
MOS	Manual of Standards
MTOW	Maximum Take-Off Weight
NASAG	National Airports Safeguarding Advisory Group
NASF	National Airports Safeguarding Framework
NATA	National Association of Testing Authorities
NDB	Non-Directional Beacon
NEMP	National Environment Management Plan
NES	National Environmental Significance
NGERS	National Greenhouse and Energy Reporting Act 2007 (Commonwealth)
NPI	National Pollutant Inventory
OEH	Office of Environment and Heritage (NSW)
OEMP	Operational Environmental Management Plan
OLS	Obstacle Limitation Surface
OSD	On-Site Detention
PANS-OPS	Procedures for Air Navigational Services – Aircraft Operations
PAPI	Precision Approach Slope Indicator

Abbreviation	Name in full
PCF	Planning Coordination Forum
PFAS	Per and Poly-fluro Alkyl Substances
PSI	Preliminary Site Investigation
PWD	Public Works Department
RAAF	Royal Australian Air Force
RAPAC	Regional Airspace and Procedures Advisory Committee
RESA	Runway End Safety Area
RMS	Roads and Maritime Services
RPT	Regular Public Transport
RAP	Registered Aboriginal Party
SACL	Sydney Airports Corporation Limited
SEPP	State Environmental Planning Policy
SHI	State Heritage Inventory
STM	Strategic Traffic Model
Sydney CTA	Sydney Airport Control Area
Sydney CTR	Sydney Airport Control Zone
Sydney TCU	Sydney Terminal Control Unit
TfNSW	Transport for New South Wales
VFR	Visual Flight Rules
WAAF	Women's Auxiliary Air Force
WARR Act	Waste Avoidance and Resource Recovery Act 2001
WQMP	Water Quality Management Plan



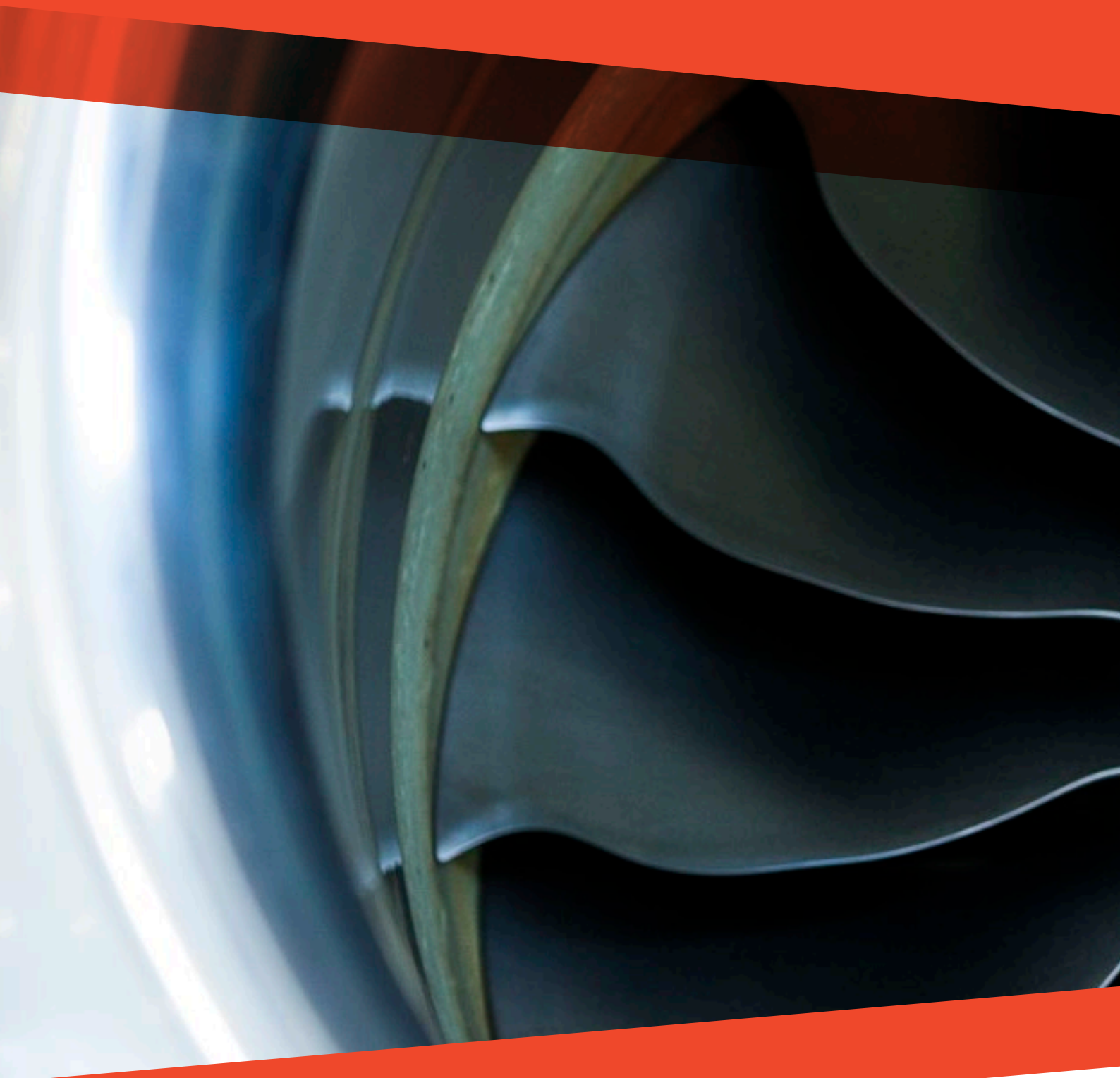
B

APPENDIX
GLOSSARY OF TERMS



GLOSSARY OF TERMS

Term	Definition
Airport Master Plan	The principal planning document required under the Airports Act 1996, setting out a 20 year plan for each leased federal airport.
Aircraft throughput	Equals aircraft demand.
Airservices	The Commonwealth Government agency providing air traffic control management and related airside services to the aviation industry.
Airside	The aircraft movement area of an airport, adjacent to land and buildings that is access-controlled.
Aircraft apron	The part of an airport where aircraft are parked and serviced, enabling passengers to board and disembark and cargo to be loaded and unloaded.
Australian Noise Exposure Concept (ANEC)	A set of contours based on hypothetical aircraft operations at an airport in the future. As ANEC maps are based on hypothetical assumptions and may not have been subject to review or endorsement, they have no official status and cannot be used for land use planning. However, an ANEC can be turned into an ANEF.
Australian Noise Exposure Forecast (ANEF)	A system developed as a land use planning tool aimed at controlling encroachment on airports by noise-sensitive buildings. The system underpins Australian Standard AS2021 'Acoustics – Aircraft noise intrusion – Building siting and construction'. The Standard contains advice on the acceptability of building sites based on ANEF zones. ANEFs are the official forecasts of future noise exposure patterns around an airport and they constitute the contours on which land use planning authorities base their controls.
Civil Aviation Safety Authority (CASA)	An independent statutory body responsible for regulating aviation safety in Australia and the safety of Australian aircraft overseas.
Instrument Landing System (ILS)	A precision instrument approach system which normally consists of the following electronic components: VHF Localiser, UHF Glideslope, VHF Marker Beacons.
Landside	The area of an airport and buildings to which the public normally has free access.
Major Development Plan	A requirement under the Airports Act for airport lessee-companies to provide information to the Commonwealth Government and the public about significant planned development on leased federal airport sites.
South West Precinct	The South West Precinct is defined in the Bankstown Airport Master Plan 2014 as the south-western area of the Airport.
Taxiway	A path on an airport connecting runways with ramps, hangars, terminals and other facilities.
Terminal Instrument Flight Procedures (TIFP)	Procedures to govern flight under conditions in which flight by outside visual reference is not safe. This involves flying by reference to instruments in the flight deck and navigating by reference to electronic signals.



C

APPENDIX
COMPLIANCE WITH AIRPORTS ACT



COMPLIANCE WITH AIRPORTS ACT

The Bankstown Airport Master Plan must be prepared in accordance with the requirements of the Airports Act and associated Regulations.

The legislation specifies elements that are to be addressed within an Airport Master Plan. The tables below should be used to reference how each element of the legislation is addressed within the Master Plan.

Requirements under Part 5, Division 3, Section 70(2) Final Master Plans	Chapter Response
The purposes of a final master plan for an airport are:	
a. to establish the strategic direction for efficient and economic development at the airport over the planning period of the plan	Chapter 1.0
b. to provide for the development of additional uses of the airport site	Chapter 8.0
c. to indicate to the public the intended uses of the airport site	Chapters 8.0 and 12.0
d. to reduce potential conflicts between uses of the airport site, and to ensure that uses of the airport site are compatible with the areas surrounding the airport	Chapters 6.0 and 8.0
e. to ensure that all operations at the airport are undertaken in accordance with relevant environmental legislation and standards	Chapter 12.0
f. to establish a framework for assessing compliance at the airport with relevant environmental legislation and standards	Chapter 12.0
g. to promote the continual improvement of environmental management at the airport	Chapter 12.0

Requirements under Part 5, Division 3, Section 71(2) Contents of Draft or Final Master Plan	Chapter Response
a. the airport-lessee company's development objectives for the airport	Chapter 1.0
b. the airport-lessee company'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 4.0, 6.0, 7.0, 8.0, 9.0, 10.0 and 11.0
c. the airport-lessee company'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 7.0 and 8.0
d. an Australian Noise Exposure Forecast (in accordance with regulations, if any, made for the purpose of this paragraph) for the areas surrounding the airport	Chapter 5.0 and Appendix E
da. flight paths (in accordance with regulations, if any, made for the purpose of this paragraph) at the airport	Chapter 5.0
e. the airport-lessee company's plans, developed following consultations with the airlines that use 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	Chapter 5.0 and Appendix E
f. the airport-lessee company's assessment of environmental issues that might reasonably be expected to be associated with the implementation of the plan	Chapter 12.0
g. the airport-lessee company's plans for dealing with the environmental issues mentioned in paragraph (f) (including plans for ameliorating or preventing environmental impacts)	Chapter 12.0

Requirements under Part 5, Division 3, Section 71(2) Contents of Draft or Final Master Plan	Chapter Response
ga. in relation to the first 5 years of the master plan – a plan for a ground transport system on the landside of the airport that details: viii. a road network plan ix. the facilities for moving people (employees, passengers and other airport users) and freight at the airport x. 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 xi. the arrangements for working with the State or local authorities or other bodies responsible for the road network and the public transport system xii. the capacity of the ground transport system at the airport to support operations and other activities at the airport xiii. the likely effect of the proposed developments in the master plan on the ground transport system and traffic flows at, and surrounding, the airport	Chapter 10.0
gb. in relation to the first 5 years of the master plan - detailed information on the proposed developments in the master plan that are to be used for: xiv. commercial, community, office or retail purposes xv. for any other purpose that is not related to airport services	Chapter 9.0
gc in relation to the first 5 years of the master plan - the likely effect of the proposed developments in the master plan on: xvi. employment levels at the airport xvii. 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	Chapter 9.0
h. an environment strategy that details: xviii. the airport-lessee company's objectives for the environmental management of the airport xix. 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 xx. the sources of environmental impact associated with airport operations xxi. the studies, reviews and monitoring to be carried out by the airport-lessee company in connection with the environmental impact associated with airport operations xxii. the time frames for completion of those studies and reviews and for reporting on that monitoring xxiii. 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 xxiv. the time frames for completion of those specific measures xxv. details of the consultations undertaken in preparing the strategy (including the outcome of the consultations) xxvi. any other matters that are prescribed in the regulations.	Chapter 9.0
i. such other matters (if any) as are specified in the regulations.	

Requirements under Part 5, Division 3, Section 71A Draft or final master plan must identify proposed sensitive developments	Chapter Response
1. A draft or final master plan must identify any proposed sensitive development in the plan.	Chapter 8.0
2. A sensitive development is the development of, or a redevelopment that increases the capacity of, any of the following: a. a residential dwelling b. a community care facility c. a pre-school d. a primary, secondary, tertiary or other educational institution e. a hospital	Chapter 8.0
2A A sensitive development does not include the following: a. an aviation educational facility b. accommodation for students studying at an aviation educational facility at the airport c. a facility with the primary purpose of providing emergency medical treatment and which does not have inpatient facilities d. a facility with the primary purpose of providing inhouse training to staff of an organisation conducting operations at the airport	Noted

Requirements under Part 5, Division 3, Section 79 Public comment or advice to State etc.	Chapter Response
Advice to State etc.	
(1A) Before giving the Minister a draft master plan for an airport under section 75, 76 or 78, the airport-lessee company for the airport must advise, in writing, the following persons of its intention to give the Minister the draft master plan: (a) the Minister, of the State in which the airport is situated, with responsibility for town planning or use of land; (b) the authority of that State with responsibility for town planning or use of land; (c) each local government body with responsibility for an area surrounding the airport.	Commenced
(1B) The draft plan submitted to the Minister must be accompanied by: (a) a copy of the advice given under subsection (1A); and (b) a written certificate signed on behalf of the company listing the names of those to whom the advice was given.	Upcoming action

Requirements under Part 5, Division 3, Section 79 Public comment or advice to State etc.	Chapter Response
Public comment	
(1) After giving the advice under subsection (1A), but before giving the Minister the draft master plan, the company must also: a) cause to be published in a newspaper circulating generally in the State in which the airport is situated, and on the airport's website, a notice: (i) stating that the company has prepared a preliminary version of the draft plan; and (ii) stating that copies of the preliminary version will be available for inspection and purchase by members of the public during normal office hours throughout the period of 60 business days after the publication of the notice; and (iii) specifying the place or places where the copies will be available for inspection and purchase; and (iiia) in the case of a notice published in a newspaper—stating that copies of the preliminary version will be available free of charge to members of the public on the airport's website throughout the period of 60 business days after the publication of the notice; and (iiib) in the case of a notice published in a newspaper—specifying the address of the airport's website; and (iv) in any case—inviting members of the public to give written comments about the preliminary version to the company within 60 business days after the publication of the notice; and (b) make copies of the preliminary version available for inspection and purchase by members of the public in accordance with the notice; and (c) make copies of the preliminary version available free of charge to members of the public on the airport's website: (i) in a readily accessible format that is acceptable to the Minister; and (ii) in accordance with the notice.	Upcoming action
(2) If members of the public (including persons covered by subsection (1A)) have given written comments about the preliminary version in accordance with the notice, the draft plan submitted to the Minister must be accompanied by: (a) copies of those comments; and (b) a written certificate signed on behalf of the company: (i) listing the names of those members of the public; and (ii) summarising those comments; and (iii) demonstrating that the company has had due regard to those comments in preparing the draft plan; and (iv) setting out such other information (if any) about those comments as is specified in the regulations.	Upcoming action
(3) Subsection (2) does not, by implication, limit the matters to which the company may have regard.	Upcoming action

Requirements under Part 5, Division 3, Section 80 Consultations	Chapter Response
(1) This section applies if: (a) an airport-lessee company gives the Minister a draft master plan under section 75, 76 or 78; and (b) before the publication under section 79 of a notice about the plan, the company consulted (other than by giving an advice under subsection 79(1A)) a person covered by any of the following subparagraphs: (i) a State government; (ii) an authority of a State; (iii) a local government body; (iv) an airline or other user of the airport concerned; (v) any other person.	Upcoming action
(2) The draft plan submitted to the Minister must be accompanied by a written statement signed on behalf of the company: (a) listing the names of the persons consulted; and (b) summarising the views expressed by the persons consulted.	Upcoming action

Requirements under Regulation 5.02: Contents of Draft or Final Master Plan - general	Chapter Response
1. For paragraphs 71(2)(j) and (3)(j) of the Act, the following matters are specified in an environment strategy: a. any change to the OLS or PANS-OPS surfaces for the airport concerned that is likely to result if development proceeds in accordance with the master plan b. for an area of an airport where a change of use of a kind described in subregulation 6.07(2) of the Airports (Environment Protection) Regulations 1997 is proposed: i. the contents of the report of any examination of the area carried out under regulation 6.09 of those Regulations ii. the airport-lessee company's plans for dealing with any soil pollution referred to in the report.	Chapter 6.0
2. For section 71 of the Act, an airport master plan must, in relation to the landside part of the airport, where possible, describe proposals for land use and related planning, zoning or development in an amount of detail equivalent to that required by, and using terminology (including definitions) consistent with that applying in, land use planning, zoning and development legislation in force in the State or Territory in which the airport is located.	Chapter 8.0
3. For subsection 71(5) of the Act, a draft or final master plan must: a. address any obligation that has passed to the relevant airport-lessee company under subsection 22(2) of the Act or subsection 26(2) of the Transitional Act b. address any interest to which the relevant airport lease is subject under subsection 22(3) of the Act, or subsection 26(3) of the Transitional Act.	Noted

Requirements under Regulation 5.02A: Contents of Draft or Final Master Plan - to be specified in Environment Strategy	Chapter Response
1. For subparagraphs 71(2)(h)(ix) and (3)(h)(ix) of the Act, the matters in this regulation must be specified in an environment strategy.	Chapter 12.0
2. The environment strategy must specify any areas within the airport site to which the strategy applies that the airport-lessee company for the airport has identified as being a site of indigenous significance, following consultation with: a. any relevant indigenous communities and organisations; and b. any relevant Commonwealth or State body	
3. The environment strategy must specify the airport-lessee company's strategy for environmental management of areas of the airport site that are, or could be, used for a purpose that is not connected with airport operations.	
4. The environment strategy must specify: a. the training necessary for appropriate environment management by persons, or classes of persons, employed on the airport site by the airport-lessee company or by other major employers; and b. the training programs, of which the airport-lessee company is aware, that it considers would meet the training needs of a person mentioned in paragraph (a).	Chapter 12.0

Requirements under Regulation 5.02B: Contents of Draft or Final Master Plan - to be addressed in Environment Strategy	Chapter Response
1. For subsection 71(5) of the Act, a draft or final master plan must address the things in this regulation.	Chapter 12.0
2. In specifying its objectives for the airport under subparagraph 71(2)(h)(i) or (3)(h)(i) of the Act, an airport-lessee company must address its policies and targets for: a. continuous improvement in the environmental consequences of activities at the airport b. progressive reduction in extant pollution at the airport c. development and adoption of a comprehensive environmental management system for the airport that maintains consistency with relevant Australian and international standards d. identification, and conservation, by the airport-lessee company and other operators of undertakings at the airport, of objects and matters at the airport that have natural, indigenous or heritage value e. involvement of the local community and airport users in development of any future strategy f. dissemination of the strategy to sub-lessees, licensees, other airport users and the local community.	Chapter 12.0
3. In specifying under subparagraph 71(2)(h)(ii) or (3)(h)(ii) of the Act, the areas within the airport site it identifies as environmentally significant, an airport-lessee company must address: a. any relevant recommendation of the Australian Heritage Council b. any relevant recommendation of the Department of Environment regarding biota, habitat, heritage or similar matters c. any relevant recommendation of a body established in the State in which the airport is located, having responsibilities in relation to conservation of biota, habitat, heritage or similar matters.	Chapter 12.0
4. In specifying the sources of environmental impact under subparagraph 71(2)(h)(iii) or (3)(h)(iii) of the Act, an airport-lessee company must address: a. the quality of air at the airport site, and in so much of the regional airshed as is reasonably likely to be affected by airport activities b. water quality, including potentially affected groundwater, estuarine waters and marine waters c. soil quality, including that of land known to be already contaminated d. release, into the air, of substances that deplete stratospheric ozone e. generation and handling of hazardous waste and any other kind of waste f. usage of natural resources (whether renewable or non-renewable) g. usage of energy the production of which generates emissions of gases known as 'greenhouse gases' h. generation of noise.	Chapter 12.0
5. In specifying under subparagraph 71(2)(h)(iv) or (3)(h)(iv) of the Act the studies, reviews and monitoring that it plans to carry out, an airport-lessee company must address: a. the matters mentioned in subregulation 5.02A(2) and subregulations 5.02B(3) and (4); and b. the scope, identified by the airport-lessee company, for conservation of b.objects and matters at the airport that have natural, indigenous or heritage value; and c. the approaches and measures identified by the airport-lessee company as its preferred conservation approaches and measures; and d. the professional qualifications that must be held by a person carrying out the monitoring; and e. the proposed systems of testing, measuring and sampling to be carried out for possible, or suspected, pollution or excessive noise; and f. the proposed frequency of routine reporting of monitoring results to the airport environment officer (if any) for the airport, or to the Secretary.	Chapter 12.0
6. In specifying under subparagraph 71(2)(h)(vi) or(3)(h)(vi) of the Act, the measures that it plans to carry out for the purposes of preventing, controlling or reducing environmental impact, an airport-lessee company must address: a. the matters mentioned in subregulations (2) to (4); and b. the means by which it proposes to achieve the cooperation of other operators of undertakings at the airport in carrying out those plans.	Chapter 8.
7. An airport-lessee company, in specifying the company's strategy for environmental management under subregulation 5.02A(3), must address the matters in subregulations (2) to (6).	Chapter 12.0



D

APPENDIX
LAND USE DEFINITIONS



LAND USE DEFINITIONS

BAL has adopted, wherever possible, the definitions used in the NSW Standard LEP Template. Where there are gaps for uses specific to that of an airport, definitions have been provided by BAL.

Table D1.1 Land use definitions

Land use	2019 MP definition	Definition source/alignment
Advertising structures	A structure used or to be used principally for the display of an advertisement.	Standard Template definition applied.
Accommodation for students studying at an aviation educational facility at the airport	A building or place used for accommodation purposes by students studying at an educational facility located at the airport site.	No Standard Template definition.
Airport-related support industry	A building, place or structure primarily used for the purpose of aircraft hangars, aircraft surveillance equipment, security control and screening points, transport terminals; car rental and valet facilities, car parking, fuel storage and distribution, hydrants, storage facilities, catering services, engineering support and maintenance activities, aircraft engine testing and passenger terminals.	No Standard Template definition.
Ancillary	Structures and/or uses that are subordinate or subservient to the dominant structure and/or use. If a component serves the dominant purpose, it is ancillary to that dominant purpose, whereas if a component serves its own purpose, it is not a component of the dominant purpose but an independent use on the same land (a dominant use in its own right). Examples of ancillary uses include: car parking, roads, driveways, utilities, civil works, fire safety equipment, fencing, lighting, landscaping, flood mitigation measures, security, surveillance, monitoring, signage, technical instruments (such as navigational aids and meteorological instruments), facilities with the primary purpose of providing in-house training to staff of an organisation conducting operations at the airport and sleeping quarters / respite facilities (temporary accommodation associated with business operations).	No Standard Template definition.
Aviation educational facility	A building or place used for aviation related education purposes (including teaching), being: a. a school, or b. a tertiary institution, including a university or a TAFE establishment, that provides formal education and is constituted by or under an Act	Definition drawn from the Standard Instrument definition of 'educational establishment'.

Land use	2019 MP definition	Definition source/alignment
Business premises	A building or place at or on which: a. an occupation, profession or trade (other than an industry) is carried on for the provision of services directly to members of the public on a regular basis, or b. a service is provided directly to members of the public on a regular basis, but does not include an entertainment facilities, home business, home occupation, home occupation (sex services), medical centre, sex services premises or veterinary hospital. Note: Business premises are a type of commercial premises — see the definition of that term in this definitions table.	Standard Template definition applied with the exception of red highlighted text below which has been omitted as it is not relevant in the airport site context. A building or place at or on which: a. an occupation, profession or trade (other than an industry) is carried on for the provision of services directly to members of the public on a regular basis, or b. a service is provided directly to members of the public on a regular basis, and includes a funeral home and, without limitation, premises such as banks, post offices, hairdressers, dry cleaners, travel agencies, internet access facilities, betting agencies and the like, but does not include an entertainment facilities, home business, home occupation, home occupation (sex services), medical centre, restricted premises, sex services premises or veterinary hospital. Note: Business premises are a type of commercial premises—see the definition of that term
Car park	A building or place primarily used for the purpose of parking motor vehicles, including any manoeuvring space and access thereto, whether operated for gain or not.	Standard Template definition applied.
Child care facility	A building or place used for the education and care of children of Bankstown Airport users, customers or employees and that provides any one or more of the following: a. long day care b. occasional child care c. out-of-school-hours care (including vacation care) d. preschool care, or e. an approved family day care venue (within the meaning of the Children (Education and Care Services) National Law (NSW) Note: An approved family day care venue is a place, other than a residence, where an approved family day care service (within the meaning of the Children (Education and Care Services) National Law (NSW) is provided. Such a use is a 'Sensitive Use' under the Airports Act.	Definition based on the Standard Instrument definition of 'centre based child care facilities' however has been altered to support airport users and employees.
Club	A building used by persons associated, or by a body incorporated, for social, literary, political, sporting, athletic or other lawful purposes whether of the same or of a different kind and whether or not the whole or a part of such building is the premises of a club registered under the Registered Clubs Act 1976 (NSW).	No Standard Template definition.

Land use	2019 MP definition	Definition source/alignment
Commercial premises	Commercial premises means any of the following: a. business premises (see business premises in this land use definitions table) b. office premises (see office premises in this land use definitions table) c. retail premises (see retail premises in this land use definitions table).	Standard Template definition applied.
Communications facility (non-aviation)	Non-aviation communications facilities means: a. any part of the infrastructure of a telecommunications network, or b. any line, cable, optical fibre, fibre access node, interconnect point equipment, apparatus, tower, mast, antenna, dish, tunnel, duct, hole, pit, pole or other structure in connection with a telecommunications network, or c. any other thing used in or in connection with a telecommunications network.	Based on Standard Template Definition of 'telecommunications facility'.
Community facility	A building or place: a. controlled or operated by a public authority or non-profit community organisation, and b. used for the physical, social, cultural or intellectual development or welfare of the community, but does not include an educational establishment, hospital, retail premises, place of public worship or residential accommodation.	Standard Template definition applied.
Depot	A building or place used for the storage (but not sale or hire) of plant, machinery or other goods (that support the operations of an existing undertaking) when not required for use, but does not include a farm building.	Standard Template definition applied.
Earthworks or engineering works	Works associated with earthworks or engineering works such as flood mitigation works, land reshaping and filling and utility installation.	No Standard Template definition.
Emergency services facility	A building or place (including a helipad) used in connection with the provision of emergency services by an emergency services organisation.	Standard Template definition applied.
Entertainment facility	A theatre, cinema, music hall, concert hall, dance hall and the like, but does not include a pub or registered club.	Standard Template definition applied.
Environmental protection works	Works associated with the rehabilitation of land towards its natural state or any work to protect land from environmental degradation, and includes bush regeneration works, wetland protection works, erosion protection works, dune restoration works and the like, but does not include coastal protection works.	Standard Template definition applied.
Fixed base operations	A commercial business use providing aeronautical services such as fuelling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance, flight instruction, passenger facilitation and passenger accommodation areas for general aviation operators and business charter operators. A fixed base operation is a primary provider of support services for general aviation operators at a public-use airport.	No Standard Template definition.
Function centre	A building or place used for the holding of events, functions, conferences and the like, and includes convention centres, exhibition centres and reception centres, but does not include an entertainment facility.	Standard Template definition applied.
General industry	A building or place (other than a heavy industry or light industry) that is used to carry out an industrial activity.	Standard Template definition applied
Health services facility	A facility with the primary purpose of providing emergency medical treatment and which does not have in-patient facilities.	No Standard Template definition.
Heavy industry	A building or place used to carry out an industrial activity that requires separation from other development because of the nature of the processes involved, or the materials used, stored or produced, and includes: a. hazardous industry, or b. offensive industry. It may also involve the use of a hazardous storage establishment or offensive storage establishment. Note: Heavy industries are a type of industry—see the definition of that term in this definitions table.	Standard Template definition applied.

Land use	2019 MP definition	Definition source/alignment
High technology industry	A building or place predominantly used to carry out an industrial activity that involves any of the following: a. electronic or micro-electronic systems, goods or components b. information technology (such as computer software or hardware) c. instrumentation or instruments of a scientific, industrial, technological, medical or similar nature d. biological, pharmaceutical, medical or paramedical systems, goods or components e. film, television or multi-media technologies, including any post production systems, goods or components f. telecommunications systems, goods or components g. sustainable energy technologies h. any other goods, systems or components intended for use in a science or technology related field, but does not include a building or place used to carry out an industrial activity that presents a hazard or potential hazard to the neighbourhood or that, because of the scale and nature of the processes involved, interferes with the amenity of the neighbourhood. Note.High technology industries are a type of light industry—see the definition of that term in this Dictionary.	Standard Template definition applied.
Hotel or motel accommodation	A building or place (whether or not licensed premises under the Liquor Act 2007) that provides temporary or short-term accommodation on a commercial basis and that: a. comprises rooms or self-contained suites, and b. may provide meals to guests or the general public and facilities for the parking of guests' vehicles, but does not include backpackers' accommodation, a boarding house, bed and breakfast accommodation or farm stay accommodation.	Standard Template definition applied.
Industrial retail outlet	A building or place that: a. is used in conjunction with an industry, and b. is situated on the land on which the industry is located, and c. is used for the display or sale (whether by retail or wholesale) of only those goods that have been manufactured on the land on which the industry is located, but does not include a warehouse or distribution centre.	Standard Template definition applied.
Industrial training facility	A building or place used in connection with vocational training in an activity (such as forklift or truck driving, welding or carpentry) that is associated with an industry, rural industry, extractive industry or mining, but does not include an educational establishment, business premises or retail premises.	Standard Template definition applied.
Industry	Any of the following: a. general industry b. heavy industry c. light industry but does not include: d. rural industry, or e. extractive industry, or f. mining.	Standard Template definition applied.
Instrument Approach Procedure	A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter if a landing is not completed, to a position at which holding or en route obstacle clearance criteria apply.	Airservices, Aeronautical Information Publication Australia

Land use	2019 MP definition	Definition source/alignment
Light industry	A building or place used to carry out an industrial activity that does not interfere with the amenity of the neighbourhood by reason of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, or otherwise, and includes any of the following: a. high technology industry b. furniture manufacturing c. clothing manufacturing d. food production e. plant growing / propagation. Note: Light industries are a type of industry — see the definition of that term in this definitions table.	Standard Template definition used as a base. The red highlighted text below has been omitted as it is not relevant in the airport site context and alternate more relevant examples have been added. A building or place used to carry out an industrial activity that does not interfere with the amenity of the neighbourhood by reason of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, or otherwise, and includes any of the following: a. high technology industry b. home industry. Note: Light industries are a type of industry — see the definition of that term in this definitions table.
Office premises	A building or place used for the purpose of administrative, clerical, technical, professional or similar activities that do not include dealing with members of the public at the building or place on a direct and regular basis, except where such dealing is a minor activity (by appointment) that is ancillary to the main purpose for which the building or place is used. Note: Office premises are a type of commercial premises—see the definition of that term in this definitions table.	Standard Template definition applied.
Public utility undertaking	Any of the following undertakings carried on or permitted to be carried on by or by authority of any Public Service agency or under the authority of or in pursuance of any Commonwealth or State Act: a. railway, road transport, water transport, air transport, wharf or river undertakings b. undertakings for the supply of water, hydraulic power, electricity or gas or the provision of sewerage or drainage services, and a reference to a person carrying on a public utility undertaking includes a reference to a council, electricity supply authority, Public Service agency, corporation, firm or authority carrying on the undertaking.	Standard Template definition applied.
Recreation facility	A building or place used predominantly for indoor recreation, whether or not operated for the purposes of gain, including a squash court, indoor swimming pool, gymnasium, table tennis centre, health studio, bowling alley, ice rink or any other building or place of a like character used for indoor recreation, but does not include an entertainment facilities, a recreation facilities (major) or a registered club.	Definition based on the Standard Instrument definition of 'recreation facilities (indoor)'.
Recreation facility (major)	A building or place used for large-scale sporting or recreation activities that are attended by large numbers of people whether regularly or periodically, and includes theme parks, sports stadiums, showgrounds, racecourses and motor racing tracks.	Standard Template definition applied.
Registered club	A club that holds a club licence under the Liquor Act 2007.	Standard Template definition applied.
Renewable energy generation facility	Includes wind turbines, field solar arrays, roof mounted solar panels and other renewable energy generation and storage facilities.	No Standard Template definition.
Research and development facility	A building or facilities used primarily for research, innovation and business development in science, technology and education including any storage or transportation associated with any such activity.	No Standard Template definition.

Land use	2019 MP definition	Definition source/alignment
Retail premises	A building or place used for the purpose of selling items by retail, or hiring or displaying items for the purpose of selling them or hiring them out, whether the items are goods or materials (or whether also sold by wholesale), and includes any of the following: a. food and drink premises b. kiosks c. shops d. markets e. vehicle sales or hire premises f. plant nursery. Note: Retail premises are a type of commercial premises — see the definition of that term in this definitions table.	Based on the Standard Instrument definition with some of the examples omitted.
Roads	A public road or a private road within the meaning of the Roads Act 1993, and includes a classified road.	Standard Template definition applied.
Specialist retail premises	A building or place the principal purpose of which is the sale, hire or display of goods, that are of a size, weight or quality requires: a. a large area for handling, display or storage, or b. direct vehicular access to the site of the building or place by members of the public for the purpose of loading or unloading such goods into or from their vehicles after purchase or hire,and including goods such as floor and window supplies, furniture, household electrical goods, equestrian supplies and swimming pools, but does not include a building or place used for the sale of foodstuffs or clothing unless their sale is ancillary to the sale, hire or display of other goods referred to in this definition. Note: Bulky goods premises are a type of Retail Premises as defined in this table.	Standard Template definition applied.
Service station	A building or place used for the sale by retail of fuels and lubricants for motor vehicles, whether or not the building or place is also used for any one or more of the following: a. The ancillary sale by retail of spare parts and accessories for motor vehicles b. The cleaning of motor vehicles c. Installation of accessories d. Inspecting, repairing and servicing of motor vehicles (other than body building, panel beating, spray painting, or chassis restoration) e. The ancillary retail selling or hiring of general merchandise or services or both.	Standard Template definition applied.
Temporary uses and structures	Temporary structures for private or community events, as well as the following specified temporary uses of land and buildings: a. Filming b. Tradeshows c. Tenant related activity d. Airport management related activity	No Standard Template definition.
Runways related activities / facilities	Activities and facilities include runways, taxiways, aprons, clearways, compass swing and engine run-up areas, glide path facilities, helicopter landing, parking and servicing, landing equipment, radar, communications and all aircraft navigational aids (visual and non-visual).	No Standard Template definition.
Vehicle storage	A building or place used for the storage of operable or inoperable vehicles that may include charging facilities for electric vehicles.	No Standard Template definition.
Warehouse or distribution centres	A building or place used mainly or exclusively for storing or handling items (whether goods or materials) pending their sale, but from which no retail sales are made.	Standard Template definition applied.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APPENDIX
STATE ENVIRONMENTAL PLANNING POLICIES



STATE ENVIRONMENTAL PLANNING POLICIES

Table E1.1 State Environmental Planning Policies

State environmental planning policies	Response
State Environmental Planning Policy No 1—Development Standards	The purpose of this SEPP is to provide more flexibility to development standards. The SEPP allows an authority to approve a non-complying development proposal provided that they can show that the set standard is unreasonable or unnecessary. BAL manages a development assessment process pursuant to the aims and objectives of the Airports Act 1996.
State Environmental Planning Policy No 19-Bushland in Urban Areas : (pub. 1986-10-24)	The aim of this SEPP is to protect and preserve bushland in urban areas. The Bushland area adjacent to Deverall Park is identified as an environmentally significant area and its management will be consistent with the SEPP.
State Environmental Planning Policy No 21-Caravan Parks : (pub. 1992-04-24)	Not relevant
State Environmental Planning Policy No 30-Intensive Agriculture : (pub. 1989-12-08)	Not relevant
State Environmental Planning Policy No 33-Hazardous and Offensive Development : (pub. 1992-03-13)	Not relevant
State Environmental Planning Policy No 36-Manufactured Home Estates : (pub. 1993-07-16)	Not relevant
State Environmental Planning Policy No 50-Canal Estate Development : (pub. 1997-11-10)	Not relevant
State Environmental Planning Policy No 55-Remediation of Land : (pub. 1998-08-28)	The Airports Act 1996 requires BAL to prepare an AES for the airport. Any development of the land would have to consider this AES. Contaminated land sites are managed through this AES and are also subject to regulation by the Airport Environment Officer, a body appointed by the Commonwealth Government under the Airports Act 1996 to regulate environmental impacts at the Airport. BAL has developed internal processes to manage contaminated sites to achieve objectives similar to the broad aims and objectives of SEPP 55
State Environmental Planning Policy No 62-Sustainable Aquaculture : (pub. 2000-08-25)	Not relevant
State Environmental Planning Policy No 64-Advertising and Signage : (pub. 2001-03-16)	BAL acknowledges the aims and objectives of SEPP 64. BAL considers issues of amenity, character and finish through its development assessment process.
State Environmental Planning Policy No 65-Design Quality of Residential Apartment Development : (pub. 2002-07-26)	Not relevant
State Environmental Planning Policy No 70-Affordable Housing (Revised Schemes) : (pub. 2002-05-01)	Not relevant
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 : Subject Land (pub. 2017-08-25)	The aim of this SEPP is to protect the biodiversity values of trees and other vegetation in non-rural areas of NSW and to preserve the amenity of these areas through the preservation of trees and other vegetation. This SEPP was one of a suite of Land Management and Biodiversity Conservation reforms that commenced in New South Wales on 25 August 2017. It works together with the Biodiversity Conservation Act 2016 and the Local Land Services Amendment Act 2016 to create a framework for the regulation of clearing of native vegetation in NSW. The SEPP ensures the biodiversity offset scheme (established under the Land Management and Biodiversity reforms) applies to all clearing of native vegetation that exceeds the offset thresholds in urban areas and environmental conservation zones that does not require development consent. The MP is consistent with the provisions of this SEPP

State environmental planning policies	Response
Greater Metropolitan Regional Environmental Plan No 2-Georges River Catchment : (pub. 1999-02-05)	This REP aims to protect the water quality of the Georges River and its tributaries and the environmental quality of the whole catchment. Water management issues are captured in Airport Environmental Strategy and acknowledge the importance of the Georges River.
State Environmental Planning Policy (Affordable Rental Housing) 2009 : (pub. 2009-07-31)	Not relevant
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 : (pub. 2004-06-25)	Any development will be developed having regard to the aims of the SEPP where relevant.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 : (pub. 2008-12-12)	Used as an assessment tool in the development assessment process, where relevant.
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 : (pub. 2004-03-31)	Not relevant
State Environmental Planning Policy (Infrastructure) 2007 : (pub. 2007-12-21)	The aim of this SEPP is to encourage a range of infrastructure works in NSW, by a consistent planning regime and appropriate consultation. The SEPP supports greater flexibility in the location of infrastructure and service facilities along with improved regulatory certainty and efficiency. The MP is consistent with the SEPP's provisions for a robust development assessment regime.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 : (pub. 2007-02-16)	Not relevant
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007 : (pub. 2007-09-28)	The aim of this SEPP is to provide for the erection of temporary structures with consent across the State as well as require any development involving subdivision of land, erection of a building or demolition of a building, to only be carried out with development consent. The Master Plan is consistent with the SEPP's provisions.

SECTION 117 DIRECTIONS

Table E1.2 Section 117 Directions under the EP&A Act

Directions	Objectives/relevance/consistency
Employment and resources	
1.1 Business and Industrial Zones	The objectives of this direction are to encourage employment growth in suitable locations (such as the Airport), to protect employment land and support the viability of identified centres. Bankstown Airport/ Milperra industrial and urban services precinct is recognised as a Priority Collaboration Area in the draft Greater Sydney Region Plan. The MP seeks to provide areas for business and industrial uses.
1.2 Rural Zones	Not relevant
1.3 Mining, Petroleum Production and Extractive Industries	Not relevant
1.4 Oyster Aquaculture	Not relevant
1.5 Rural Lands	Not relevant
Environmental and heritage	
2.1 Environment Protection Zones	The Airport is not located within an Environmental Protection Zone. Figure 12.3 identifies areas of Environmental significance.
2.2 Coastal Protection	Not relevant
2.3 Heritage Conservation	The Airport Heritage Management Plan (HMP) was prepared in 2018 and identifies items with heritage significance. The HMP provides principles, policies and specific guidelines for managing the heritage values of items at the Airport during on- going operations and proposed future development.
2.4 Recreation Vehicle Areas	Not relevant
Housing, infrastructure and urban development	
3.1 Residential Zones	Not relevant
3.2 Caravan Parks and Manufactured Home Estates	Not relevant
3.3 Home Occupations	Not relevant
3.4 Integrating Land Use and Transport	The MP enhances the Airport's position as a transport and employment area and integrates a variety of land uses in the one location. In turn, this improves the opportunity for access to the site by means other than private transport; the opportunities for public transport; and provides for the efficient movement of freight.
3.5 Development Near Licensed Aerodromes	The objectives of this direction are: (a) to ensure the effective and safe operation of aerodromes, and (b) to ensure that their operation is not compromised by development that constitutes an obstruction, hazard or potential hazard to aircraft flying in the vicinity, and c) to ensure development for residential purposes or human occupation, if situated on land within the ANEF contours of between 20 and 25, incorporates appropriate mitigation measures so that the development is not adversely affected by aircraft noise. These factors have been addressed in the MP
3.6 Shooting Ranges	Not relevant
Hazard and risk	
4.1 Acid Sulfate Soils	Any development within areas affected by acid sulphate soils will be subject to the required development assessment process
4.2 Mine Subsidence and Unstable Land	Not relevant

Directions	Objectives/relevance/consistency
4.3 Flood Prone Land	All development will be required to address the relevant principles and guidelines established by the NSW Floodplain Development Manual and the Bankstown Airport Stormwater and Flood Management Strategy review (2018) which was prepared to serve as the overarching policy framework in the MP.
4.4 Planning for Bushfire Protection	Not relevant
Regional planning	
5.1 Implementation of Regional Strategies	Revoked 17/10/2017
5.2 Sydney Drinking Water Catchments	Not relevant
5.3 Farmland of State and Regional Significance on the NSW Far North Coast	Not relevant
5.4 Commercial and Retail Development along the Pacific Highway, North Coast	Not relevant
5.5 Development in the vicinity of Ellalong, Paxton and Millfield (Cessnock LGA)	Revoked 18/06/2010
5.6 Sydney to Canberra Corridor	Revoked 10/7/2008
5.7 Central Coast	Revoked 10/7/2008
5.8 Second Sydney Airport: Badgerys Creek	The directions set out in the draft Greater Sydney Regional Plan with regard to the second Sydney airport at Badgerys Creek have been considered in the preparation of this MP. There is currently insufficient build and aeronautical data to contemplate further than the directions set out in the regional strategic plan.
5.9 North West Rail Link Corridor Strategy	Not relevant
5.10 Implementation of Regional Plans	The draft Greater Sydney Regional Plan has been considered in the preparation of this MP.
Local plan making	
6.1 Approval and Referral Requirements	The MP complies with the objective of this direction which is to ensure that zoning provisions encourage the efficient and appropriate assessment of development.
6.2 Reserving Land for Public Purposes	The site is currently zoned 'SP2 Infrastructure – Air Transport Facilities' in the Bankstown Local Environmental Plan 2015 and its continued use as an airport is encouraged within the MP.
6.3 Site Specific Provisions	The MP complies with the objective of this direction which seeks to discourage unnecessarily restrictive site specific planning controls.
Metropolitan Planning	
7.1 Implementation of A Plan for Growing Sydney	The MP complies with the objective of this direction which gives legal effect to the planning principles; directions; and priorities for sub-regions, strategic centres and transport gateways contained in A Plan for Growing Sydney. The MP has been developed with consideration to A Plan for Growing Sydney.
7.2	Not relevant
7.3	Not relevant
7.4	Not relevant
7.5	Not relevant
7.6	Not relevant

LOCAL PLANNING INSTRUMENTS

Table E1.3 Local Planning Instruments

BLEP 2015 provision	Details	Bankstown Airport MP response
Part 1 Preliminary	This section outlines a range of overarching aims for the BLEP 2015 being: a. to manage growth in a way that contributes to the sustainability of Bankstown, and recognises the needs and aspirations of the community b. to protect and enhance the landform and vegetation, especially foreshores and bushland, in a way that maintains the biodiversity values and landscape amenity of Bankstown c. to protect the natural, cultural and built heritage of Bankstown, d. to provide development opportunities that are compatible with the prevailing suburban character and amenity of residential areas of Bankstown e. to minimise risk to the community in areas subject to environmental hazards by restricting development in sensitive areas f. to provide a range of housing opportunities to cater for changing demographics and population needs g. to provide a range of business and industrial opportunities to encourage local employment and economic growth h. to provide a range of recreational and community service opportunities to meet the needs of residents of and visitors to Bankstown i. to achieve good urban design in terms of site layouts, building form, streetscape, architectural roof features and public and private safety j. to concentrate intensive trip-generating activities in locations most accessible to rail transport to reduce car dependence and to limit the potential for additional traffic on the road network k. to consider the cumulative impact of development on the natural environment and waterways and on the capacity of infrastructure and the road network l. to enhance the quality of life and the social well-being and amenity of the community.	The aims of the plan will be considered in the development assessment process.
Part 2 Permitted or prohibited development	This section sets out a variety of land use zones across the parts of the Canterbury Bankstown LGA covered by the previously defined Bankstown LGA. There are objectives set out for each of these zones as well as a land use table that identifies permissible and prohibited development.	The 2019 MP sets out land use zones and land use tables similar to those utilised in the BLEP 2015. The area of Bankstown Airport is zoned SP2 Special Infrastructure – Airport within BLEP 2015.
Part 3 Exempt and complying standards	This section outlines development that is considered exempt and complying.	The Exempt and Complying SEPP supersedes the provisions set out in this part of the BLEP 2015.
Part 4 Principal development standards	**Clause 4.3 Height of buildings (HOB)** This clause outlines the objectives of HOB being to ensure that the height of development is compatible with the character, amenity and landform of the area where it will be located, to provide appropriate height transitions and to define focal points.	Appropriate built form controls are considered within the development assessment process.
	Clause 4.4 Floor Space Ratio (FSR) This clause outlines the objectives of FSR being to regulate scale and bulk consistent with the character of the area.	Appropriate built form controls are considered within the development assessment process.
	Clause 4.6 Exceptions to development standards The objectives of this clause are to provide an appropriate degree of flexibility in applying certain development standards to particular development and to achieve better outcomes for and from development by allowing flexibility in particular circumstances. The clause sets out a range of provisions for when exceptions to developments standards may be granted.	These provisions will be considered in the development assessment process.

BLEP 2015 provision	Details	Bankstown Airport MP response
Part 5 Miscellaneous provisions	**Clause 5.4 Controls relating to miscellaneous permissible uses** This clause outlines provisions for a variety of permissible uses including the following two of relevance to BAL: **Industrial retail outlets** If development for the purposes of an industrial retail outlet is permitted under this Plan, the retail floor area must not exceed: a. 40% of the gross floor area of the industry or rural industry located on the same land as the retail outlet, or b. 400 square metres, whichever is the lesser. **Kiosks** If development for the purposes of a kiosk is permitted under this Plan, the gross floor area must not exceed 30 square metres.	These provisions will be considered in the development assessment process.
	Clause 5.10 Heritage conservation This clause outlines objectives and for the protection of heritage items and their setting and states that consent is required for any alterations, works or changes to heritage items. Other provisions and objectives relate to development in the vicinity of heritage items, archaeological sites or potential archaeological sites and their setting.	Under Schedule 5 of the LEP, 'Bankstown aerodrome' is a listed heritage item. Development proposals will consider the Heritage Management Strategy developed for the Airport.
Part 6 Additional local provisions	**Clause 6.1 Acid sulfate soils** This clause outlines that development consent is required for works on acid sulphate soils and lists various classes of works.	Any development within areas affected by acid sulfate soils will be subject to the development assessment process
	Clause 6.2 Earthworks The objective of this clause is to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land. The clause outlines when development consent is required and a range of provisions to be considered when granting development consent.	The objective and provisions set out in this clause will be considered in the development assessment process for earthworks.
	Clause 6.3 Flood planning These clauses applies to land at or below the flood planning level and its objectives are to minimise the flood risk to life and property associated with the use of land, allow development on land that is compatible with the land's flood hazard and avoid significant adverse impacts on flood behaviour and the environment. The clause outlines when development consent is required and a range of provisions to be considered when granting development consent.	Any development on flood liable land will be the subject to the development assessment process. This process includes development addressing the guiding principles contained within the Bankstown Airport Stormwater and Flooding Strategy Review 2018, Bankstown Council's relevant DCPs and NSW Floodplain Management Manual.
	Clause 6.6 Development in areas subject to aircraft noise This objectives of this clause are to prevent noise sensitive development from being located near the airport and its flight paths, to assist in minimising the impact of aircraft noise and to ensure that land use and development in the vicinity of the Bankstown Airport do not hinder or have any other adverse impacts on the ongoing, safe and efficient operation of Bankstown Airport. A range of provisions are set out in this clause that detail under what conditions development consent may be granted within specified ANEFs.	The MP incorporates noise and OLS standards which are addressed in relevant sections of the MP.
	Clause 6.8 Special provisions applying to centre based child care facilities This clause sets out additional provisions for centre based child care facilities being: Despite any other provision of this Plan, development consent must not be granted for the purpose of a centre-based child care facilities on land if the vehicular access to that land is from: a. a classified road, or b. a cul-de-sac road or a road where the carriageway between kerbs is less than 10 metres.	The objective and provisions set out in this clause will be considered in the development assessment process for child care facilities.



F

APPENDIX
ENVIRONMENT AND SUSTAINABILITY POLICY



SYDNEY METRO AIRPORTS

BANKSTOWN & CAMDEN

Environment and Sustainability Policy

Bankstown Airport Limited and Camden Airport Limited form part of Sydney Metro Airports. Sydney Metro Airports is committed to providing a centre of excellence for aviation, commercial and industrial facilities. Sydney Metro Airports actively involve all employees, tenants, sub-contractors, suppliers and consultants to:

- Promote a culture of shared responsibility for environmental and sustainability outcomes
- Meet or exceed compliance with all applicable laws, regulations and statutory obligations
- Identify, assess and manage risk to the environment
- Improve our energy, water and resource efficiency, and take all reasonable and practical steps to minimise pollution and reduce waste and other adverse environmental effects
- Develop our people and provide resources to enable us to meet our objectives and performance requirements
- Value heritage and respect traditional land owner groups
- Engage with the Department of Infrastructure, Regional Development and Cities (DIRDC), the communities we work within and other stakeholders on sustainability and environmental matters
- Promoting sustainable practices within the decision making process
- Be transparent in the investigation of environmental incidents to identify all causal factors and actions taken to prevent recurrence and minimise environmental impact
- Regularly monitor, review and evaluate our performance to ensure continuous environmental improvement across our airports



Lee de Winton

Chief Executive Officer

Date: 4 April 2018



G

APPENDIX
ENDORSED ANEF



ENDORSED ANEF

Table G1.1 2039 average daily aircraft movement

Runway	Aircraft	Arrivals			Departures			Training			Grand total
		Day	Night	Total	Day	Night	Total	Day	Night	Total	
Fixed Wing											
11C	ATR42	0.01116	1.08631	1.09747	0.01116	1.08631	1.09747	-	-	-	2.19493
	BAE146	0.00639	0.00140	0.00779	0.00639	0.00140	0.00779	-	-	-	0.01558
	BEC300	1.62074	0.42811	2.04885	1.62074	0.42811	2.04885	-	-	-	4.09770
	BEC58P	9.65922	2.55429	12.21351	9.65922	2.55429	12.21351	11.72491	3.12906	14.85396	39.28097
	BN2A	0.03976	0.01395	0.05372	0.03976	0.01395	0.05372	-	-	-	0.10744
	CNA182	1.18937	0.23150	1.42087	1.18937	0.23150	1.42087	1.10763	0.12666	1.23429	4.07603
	CNA208	1.00370	1.05905	2.06275	1.00370	1.05905	2.06275	-	-	-	4.12550
	CNA404	0.03451	0.00303	0.03754	0.03451	0.00303	0.03754	-	-	-	0.07508
	CNA510	1.51293	0.43200	1.94493	1.51293	0.43200	1.94493	-	-	-	3.88985
	CNA750	0.14720	0.03045	0.17765	0.14720	0.03045	0.17765	-	-	-	0.35531
	DHC830	0.02601	-	0.02601	0.02601	-	0.02601	-	-	-	0.05202
	GASEPF	12.45500	3.22625	15.68125	12.45500	3.22625	15.68125	47.67712	6.94538	54.62250	85.98500
	GV	0.02788	0.00381	0.03169	0.02788	0.00381	0.03169	-	-	-	0.06338
	PA60	0.09092	0.07523	0.16616	0.09092	0.07523	0.16616	-	-	-	0.33231
	SA227	0.05540	1.10013	1.15553	0.05540	1.10013	1.15553	-	-	-	2.31106
11C - Subtotal		27.88020	10.24550	38.12570	27.88020	10.24550	38.12570	60.50966	10.20110	70.71076	146.96216
11L	ATR42	-	-	-	-	-	-	-	-	-	-
	BAE146	-	-	-	-	-	-	-	-	-	-
	BEC300	0.57991	-	0.57991	0.57991	-	0.57991	-	-	-	1.15983
	BEC58P	9.46594	-	9.46594	9.46594	-	9.46594	8.99410	-	8.99410	27.92598
	BN2A	0.06775	-	0.06775	0.06775	-	0.06775	-	-	-	0.13550
	CNA182	1.34007	-	1.34007	1.34007	-	1.34007	0.98635	-	0.98635	3.66649
	CNA208	1.31455	-	1.31455	1.31455	-	1.31455	-	-	-	2.62911
	CNA404	0.02927	-	0.02927	0.02927	-	0.02927	-	-	-	0.05853
	CNA510	-	-	-	-	-	-	-	-	-	-
	CNA750	-	-	-	-	-	-	-	-	-	-
	DHC830	-	-	-	-	-	-	-	-	-	-
	GASEPF	17.22295	-	17.22295	17.22295	-	17.22295	21.81203	-	21.81203	56.25793
	GV	-	-	-	-	-	-	-	-	-	-
	PA60	0.04866	-	0.04866	0.04866	-	0.04866	-	-	-	0.09731
	SA227	-	-	-	-	-	-	-	-	-	-
11L - Subtotal		30.06910	-	30.06910	30.06910	-	30.06910	31.79248	-	31.79248	91.93068

Runway	Aircraft	Arrivals			Departures			Training			Grand total
		Day	Night	Total	Day	Night	Total	Day	Night	Total	
Fixed Wing											
11R	ATR42	-	-	-	-	-	-	-	-	-	-
	BAE146	-	-	-	-	-	-	-	-	-	-
	BEC300	-	-	-	-	-	-	-	-	-	-
	BEC58P	1.49137	-	1.49137	1.49137	-	1.49137	14.37297	-	14.37297	17.35571
	BN2A	-	-	-	-	-	-	-	-	-	-
	CNA182	0.21875	-	0.21875	0.21875	-	0.21875	1.07259	-	1.07259	1.51010
	CNA208	-	-	-	-	-	-	-	-	-	-
	CNA404	-	-	-	-	-	-	-	-	-	-
	CNA510	-	-	-	-	-	-	-	-	-	-
	CNA750	-	-	-	-	-	-	-	-	-	-
	DHC830	-	-	-	-	-	-	-	-	-	-
	GASEPF	3.43517	-	3.43517	3.43517	-	3.43517	120.03142	-	120.03142	126.90177
	GV	-	-	-	-	-	-	-	-	-	-
	PA60	-	-	-	-	-	-	-	-	-	-
	SA227	-	-	-	-	-	-	-	-	-	-
11R - Subtotal		5.14530	-	5.14530	5.14530	-	5.14530	135.47698	-	135.47698	145.76758
29C	ATR42	0.00396	0.26844	0.27240	0.00396	0.26844	0.27240	-	-	-	0.54480
	BAE146	0.00591	-	0.00591	0.00591	-	0.00591	-	-	-	0.01181
	BEC300	1.37934	0.40756	1.78690	1.37934	0.40756	1.78690	-	-	-	3.57380
	BEC58P	10.69500	2.40561	13.10061	10.69500	2.40561	13.10061	12.58346	0.60512	13.18858	39.38980
	BN2A	0.06557	0.00876	0.07433	0.06557	0.00876	0.07433	-	-	-	0.14867
	CNA182	1.72868	0.09561	1.82430	1.72868	0.09561	1.82430	1.98079	0.12127	2.10207	5.75066
	CNA208	1.40792	0.59930	2.00721	1.40792	0.59930	2.00721	-	-	-	4.01443
	CNA404	0.05535	0.01101	0.06636	0.05535	0.01101	0.06636	-	-	-	0.13272
	CNA510	1.75058	0.30664	2.05722	1.75058	0.30664	2.05722	-	-	-	4.11445
	CNA750	0.15437	0.01044	0.16481	0.15437	0.01044	0.16481	-	-	-	0.32963
	DHC830	0.02707	0.00171	0.02878	0.02707	0.00171	0.02878	-	-	-	0.05757
	GASEPF	18.75902	1.71159	20.47061	18.75902	1.71159	20.47061	41.47929	1.50325	42.98253	83.92375
	GV	0.03733	0.00221	0.03954	0.03733	0.00221	0.03954	-	-	-	0.07909
	PA60	0.07283	0.12125	0.19408	0.07283	0.12125	0.19408	-	-	-	0.38816
	SA227	0.32961	0.91714	1.24675	0.32961	0.91714	1.24675	-	-	-	2.49351
29C - Subtotal		36.47255	6.86727	43.33983	36.47255	6.86727	43.33983	56.04354	2.22964	58.27318	144.95283

Runway	Aircraft	Arrivals			Departures			Training			Grand total
		Day	Night	Total	Day	Night	Total	Day	Night	Total	
Fixed Wing											
29L	ATR42	-	-	-	-	-	-	-	-	-	-
	BAE146	-	-	-	-	-	-	-	-	-	-
	BEC300	-	-	-	-	-	-	-	-	-	-
	BEC58P	1.93113	-	1.93113	1.93113	-	1.93113	18.60366	-	18.60366	22.46591
	BN2A	-	-	-	-	-	-	-	-	-	-
	CNA182	0.38266	-	0.38266	0.38266	-	0.38266	2.34731	-	2.34731	3.11264
	CNA208	-	-	-	-	-	-	-	-	-	-
	CNA404	-	-	-	-	-	-	-	-	-	-
	CNA510	-	-	-	-	-	-	-	-	-	-
	CNA750	-	-	-	-	-	-	-	-	-	-
	DHC830	-	-	-	-	-	-	-	-	-	-
	GASEPF	3.06530	-	3.06530	3.06530	-	3.06530	123.20373	-	123.20373	129.33434
	GV	-	-	-	-	-	-	-	-	-	-
	PA60	-	-	-	-	-	-	-	-	-	-
	SA227	-	-	-	-	-	-	-	-	-	-
29L - Subtotal		5.37909	-	5.37909	5.37909	-	5.37909	144.15470	-	144.15470	154.91288
29R	ATR42	-	-	-	-	-	-	-	-	-	-
	BAE146	-	-	-	-	-	-	-	-	-	-
	BEC300	0.53270	-	0.53270	0.53270	-	0.53270	-	-	-	1.06540
	BEC58P	9.57834	-	9.57834	9.57834	-	9.57834	11.65767	-	11.65767	30.81434
	BN2A	0.04457	-	0.04457	0.04457	-	0.04457	-	-	-	0.08914
	CNA182	1.54692	-	1.54692	1.54692	-	1.54692	2.42277	-	2.42277	5.51662
	CNA208	1.72214	-	1.72214	1.72214	-	1.72214	-	-	-	3.44428
	CNA404	0.03762	-	0.03762	0.03762	-	0.03762	-	-	-	0.07523
	CNA510	-	-	-	-	-	-	-	-	-	-
	CNA750	-	-	-	-	-	-	-	-	-	-
	DHC830	-	-	-	-	-	-	-	-	-	-
	GASEPF	14.37645	-	14.37645	14.37645	-	14.37645	25.09852	-	25.09852	53.85141
	GV	-	-	-	-	-	-	-	-	-	-
	PA60	0.01967	-	0.01967	0.01967	-	0.01967	-	-	-	0.03934
	SA227	-	-	-	-	-	-	-	-	-	-
29R - Subtotal		27.85841	-	27.85841	27.85841	-	27.85841	39.17896	-	39.17896	94.89578

Runway	Aircraft	Arrivals			Departures			Training			Grand total
		Day	Night	Total	Day	Night	Total	Day	Night	Total	
Fixed Wing											
Fixed Wing - Subtotal		132.80466	17.11277	149.91743	132.80466	17.11277	149.91743	467.15631	12.43074	479.58705	779.42192
Helicopters											
HLS1	B427	2.57646	-	2.57646	2.57646	-	2.57646	-	-	-	5.15291
	B407	5.55216	-	5.55216	5.55216	-	5.55216	-	-	-	11.10431
	R44	22.72098	-	22.72098	22.72098	-	22.72098	57.86634	-	57.86634	103.30830
	B430	-	-	-	-	-	-	-	-	-	-
HLS1 - Subtotal		30.84959	-	30.84959	30.84959	-	30.84959	57.86634	-	57.86634	119.56552
HLS11C/29C	B427	-	0.41290	0.41290	-	0.41290	0.41290	-	-	-	0.82581
	B407	-	0.14673	0.14673	-	0.14673	0.14673	-	-	-	0.29347
	R44	-	1.27029	1.27029	-	1.27029	1.27029	-	3.18665	3.18665	5.72723
	B430	8.60121	4.31332	12.91453	8.60121	4.31332	12.91453	-	-	-	25.82906
HLS11C/29C - Subtotal		8.60121	6.14325	14.74446	8.60121	6.14325	14.74446	-	3.18665	3.18665	32.67557
Helicopter - Subtotal		39.45080	6.14325	45.59406	39.45080	6.14325	45.59406	57.86634	3.18665	61.05298	152.24110
Grand total		172.25546	23.25603	195.51149	172.25546	23.25603	195.51149	525.02265	15.61739	540.64004	931.66301

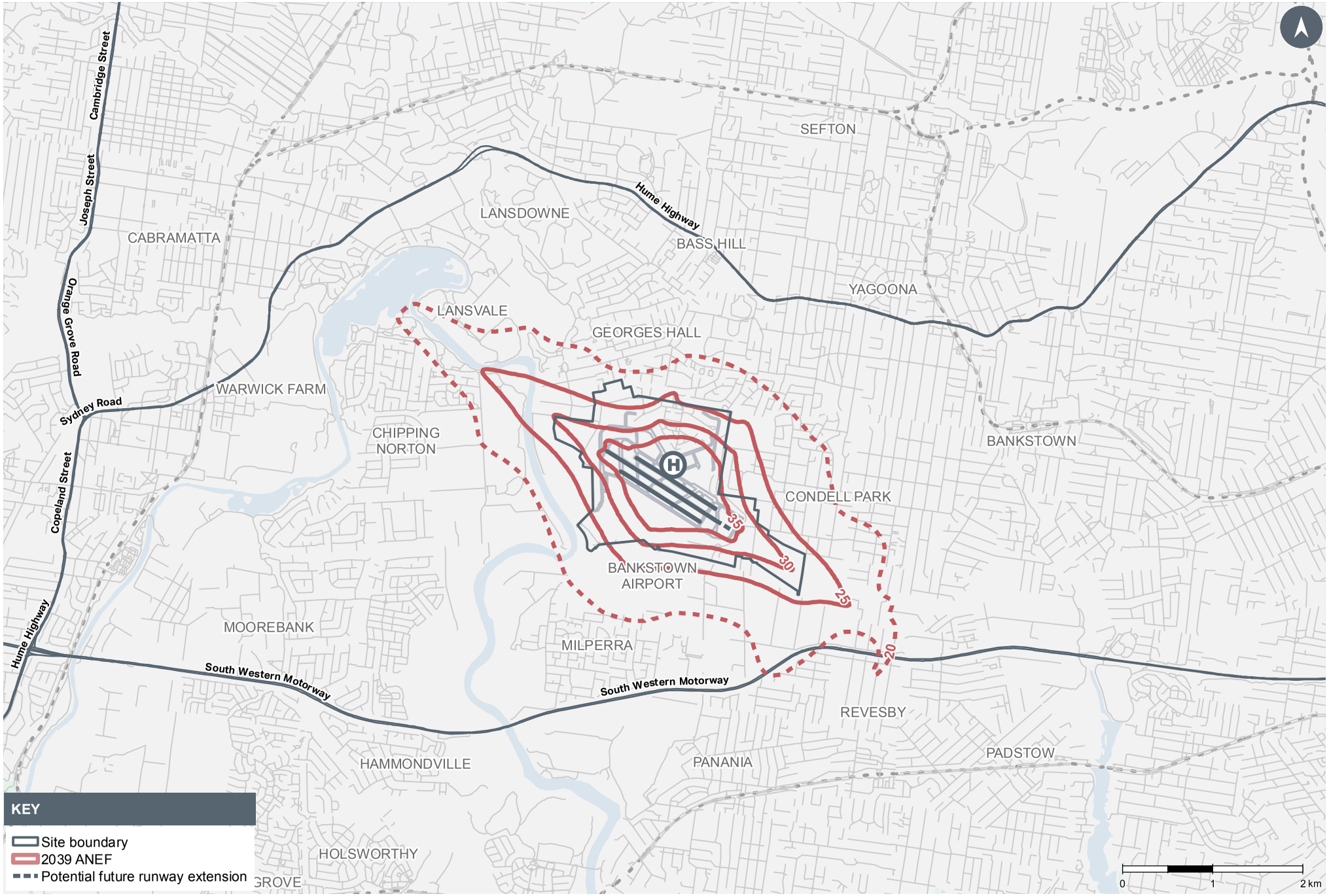

Figure G.1: 2039 ANEF



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APPENDIX
FLYING NEIGHBOURLY PROCEDURES PROGRAM



AIRCRAFT GROUND BASED NOISE

Sydney Metro Airport - Bankstown investigates all and noise complaints associated with ground based activities. The Airport regularly communicates with its Customers about noise generation and the impact ground based noise has on the local community. The Airport oversees the following issues and investigates concerns received from the local community in relation to these issues:

- Ground running of aircraft and aircraft servicing
- Mechanical plant and equipment
- Non-aviation industrial activities
- On airport road traffic
- Operation of fixed audible alarm or warning systems
- On airport construction activities

To register your concerns about ground based noise, please contact the Airport on 8709 9400.

WORRIED ABOUT AIRCRAFT NOISE?

Airservices Australia is responsible for the investigation of aircraft noise. Complaints regarding aircraft noise in relation to aircraft movements, can be raised with Airservices Australia on 1800-802- 584.

FLY FRIENDLY PROGRAM

Sydney Metro Airport - Bankstown is implementing this initiative with the aviation community at the Airport. We recognise that ensure its success, we will need to undertake regular and sustained communications with aircraft operators, the community and other interested parties.





SYDNEY METRO AIRPORTS - BANKSTOWN RECOGNISES AIRCRAFT NOISE IS AN IMPORTANT ISSUE FOR THE COMMUNITY CLOSE TO AN AIRPORT

Australian airports are heavily regulated by federal laws and regulations, and each airport must produce a range of documents such as Master Plans and Environment Management Plans which govern their daily operations. As part of the Airport Environment Strategy (AES) we made a commitment to produce a Noise Management Plan which we hope will assist the community to understand noise in general, noise at airports and noise management at Sydney Metro Airport – Bankstown.

A key component of our Noise Management Plan is the Fly Neighbourly procedures. The Fly Neighbourly procedures are a voluntary Code of Conduct implemented with the support of the aviation community at Bankstown Airport. They have been developed to reduce aircraft noise impacts on the local surrounding community.

In preparing our Fly Neighbourly procedures we have taken the time to speak with many aviation operators including flight training companies as well as fixed wing and rotary wing operators. This is to make sure the program is realistic and able to be implemented to deliver the outcome of minimising aviation noise impact on the community.

HELICOPTER PROCEDURES

- Adopt and maintain best rates of climb, to minimise noise over residential areas, as soon as possible after take off
- Maintain correct tracks after takeoff*
- Always look ahead and select the least noise sensitive route (try to avoid hospitals, schools and residential areas)
- Fly above 500 ft, and try to be above 1,000 ft when flying over noise sensitive areas
- Avoid blade slap
- Vary your flight path especially during circuit training and when accessing visual landmarks.
- Restrict low level training to designated approved areas
- Conduct circuit training at the main helipad between 7.00am and 7.00pm (or last light, if earlier) Monday to Friday, between 8.00am and 6.00pm (or last light, if earlier) on Saturday, and between 9.00am and 6.00pm (or last light, if earlier) on Sunday**

* Note: In line with CASA requirements

** Note: Airservices Australia requirements apply when this isn't practical

FIXED-WING AIRCRAFT PROCEDURES

- Adopt and maintain best rates of climb, to minimise noise over residential areas, as soon as possible after take off
- Maintain correct tracks after take-off*
- Reduce engine revs as soon as possible
- Follow designated flight paths
- Avoid flying over residential areas, hospital and schools when possible and when you do try to be above 1000ft
- Conduct circuit training between 6.00am and 10.00pm Monday to Friday. During Daylight Savings, circuit training must finish by 10.30pm. On Saturday and Sunday, circuit training is between 7.00am till last light.**
- Keep circuits as compact as possible – don't fly wide circuits
- Use the preferred runway direction 29, over the Georges River**

* Note: In line with CASA requirements

** Note: Airservices Australia requirements apply when this isn't practical

FLY FRIENDLY - *FLY NEIGHBOURLY*

Pilots and aircraft operating at Sydney Metro Airport – Bankstown must comply with a range of regulations and procedures stipulated by Airservices Australia and the Civil Aviation Safety Authority (CASA) which include the En Route Supplement Australia (ERSA) and the Visual Pilot Guide. Noise Abatement procedures form part of these requirements.

In addition to these requirements, Sydney Metro Airport in consultation with a variety of airport users has developed these voluntary procedures to assist pilots to minimise their operational noise impact on the community. Naturally, the implementation of these voluntary procedures is subject to safety and operational considerations.

We salute the many pilots who currently Fly Neighbourly and hope the wider aviation community at Sydney Metro Airport Bankstown will embrace these procedures.

As part of our Fly Neighbourly Code of Conduct we are asking pilots of fixed-wing aircraft and helicopters to endeavour to practice the following principles.





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APPENDIX
STAKEHOLDER CONSULTATION



STAKEHOLDER CONSULTATION

INITIAL STAKEHOLDER CONSULTATION AND BRIEFINGS

As part of the initial consultation stage during the preparation of the Preliminary Draft Master Plan, BAL has actively engaged with a wide range of government, industry and community stakeholders.

These have included:

- Australian Government agencies, including the Department of Infrastructure, Regional Development and Cities, Department of Environment and Energy, Airservices Australia and CASA
- NSW Government agencies, including Transport for NSW, Roads and Maritime Services, Department of Planning, Industry and Environment and the Environment Protection Authority
- Local Government, including representatives from Canterbury Bankstown Council, Liverpool Council and Fairfield Council
- Airport business operators
- The wider community (primarily through the Bankstown Airport Community Aviation Consultative Committee)
- The feedback and comments received during this initial engagement have contributed to the Preliminary Draft Master Plan.

In accordance with section 79(1A) of the Airports Act, BAL has formally advised the following of its intentions to prepare the new Master Plan:

- NSW Minister for Planning
- NSW Department of Planning, Industry and Environment
- The three Local Governments surrounding the Airport – Canterbury-Bankstown, Liverpool and Fairfield Councils.

PUBLIC CONSULTATION SUMMARY

As required by the Act, the Bankstown Airport Preliminary Draft Master Plan 2019 was exhibited for public consultation for 63 business days from 26 October 2018 to 25 January 2019. Throughout this phase, a range of stakeholder and community engagement activities were undertaken.

- Public notification the Preliminary Draft Master Plan had been released for public comment. These include:
  - State newspapers – The Sydney Morning Herald and The Daily Telegraph
  - Local area newspaper – Canterbury-Bankstown Express
  - Multilingual newspapers – Future News (Arabic), Australian Chinese Daily (Chinese) and Viet's Herald Viet Luan (Vietnamese).
  - Newspaper notices detailed the Preliminary Draft Master Plan, the consultation period, locations where copies of the Preliminary Draft Master Plan could be viewed or purchased, and details of Bankstown Airport's website, project phone number and email address
- Public display of the Preliminary Draft Master Plan The locations included:
  - Bankstown Airport Passenger Terminal
  - Bankstown Library and Knowledge Centre
  - Fairfield Council
  - Liverpool Library
  - A dedicated Master Plan website, email and phone line
  - A notice in the Aero Flyer October edition and a special edition specfically for the Master Plan
  - A Bankstown Airport Master Plan 2019 Quick Reference Guide and five factsheets. Hardcopies of these documents were available in at locations where the Preliminary Draft Master Plan were placed and available online via the Bankstown Airport website.

- Community Information sessions at the following locations:
    - IGA Georges Hall – 22 November 2018
    - Bankstown Central – 23 November and 24 November 2018
    - Master Plan presentation to the Airport tenants on 22 November 2018.

A total of 23 submissions were received during this period, with an additional 2 made after the close of the public consultation period.

All submitters received a written acknowledgement from Bankstown Airport.

Of the submissions received, the majority of the concerns identified are with regards to change in the ANEF 2039, flooding and water management at the Airport and the Ground Transport Plan.

The NSW Government raised concerns primarily in regards to traffic movement around the Airport and the need to reach an agreement on road and intersection improvements including cost sharing.

Adjoining council submissions primarily focused on flooding and water management, environmental strategy, Ground Transport Plan, and ANEF 2039 and land use planning issues (i.e. out of centre retail development).

Residents within close proximity to the Airport raised concerns primarily around aircraft noise and impacts. Existing tenants at the Airport expressed concerns around the Land Use Plan, commercial agreements and potential loss of general aviation activity at the Airport.

BAL has given due regard to the written comments made in relation to the Preliminary Draft Bankstown Airport Master Plan 2019 from submitters and stakeholders, including those required under the Airports Act. The Draft Master Plan 2019 has been updated to respond to key issues raised.

A detailed response to all submissions raised, giving due regard to such submissions, has been provided to the Minister for Infrastructure, Transport and Regional Development.

